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1.0 FOREWORD

The NASA EEE Parts Selection List (NPSL) has been developed as a "parts selection tool" specifically geared toward design and parts engineering organizations internal to NASA and to universities and original equipment manufacturers (OEMs) that do not have the resources for a dedicated quality and reliability infrastructure in parts engineering. The NPSL is a listing of electrical, electronic, and electromechanical (EEE) part types and advanced packaging technologies such as Multi-Chip Modules (MCM) which are produced under various government and/or industry quality systems.

Since NASA's Standard EEE Parts List, MIL-STD-975, was cancelled without replacement on May 3, 1998, the NPSL provides a viable alternative for parts selection. However, there are some key differences in the philosophy of these two documents which users must be aware of:

MIL-STD-975 NPSL

Defines "Standard" and "Non-Standard" Parts Leaves standardization up to the individual flight projects Defines a "Non-Standard Parts Approval Request" (NSPAR) policy Leaves it to the individual flight projects to approve parts for the intended application Intended to be invoked as a contract requirement Not intended to be invoked as a contract requirement Very stringent requirements for parts listings Designed to facilitate listing of newer, advanced technologies

OEMs that have an established parts engineering infrastructure may elect to use the NPSL to augment their own existing part selection lists. The NPSL may be chosen, in part or in its entirety, to be a subset of a Project Approved Parts List (PAPL) or equivalent. The decision to invoke the NPSL shall be made by the project based on the parts management and control requirements for that mission. The NPSL itself, should not be imposed as a contractual requirement, but the associated part listings may be established as approved selections by the project.

2.0 ABOUT THIS DOCUMENT

2.1 General:

The NPSL is a selection tool providing designers with a list of EEE parts intended to meet system design requirements and NASA Parts Program quality/reliability levels. It is not mandatory that the parts listed herein be the only selections used to design a system, but if a particular function is needed and a suitable part is listed, the NASA EEE Parts Assurance Group (NEPAG) recommends the listed part as the first order of precedence for selection. Selecting a part from the NPSL may provide cost savings/ avoidance for the project because:

The procurement specification already exists The manufacturer has had a NASA survey or government audit performed The parts are available under one or several NASA accepted quality assurance systems Part qualification has been successfully completed All or most of the parts engineering has already been performed

The parts listed are approved for use only if NASA flight project approval is given. The document lists parts according to established quality assurance levels and NASA Parts Program knowledge of the product and manufacturer such as qualification history, GIDEP and failure trends, and delivery performance. This combination allows NEPAG to make a technical assessment of the quality, availability, capability and reliability and to list parts at a corresponding quality level within this document.

2.2 World Wide Web Access to the NPSL

The NPSL has been developed and will be maintained as an on-line World Wide Web homepage accessible via http://nepp.nasa.gov/npsl. The primary objectives of using the WWW as the platform for maintaining the NPSL are to:

Provide broad and ready access by NASA affiliated organizations world wide Facilitate quick updates, modifications, and revisions Provide links to additional EEE part information

Users will have to access the NPSL on-line and be able to download the document if a printout is desired.

2.3 Configuration Management

Under Construction

2.4 Appendices:

Appendix A (when released) will contain guidelines for derating parts. In general, these guidelines are accepted by NEPAG for use on all projects. Flight projects may elect to further develop these guidelines into requirements. Appendix A may not contain derating criteria for all part types, but guidelines provided can be used as a baseline for project derating requirements.

Appendix B is a repository of useful WWW links to additional parts information databases which can be accessed to support parts selection and application issues.

3.0 USING THIS DOCUMENT

The NPSL has been structured into four primary sections to facilitate finding the information of interest:

Welcome and User Feedback Section (Banner Page) Use Policy Section Parts Listings by Commodity Type Sections Appendices

The Parts Listings by Commodity Type Sections contains the actual part selection listings. The part types which will be covered in the NPSL consist of advanced packaging technologies such as MCMs and the commodities defined as electrical, electronic, and electromechanical (EEE) parts. The commodity types are listed below according to the Federal Stock Classification (FSC) system.

Part Types FSC

Capacitors 5910 Circuit Breakers 5925 Connectors 5935 Crystals and Crystal Oscillators 5955 Fiber Optics 60GP Filters 5915 Fuses 5920 Inductors 5950 Microcircuits (Monolithic and Hybrid) 5962 Relays 5945 Resistors 5905 Semiconductors (Diode and Transistor) 5961 Thermistors 5905 Transformers 5950 Wire and Cable 6145

Within each commodity class the parts are listed in order by procurement specifications in existence as NASA, DoD, or other space agency (e.g. ESA or NASDA) specifications. The part listing for each specification begins with a detailed explanation of the part numbering system. These explanations and the part listings which follow help the user "build" the appropriate part number for the project application. General functional descriptions and generic part number cross-references are provided to assist the user in matching functionality. The part quality levels, radiation tolerance levels (if known), and the available manufacturer sources are also identified.

Although extensive efforts have been made to maintain the accuracy of the supplier information within the part listings, users are encouraged to visit the Defense Supply Center Columbus (DSCC), http://www.dscc.dla.mil/programs/qmlqpl/. DSCC is the Department of Defense agency responsible for certifying suppliers of military specification EEE parts. At this site, users can download the latest Qualified Products List (QPL) for the part type of interest.

4.0 GENERAL REQUIREMENTS

Selection of parts for inclusion in the device listings in this document is based on a review of technical data by the NASA EEE Parts Assurance Group (NEPAG) for quality and reliability trends. The major criteria used to evaluate candidate parts are:

o Quality system and assurance level the products are produced under

o Product performance

o Product workmanship assessments

o Destructive Physical Analysis results

o Failure histories

o Reliability trends

o GIDEP alert histories of the product and manufacturer

o Qualification and screening test results

o Product availability

o Manufacturer audit and survey results

o Manufacturer responsiveness to corrective actions

o Manufacturer delivery histories

Participation by the manufacturers in a quality program such as QPL, QML, and ISO 9000. will not automatically qualify their products for listing in the NPSL. Listings will be based on results from assessments of all the major criteria listed above. EEE parts-related activities throughout NASA provide recommendations for listing parts in this document.

NOTE: Unless specifically stated within the parts selection tables of the NPSL, listing of a device technology herein does NOT imply/guarantee Radiation Hardness Assurance (RHA). Applications concerned with a device's ability to tolerate exposure to various forms of space radiation (e.g., total ionizing dose, single event effects, etc.) should be reviewed and have the device assessed by the Program's radiation assurance experts. The following resources may also be consulted for initial guidance:

NASA Goddard Radiation Effects and Analysis Jet Propulsion Laboratory Radiation Effects

4.1 NASA Parts Levels

The NPSL lists products based on three quality levels defined by NEPAG: Level 1, Level 2, and Level 3. The definitions for each Level and the criteria used to list a part in a particular Level are not part approvals nor is this document a project approved parts list. The NPSL will not provide information on whether or not a part meets individual project flight requirements. Instead, it provides a list of products and associated manufacturers that meet recognized quality assurance baselines, qualification test regimens, and screening requirements necessary for space flight acceptance based on levels of risk. The part selected must be assessed independently by the project or the NASA center or OEM's parts organization to determine if it meets the requirements for the project. The parts engineering organizations at the NASA centers will assist users in making this determination. The Levels herein are not directly related to mission classification, cost, or schedule and users should make the appropriate Level tradeoffs when considering which parts to choose from the list.

4.1.1 Level 1:

Level 1 is the highest product assurance class assigned to parts listed in this document. Level 1 parts are those produced under assurance classes recognized by NASA as providing the highest possible level of quality and reliability (e.g. QML Class V K, JANS for discrete semiconductors, QPL Class S, Failure Rate Level (FRL) S), from NASA approved manufacturing sources, and meeting NASA space level parts and packaging program assessment criteria. The technical assessment results for Level 1 products will show that no known trends exist which have a negative impact on the quality, reliability, or performance for space flight applications. The Level 1 criteria is summarized as follows:

o The supplier's facility(s) must be certified under a recognized quality assurance system (e.g. QML, QPL, ISO 9000) and produce products to the space industry recognized highest assurance classes (e.g. QML V, JANS for discrete semiconductors, QPL Class S, FRL S, GSFC S311 specification) or equivalent. There are exceptions to these levels where this preferred part reliability level is unavailable; these exceptions are shown in the individual part listings.

o A Defense Supply Center Columbus (DSCC) audit or a NASA program manufacturer survey to the highest assurance classes must have been successfully completed within the past 2 years.

o A part procurement specification, containing the highest assurance class requirements, must exist. Parts must have been procured previously by a NASA project using this specification.

o Historical DPA and other parts analysis data on the manufacturer's products must be available and not reveal poor workmanship trends or rejection trends.

o Failure analyses history for the manufacturers products should not reveal problem trends attributed to part quality and reliability.

o No recent unresolved GIDEP Alerts (past 3 years) exist that have a major impact on the Level 1 products quality or reliability. No GIDEP Alert or NASA Parts Advisory trends exist on the manufacturer or product.

o Available data on manufacturer performance must show no trend for late delivery of products to NASA projects.

o Qualification to the requirements of the procurement specification must have been successfully completed. No qualification issues exist and no problem trends from previous qualifications exist.

4.1.2 Level 2:

Level 2 is the second highest product assurance class assigned to parts listed in this document. Level 2 parts are those produced under assurance classes recognized by NASA to have a high level of quality and reliability (e.g. QML Q H, QPL Class B, JANTXV for discrete semiconductors, FRL R or P), from NASA approved manufacturing sources, and meeting NASA space level parts and packaging program assessment criteria. The Level 2 criteria is summarized as follows:

o The supplier's facility(s) must be certified under a recognized quality assurance system (e.g. QML, QPL, ISO 9000) and produce products to space industry recognized high assurance classes (e.g. QML Q, QPL B, JANTXV for discrete semiconductors, FRL R or P, GSFC S311 specification) or equivalent. Any exceptions to these levels where the preferred part reliability level is unavailable, are shown in the individual part listings.

o A Defense Supply Center Columbus (DSCC) audit or a NASA program manufacturer survey must have been successfully completed within the past 2 years.

o A part procurement specification, containing the high assurance class requirements, must exist. Parts must have been procured previously by a NASA project using this specification.

o DPA and other parts analysis data on the manufacturer's products must be available and must not reveal any significant problems due to poor workmanship and must show minimal reject rates.

o Failure analyses history for the manufacturers products should not reveal problem trends attributed to part quality and reliability.

o No unresolved GIDEP Alert trends exist that have a major impact on the Level 2 products quality or reliability. No GIDEP Alert or NASA Parts Advisory trends exist on the manufacturer or product.

o Available data on manufacturer performance must show consistent on-time delivery of products to NASA projects.

o Qualification to the requirements of the procurement specification must have been successfully completed. Qualification issues and problems from previous qualifications must have been resolved (not by waiver).

4.1.3 Level 3:

Level 3 is the minimum product assurance class assigned to parts listed in this document. Level 3 contains many advanced electronic functions (from a space flight applications standpoint) and has been created to provide a technology insertion path into NASA flight projects. Parts listed are those produced by reputable manufacturers under a recognized quality assurance system (QML, QPL, ISO 9000) or their equivalent. Typically, only a limited amount of information is available to NEPAG for these parts and NASA has minimal visibility into the manufacturing and testing of Level 3 product. The parts are usually available commercially and have the capability to be used in space applications. The intent of Level 3 listings is to provide products that are newer, have greater functionality and enhanced performance characteristics, and provide higher levels of integration. Because the product has little or no

heritage in space flight application and data is unavailable or scarce, these parts are considered higher risk than the Level 1 and Level 2 parts. While the price of these parts may be less than the traditional Levels, more engineering evaluation may be needed to qualify the part for the project's application. The overall reliability and cost of ownership should be considered when selecting these parts. The Level 3 criteria is summarized as follows:

The manufacturer has supplied and qualified parts for several NASA space projects within the past 2 years. The parts and manufacturers have been recommended by one of the following NASA programs.

o PSAP o ASAP o ET o AIT

A NASA, DoD, or other space agency procurement specification (e.g. ESA SCC or NASDA QTS) exists. Available data on the manufacturer shows no significant problem trends such as GIDEP Alerts or NASA Parts Advisories, a low DPA rejection rate for the manufacturer's products in general, and no significant failures attributable to product quality and/or reliability.

NEPAG recommends selecting a Level 3 product when a higher Level part does not exist and/or enhanced functionality is required to meet system design requirements. Parts in this Level are not recommended for use in mission critical applications. Selecting these parts may require further engineering evaluation and approval by the project, but some heritage exists. Additionally, having more projects use these parts helps NEPAG acquire the technical data necessary for moving the parts into the higher Levels.

NASA Parts Selection List (NPSL)

NOTE: Unless specifically stated within the parts selection tables of the NPSL, listing of a device technology herein does NOT imply/guarantee Radiation Hardness Assurance (RHA). Applications concerned with a device's ability to tolerate exposure to various forms of space radiation (e.g., total ionizing dose, single event effects, etc.) should be reviewed and have the device assessed by the Program's radiation assurance experts. The following resources may also be consulted for initial guidance:

NASA Goddard Radiation Effects and Analysis

Jet Propulsion Laboratory Radiation Effects

Diode Types

The following MIL-PRF-19500 silicon diode types are available for selection:

Diode Type	Description
Small signal	Rectifier, General Purpose
Small signal	Rectifier, Signal
Small signal	Rectifier, Switching

Power	Rectifier, Standard
Power	Rectifier, General Purpose
Power	Rectifier, Fast Recovery
Power	Rectifier, Ultra Fast Recovery
Multiple Array	Common Anode/Cathode, Dual and Monolithic
Zener	Voltage Regulator, 500 mW, TA 25deg.C
Zener	Voltage Regulator, Low Noise, 500 mW, TA 25deg.C
Zener	Voltage Regulator, Noncavity, 500 mW, TA 25deg.C
Zener	Voltage Reference, Low Level, 475 mW, TA 25deg.C
Zener	Voltage Reference, 500 mW, TA 25deg.C
Zener	Voltage Regulator, 1.0 W, TA 25deg.C
Zener	Voltage Regulator, 1.5 W, TA 25deg.C
Zener	Voltage Regulator, 5.0 W, TA 25deg.C
Zener	Voltage Regulator, 10 W, TA 25deg.C
Transient Voltage Suppressor	Transient Voltage Suppressor, 1500 W, TA 25deg.C
Transient Voltage Suppressor	Transient Voltage Suppressor, Bi-directional, 500 W, TA 25deg.C
Transient Voltage Suppressor	Transient Voltage Suppressor, Bi-directional, 1500 W, TA 25deg.C
FET	Current Regulator
Schottky Barrier	Rectifier
Thyristor	Silicon Controlled Rectifier
NASDA-QTS-19500A	Diodes

NOTE:

The activity responsible for the MIL-PRF-19500 qualified parts is the Defense Supply Center Columbus (DSCC).

The activity repsponsible for the QTS-19500A qualified parts listed herein is the National Space Development Agency of Japan (NASDA).

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NEPP Program Manager:
Chuck Barnes, Jet Propulsion Laboratory
Responsible NASA Official:
Michael Sampson, NEPAG Manager
Website Comments:
Web Development Team
Last Modified:
August 8, 2001
AETD IT Security Banner
NASA Privacy Statement

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NASA Parts Selection List (NPSL)

DIODES

MIL-PRF-19500 Part Number Explanation

Example: JAN#%1N3891AR-1 where,

JAN

Joint Army and Navy (JAN) Military Part Designator

#

Quality Level

%

Indicates Radiation Hardness Assurance (RHA) Level

1N

Component designator for Diodes

3891

Identification Number

AR

Suffix Letters

-1

Indicates metallurgical bond

Quality Level, (#)

JANS or S	Highest Quality Level 1
TXV	Level 2
TX	

Radiation Hardness Assurance Level, (%)

RHA Designator	Total Ionizing Dose (RAD (Si))	Neutron Fluence (n/cm**2)
M	3 x 10**3	2 x 10**12
D	1 x 10**4	2 x 10**12
L	5 x 10**4	2 x 10**12
R	1 x 10**5	2 x 10**12
F	3 x 10**5	2 x 10**12
G	6 x 10**5	2 x 10**12
H	1 x 10**6	2 x 10**12

NOTE: Unless specifically stated within the parts selection tables of the NPSL, listing of a device technology herein does NOT imply/guarantee Radiation Hardness Assurance (RHA). Applications concerned with a device's ability to tolerate exposure to various forms of space radiation (e.g., total ionizing dose, single event effects, etc.) should be reviewed and have the device assessed by the Program's radiation assurance experts. The following resources may also be consulted for initial guidance:

NASA Goddard Radiation Effects and Analysis

Jet Propulsion Laboratory Radiation Effects

Suffix letters

A, B, C, etc	Indicates a modified version which is substitutable for the basic numbered (non-suffix) device
M	Indicates matching of specified parameters of separate devices
R	Indicates reverse polarity packaging of the basic numbered device
L or S	Indicates that the terminal leads are longer or shorter, respectively than those of the basic numbered device
U	Indicates leaded or surface mounted devices
UR	Indicates leaded or surface mounted (round end cap diodes)
US	Indicates leaded or surface mounted (square end cap diodes)

NEPP Program Manager:
Chuck Barnes, Jet Propulsion Laboratory
Responsible NASA Official:
Michael Sampson, NEPAG Manager
Website Comments:
Web Development Team
Last Modified:
August 8, 2001

AETD IT Security Banner
NASA Privacy Statement
NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
.
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon, Rectifier
General Purpose

Part Number	Detail Specification	V sub F (V dc) (max) @ I sub F	I sub F (A dc) (max)	I sub R (nA) (max) @V sub rwm	V sub rwm (V) (pk)	Level 1 #	Level 2 #	Manufacturer
JAN#%1N645-1	MIL-PRF-19500/240	1.0	0.4	50	225	S	TXV	BKC, MC
JAN#%1N647-1	MIL-PRF-19500/240	1.0	0.4	50	400	S	TXV	BKC, MC
JAN#%1N649-1	MIL-PRF-19500/240	1.0	0.4	50	600	S	TXV	BKC, MC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Diodes, Silicon
Rectifier
General Purpose
APPLICATION NOTES:
1) For the MIL-PRF-19500/240 parts listed herein, use the MIL-PRF-19500/587 part numbers for new designs.
2) Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon, Rectifier

Signal

Part Number	Detail Specification	V sub F (V dc) (max) @ I sub F	I sub F (A dc) (max)	I sub R (nA) (max) @V sub rwm	V sub rwm (V) (pk)	Level 1 #	Level 2 #	Manufacturer
JAN#%1N6661	MIL-PRF-19500/587	1.0	0.5	50	225	S	TXV	MC
JAN#%1N6662	MIL-PRF-19500/587	1.0	0.5	50	400	S	TXV	MC
JAN#%1N6663	MIL-PRF-19500/587	1.0	0.5	50	600	S	TXV	MC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon

Small Signal

Rectifier

APPLICATION NOTES:

1) For the MIL-PRF-19500/116 part listed herein, use the MIL-PRF-19500/578 part number for new designs.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

.

Application Notes:

Applicable details

Last Update:

June 2002: Click here for summary of changes

Diodes, Silicon, Rectifier

Switching

Part Number	Detail Specification	V sub F (V dc) (max) @ I sub F	I sub F (A dc) (max)	I sub R (nA) (max) @V sub rwm	V sub rwm (V) (pk
JAN#%1N4148-1 CAUTION: See Application Notes. NOT RECOMMENDED FOR NEW DESIGNSM	MIL-PRF-19500/116	0.80	0.2	500	75
JAN#%1N4150-1	MIL-PRF-19500/231	0.86	0.2	100	50
JAN#%1N4153-1	MIL-PRF-19500/337	0.81	015	50	50
JAN#%1N6638	MIL-PRF-19500/578	0.80	0.3	500	125
JAN#%1N6642	MIL-PRF-19500/578	1.0	0.3	500	75
JAN#%1N6642U	MIL-PRF-19500/578	1.0	0.3	500	75
JAN#%1N6643	MIL-PRF-19500/578	1.0	0.3	500	50
JAN#%1N6643U	MIL-PRF-19500/578	1.0	0.3	500	50

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon

Rectifier

Switching

APPLICATION NOTES:

1) The 1N4148-1 diode types are NOT recommended for new designs. These devices (especially the surface mount "UR" designation styles) may be susceptible to thermally induced cracking such as may occur during hand soldering. The 1N6642 diode types made in accordance with MIL-PRF-19500/578 are the recommended replacement for the 1N4148-1 because of a more robust construction and identical electrical performance characteristics.

For surface mount, the 1N6642US diodes are direct electrical replacements for the 1N4148UR-1, but they are physically

larger and, therefore, cannot be easily interchanged.

For through-hole applications, the axial leaded 1N6642 diodes are direct form, fit, function replacements for the axial leaded 1N4148-1 types.

Users are strongly advised to familiarize themselves with the manufacturer's recommended installation practices. Specific emphasis

must be placed on process controls that minimize thermally induced stresses. This is particularly important for assembly facilities who

intend to use hand soldering techniques to install surface mount devices of any component type.

Refer to NASA GSFC Advisory

NA-GSFC-2002-01

for further details.

NPSL Home Page	Parts Selection	Summary	Type

Recent NASA Parts Selection List Updates for Small Signal Diodes

06/11/02	Updated parts listing table to warn users to avoid use of 1N4148-1 diodes for new designs due to inherent construction weaknesses that make these parts susceptible to thermally induced cracking. Inclu
06/11/02	Updated application note to warn users to avoid use of 1N4148-1 diodes for new designs due to inherent construction weaknesses that make these parts susceptible to thermally induced cracking.
04/23/98	Corrected typo for V sub R for the 1N6642 diode. Typo inadvertently had listed V sub R = 754 V instead of the correct value of V sub R = 75 V.

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon, Rectifier

Power, Standard

Part Number	Description	Detail Specification	V sub F (V dc) (max) @I sub F	I sub F (A dc) (max)	I sub R (m A dc) (max) @V sub rwm	V sub rwm (V dc) (max)	Level 1 #	Level 2 #	Manufactur
JAN#%1N5614	Standard Rectifier	MIL-PRF-19500/427	1.3	3 (3)	0.5	200	S	TXV	MC, SC, SS
JAN#%1N5616	Standard Rectifier	MIL-PRF-19500/427	1.3	3 (3)	0.5	400	S	TXV	MC, SC, SS
JAN#%1N5618	Standard Rectifier	MIL-PRF-19500/427	1.3	3 (3)	0.5	600	S	TXV	MC, SC, SS
JAN#%1N5620	Standard Rectifier	MIL-PRF-19500/427	1.3	3 (3)	0.5	800	-	TXV	MC, SC, SS
JAN#%1N5622	Standard Rectifier	MIL-PRF-19500/427	1.3	3 (3)	0.5	1000	-	TXV	MC, SC, SS

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon, Rectifier

Power, Standard

APPLICATION NOTES:

Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
.
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon, Rectifier
Power, General Purpose

Part Number	Detail Specification	V sub F (V dc) (max) @I sub F	I sub F (A dc) (max)	I sub R (m A dc) (max) @V sub rwm	V sub rwm (V dc) (max)	Level 1 #	Level 2 #	Manufacturer
JAN#%1N1202A	MIL-PRF-19500/260	1.35	38	5.0	200	-	TXV	MC
JAN#%1N5550	MIL-PRF-19500/420	1.2	9	1.0	200	S	TXV	MC, SC, SS, VMI
JAN#%1N5551	MIL-PRF-19500/420	1.2	9	1.0	400	S	TXV	MC, SC, SS, VMI
JAN#%1N5552	MIL-PRF-19500/420	1.2	9	1.0	600	S	TXV	MC, SC, SS, VMI
JAN#%1N5553	MIL-PRF-19500/420	1.3	9	1.0	800	S	TXV	MC, SC, SS, VMI
JAN#%1N5554	MIL-PRF-19500/420	1.3	9	1.0	1000	S	TXV	MC, SC, SS, VMI

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Diodes, Silicon, Rectifier
Power, General Purpose
APPLICATION NOTES:
1) Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon, Rectifier

Power, Fast Recovery

Part Number	Detail Specification	V sub F (V dc) (max) @I sub F	I sub F (A dc) (max)	I sub R (m A dc) (max) @V sub rwm	V sub rwm (V dc) (max)	Level 1 #	Level 2 #	Manufacturer
JAN#%1N3891	MIL-PRF-19500/304	1.0	38	10	200	-	TXV	MC, SCI
JAN#%1N3891A	MIL-PRF-19500/304	1.0	38	10	200	-	TXV	MC, SCI
JAN#%1N3891R	MIL-PRF-19500/304	1.0	38	10	200	-	TXV	MC, SCI
JAN#%1N3891AR	MIL-PRF-19500/304	1.5	38	10	200	-	TXV	MC
JAN#%1N3893	MIL-PRF-19500/304	1.5	38	10	400	-	TXV	MC, SCI
JAN#%1N3893A	MIL-PRF-19500/304	1.5	38	10	400	-	TXV	MC
JAN#%1N3893R	MIL-PRF-19500/304	1.5	38	10	400	-	TXV	MC, SCI
JAN#%1N3893AR	MIL-PRF-19500/304	1.5	38	10	400	-	TXV	MC
JAN#%1N5415	MIL-PRF-19500/411	1.5	9	1.0	50	S	TXV	MC, BKC, SC, SS, VMI
JAN#%1N5416	MIL-PRF-19500/411	1.5	9	1.0	100	S	TXV	MC, BKC, SC, SS, VMI
JAN#%1N5417	MIL-PRF-19500/411	1.5	9	1.0	200	S	TXV	MC, BKC, SC, SS, VMI
JAN#%1N5418	MIL-PRF-19500/411	1.5	9	1.0	400	S	TXV	MC, BKC, SC, SS, VMI
JAN#%1N5419	MIL-PRF-19500/411	1.5	9	1.0	500	S	TXV	MC, BKC, SC, SS, VMI
JAN#%1N5420	MIL-PRF-19500/411	1.5	9	1.0	600	S	TXV	MC, BKC, SS, VMI
JAN#%1N5615	MIL-PRF-19500/429	1.6	3	0.5	200	S	TXV	MC, SC, SS, VMI
JAN#%1N5617	MIL-PRF-19500/429	0.81	3	0.5	400	S	TXV	MC, SC, SS, VMI
JAN#%1N5619	MIL-PRF-19500/429	0.80	3	0.5	600	S	TXV	MC, SC, SS, VMI
JAN#%1N5621	MIL-PRF-19500/429	1.0	3	0.5	800	S	TXV	MC, SC, SS, VMI
JAN#%1N5623	MIL-PRF-19500/429	1.6	3	0.5	1000	S	TXV	MC, SC, SS, VMI
JAN#%1N5802	MIL-PRF-19500/477	0.975	2.5	1.0	50	S	TXV	MC, SC, SS,
JAN#%1N5802US	MIL-PRF-19500/477	0.975	2.5	1.0	50	S	TXV	MC, SS
JAN#%1N5804	MIL-PRF-19500/477	0.975	2.5	1.0	100	S	TXV	MC, BKC, SC, SS
JAN#%1N5806	MIL-PRF-19500/477	0.975	2.5	1.0	150	S	TXV	MC, BKC
JAN#%1N5807	MIL-PRF-19500/477	0.925	2.5	5.0	50	S	TXV	MC, BKC, SC, SS
JAN#%1N5807US	MIL-PRF-19500/477	0.925	6.0	5.0	50	S	TXV	MC, BKC, SS
JAN#%1N5809	MIL-PRF-19500/477	0.925	6.0	5.0	100	S	TXV	MC, BKC, SC, SS
JAN#%1N5811	MIL-PRF-19500/477	0.925	6.0	5.0	150	S	TXV	MC, BKC, SC, SS

NASA Parts Selection List (NPSL)

Diodes, Silicon, Rectifier

Power, Fast Recovery

APPLICATION NOTES:

1) Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon, Rectifier

Power, Ultra Fast Recovery

Part Number	Detail Specification	V sub F (V dc) (max) @I sub F	I sub F (A dc) (max)	I sub R (m A dc) (max) @V sub rwm	V sub rwm (V dc) (max)	Level 1 #	Level 2 #	Manufacturer
JAN#%1N5814	MIL-PRF-19500/478	0.950	20.0	10.0	100	S	TXV	MC, SCI
JAN#%1N5816	MIL-PRF-19500/478	0.950	20	10.0	150	S	TXV	MC, SCI

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon, Rectifier

Power, Ultra Fast Recovery

APPLICATION NOTES:

1) Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NASA Parts Selection List (NPSL)

Diodes, Silicon

Power

APPLICATION NOTES:

Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon

Multiple Array

V sub F (

Max

) = 1.0 V dc, I sub F (peak) = 100 mA dc

Part Number	Description	Detail Specification	I sub R (Max) (mA dc) @V sub R	V sub R (V) (dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N5768	Common Cathode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF
JAN#%1N5770	Common Anode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF
JAN#%1N5772	Common Anode/Cathode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF
JAN#%1N5774	Dual Common Anode/Cathode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF
JAN#%1N6100	Individual Array	MIL-PRF-19500/474	0.025	20	-	TXV	LINF
JAN#%1N6101	Individual Array	MIL-PRF-19500/474	0.025	20	-	TXV	LINF
JAN#%1N6506	Common Cathode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF
JAN#%1N6507	Common Anode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF
JAN#%1N6508	Common Anode/Cathode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF
JAN#%1N6509	Dual Common Anode/Cathode	MIL-PRF-19500/474	0.1	40	-	TXV	LINF

JAN#%1N6510	Individual Array	MIL-PRF-19500/474	0.025	20	-	TXV	LINF
JAN#%1N6511	Individual Array	MIL-PRF-19500/474	0.025	20	-	TXV	LINF

NASA Parts Selection List (NPSL)
Diodes, Silicon
Multiple Array

APPLICATION NOTES:

1.0 The 1N5768, 1N5770, 1N5772, 1N5774, 1N6100, 1N6101, and the 1N6510 are supplied in Flat Pack packages.
2.0 The 1N6506, 1N6507, 1N6508, 1N6509, and the 1N6511 are supplied as Dual-in-Line (DIPs).

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
.
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon
ZENER
Voltage Regulator:
P sub T = 500 mW, T
sub
A
= 25
**
deg.
C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA) dc	I sub ZM sub (max) sub (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N746A-1	MIL-PRF-19500/127	3.3	20	120	-	TXV	BKC, CDI, MC
JAN#%1N747A-1	MIL-PRF-19500/127	3.6	20	110	-	TXV	BKC, CDI, MC
JAN#%1N748A-1	MIL-PRF-19500/127	3.9	20	100	-	TXV	BKC, CDI, MC
JAN#%1N749A-1	MIL-PRF-19500/127	4.3	20	90	-	TXV	BKC, CDI, MC
JAN#%1N750A-1	MIL-PRF-19500/127	4.7	20	85	-	TXV	BKC, CDI, MC
JAN#%1N751A-1	MIL-PRF-19500/127	5.1	20	75	-	TXV	BKC, CDI, MC
JAN#%1N752A-1	MIL-PRF-19500/127	5.6	20	70	-	TXV	BKC, CDI, MC
JAN#%1N753A-1	MIL-PRF-19500/127	6.2	20	65	-	TXV	BKC, CDI, MC
JAN#%1N754A-1	MIL-PRF-19500/127	6.8	20	60	-	TXV	BKC, CDI, MC
JAN#%1N755A-1	MIL-PRF-19500/127	7.5	20	55	-	TXV	BKC, CDI, MC
JAN#%1N756A-1	MIL-PRF-19500/127	8.2	20	50	-	TXV	BKC, CDI, MC
JAN#%1N757A-1	MIL-PRF-19500/127	9.1	20	45	-	TXV	BKC, CDI, MC
JAN#%1N758A-1	MIL-PRF-19500/127	10.0	20	40	-	TXV	BKC, CDI, MC
JAN#%1N759A-1	MIL-PRF-19500/127	12.0	20	35	-	TXV	BKC, CDI, MC
JAN#%1N962B-1	MIL-PRF-19500/117	11	11.5	35	-	TXV	BKC, CDI, MC
JAN#%1N963B-1	MIL-PRF-19500/117	12	10.5	32	-	TXV	BKC, CDI, MC
JAN#%1N964B-1	MIL-PRF-19500/117	13	9.5	30	-	TXV	BKC, CDI, MC
JAN#%1N965B-1	MIL-PRF-19500/117	15	8.5	26	-	TXV	BKC, CDI, MC
JAN#%1N966B-1	MIL-PRF-19500/117	16	7.8	25	-	TXV	BKC, CDI, MC
JAN#%1N967B-1	MIL-PRF-19500/117	18	7.0	21	-	TXV	BKC, CDI, MC
JAN#%1N968B-1	MIL-PRF-19500/117	20	6.2	19	-	TXV	BKC, CDI, MC
JAN#%1N969B-1	MIL-PRF-19500/117	22	5.6	17	-	TXV	BKC, CDI, MC
JAN#%1N970B-1	MIL-PRF-19500/117	24	5.2	16	-	TXV	BKC, CDI, MC
JAN#%1N971B-1	MIL-PRF-19500/117	27	4.6	14	-	TXV	BKC, CDI, MC
JAN#%1N972B-1	MIL-PRF-19500/117	30	4.2	13	-	TXV	BKC, CDI, MC
JAN#%1N973B-1	MIL-PRF-19500/117	33	3.8	12	-	TXV	BKC, CDI, MC
JAN#%1N974B-1	MIL-PRF-19500/117	36	3.4	11	-	TXV	BKC, CDI, MC
JAN#%1N975B-1	MIL-PRF-19500/117	39	3.2	9.1	-	TXV	BKC, CDI, MC
JAN#%1N976B-1	MIL-PRF-19500/117	43	3.0	8.8	-	TXV	BKC, CDI, MC
JAN#%1N977B-1	MIL-PRF-19500/117	47	2.7	7.9	-	TXV	BKC, CDI, MC
JAN#%1N978B-1	MIL-PRF-19500/117	51	2.5	7.4	-	TXV	BKC, CDI, MC
JAN#%1N979B-1	MIL-PRF-19500/117	56	2.2	6.9	-	TXV	BKC, CDI, MC
JAN#%1N980B-1	MIL-PRF-19500/117	62	2.0	6.0	-	TXV	BKC, CDI, MC
JAN#%1N981B-1	MIL-PRF-19500/117	68	1.8	5.5	-	TXV	BKC, CDI, MC
JAN#%1N982B-1	MIL-PRF-19500/117	75	1.7	5.1	-	TXV	BKC, CDI, MC
JAN#%1N983B-1	MIL-PRF-19500/117	82	1.5	4.6	-	TXV	BKC, CDI, MC
JAN#%1N984B-1	MIL-PRF-19500/117	91	1.4	4.2	-	TXV	BKC, CDI, MC
JAN#%1N985B-1	MIL-PRF-19500/117	100	1.3	3.7	-	TXV	BKC, CDI, MC
JAN#%1N986B-1	MIL-PRF-19500/117	110	1.1	3.3	-	TXV	BKC, CDI, MC
JAN#%1N987B-1	MIL-PRF-19500/117	120	1.0	3.1	-	TXV	BKC, MC
JAN#%1N988B-1	MIL-PRF-19500/117	130	0.95	2.7	-	TXV	BKC, MC
JAN#%1N989B-1	MIL-PRF-19500/117	150	0.85	2.4	-	TXV	BKC, MC
JAN#%1N990B-1	MIL-PRF-19500/117	160	0.80	2.2	-	TXV	BKC, MC
JAN#%1N991B-1	MIL-PRF-19500/117	180	0.68	2.0	-	TXV	BKC, MC

JAN#%1N992B-1	MIL-PRF-19500/117	200	0.65	1.8	-	TXV	BKC, MC
JAN#%1N4370C-1	MIL-PRF-19500/127	2.4	30	155	-	TXV	MC, CDI
JAN#%1N4371C-1	MIL-PRF-19500/127	2.7	30	140	-	TXV	MC, CDI
JAN#%1N4372C-1	MIL-PRF-19500/127	3.0	29	125	-	TXV	MC, CDI

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Diodes, Silicon
Zener
Voltage Regulator, 500 mW at
T
sub
A
= 25
**
deg.
C
APPLICATION NOTES:
1) More than one qualified supplier is available for devices listed in the table. There are no JANS qualified sources available at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
.
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon
ZENER

Voltage Regulator, Low Noise:

P sub T = 500 mW, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	I sub ZM sub (max) sub (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N4099-1	MIL-PRF-19500/435	6.8	0.25	56	-	TXV	CDI, MC, BKC
JAN#%1N4100-1	MIL-PRF-19500/435	7.5	0.25	51	-	TXV	CDI, MC, BKC
JAN#%1N4101-1	MIL-PRF-19500/435	8.2	0.25	46	-	TXV	CDI, MC, BKC
JAN#%1N4102-1	MIL-PRF-19500/435	8.7	0.25	44	-	TXV	CDI, MC, BKC
JAN#%1N4103-1	MIL-PRF-19500/435	9.1	0.25	42	-	TXV	CDI, MC, BKC
JAN#%1N4104-1	MIL-PRF-19500/435	10.0	0.25	38	-	TXV	CDI, MC, BKC
JAN#%1N4105-1	MIL-PRF-19500/435	11.0	0.25	35	-	TXV	CDI, MC, BKC
JAN#%1N4106-1	MIL-PRF-19500/435	12.0	0.25	32	-	TXV	CDI, MC, BKC
JAN#%1N4107-1	MIL-PRF-19500/435	13.0	0.25	29	-	TXV	CDI, MC, BKC
JAN#%1N4108-1	MIL-PRF-19500/435	14.0	0.25	27	-	TXV	CDI, MC, BKC
JAN#%1N4109-1	MIL-PRF-19500/435	15.0	0.25	25	-	TXV	CDI, MC, BKC
JAN#%1N4110-1	MIL-PRF-19500/435	16.0	0.25	24	-	TXV	CDI, MC, BKC
JAN#%1N4111-1	MIL-PRF-19500/435	17.0	0.25	22	-	TXV	CDI, MC, BKC
JAN#%1N4112-1	MIL-PRF-19500/435	18.0	0.25	21	-	TXV	CDI, MC, BKC
JAN#%1N4113-1	MIL-PRF-19500/435	19.0	0.25	20	-	TXV	CDI, MC, BKC
JAN#%1N4114-1	MIL-PRF-19500/435	20.0	0.25	19	-	TXV	CDI, MC, BKC
JAN#%1N4115-1	MIL-PRF-19500/435	22.0	0.25	17	-	TXV	CDI, MC, BKC
JAN#%1N4116-1	MIL-PRF-19500/435	24.0	0.25	16	-	TXV	CDI, MC, BKC
JAN#%1N4117-1	MIL-PRF-19500/435	25.0	0.25	15	-	TXV	CDI, MC, BKC
JAN#%1N4118-1	MIL-PRF-19500/435	27.0	0.25	14	-	TXV	CDI, MC, BKC
JAN#%1N4119-1	MIL-PRF-19500/435	28.0	0.25	14	-	TXV	CDI, MC, BKC
JAN#%1N4120-1	MIL-PRF-19500/435	30.0	0.25	13	-	TXV	CDI, MC, BKC
JAN#%1N4121-1	MIL-PRF-19500/435	33.0	0.25	12	-	TXV	CDI, MC, BKC
JAN#%1N4122-1	MIL-PRF-19500/435	36.0	0.25	11	-	TXV	CDI, MC
JAN#%1N4123-1	MIL-PRF-19500/435	39.0	0.25	9.8	-	TXV	CDI, MC
JAN#%1N4124-1	MIL-PRF-19500/435	43.0	0.25	8.9	-	TXV	CDI, MC
JAN#%1N4125-1	MIL-PRF-19500/435	47.0	0.25	8.1	-	TXV	CDI, MC
JAN#%1N4126-1	MIL-PRF-19500/435	51.0	0.25	7.5	-	TXV	CDI, MC
JAN#%1N4127-1	MIL-PRF-19500/435	56.0	0.25	6.7	-	TXV	CDI, MC
JAN#%1N4128-1	MIL-PRF-19500/435	60.0	0.25	6.4	-	TXV	CDI, MC
JAN#%1N4129-1	MIL-PRF-19500/435	62.0	0.25	6.1	-	TXV	CDI, MC
JAN#%1N4130-1	MIL-PRF-19500/435	68.0	0.25	5.6	-	TXV	CDI, MC
JAN#%1N4131-1	MIL-PRF-19500/435	75.0	0.25	5.1	-	TXV	CDI, MC
JAN#%1N4132-1	MIL-PRF-19500/435	82.0	0.25	4.6	-	TXV	CDI, MC
JAN#%1N4133-1	MIL-PRF-19500/435	87.0	0.25	4.4	-	TXV	CDI, MC
JAN#%1N4134-1	MIL-PRF-19500/435	91.0	0.25	4.2	-	TXV	CDI, MC
JAN#%1N4135-1	MIL-PRF-19500/435	100.0	0.25	3.8	-	TXV	CDI, MC
JAN#%1N4614-1	MIL-PRF-19500/435	1.8	0.25	120	S	TXV	CDI, MC
JAN#%1N4615-1	MIL-PRF-19500/435	2.0	0.25	110	S	TXV	CDI, MC
JAN#%1N4616-1	MIL-PRF-19500/435	2.2	0.25	100	S	TXV	CDI, MC
JAN#%1N4617-1	MIL-PRF-19500/435	2.4	0.25	95	S	TXV	CDI, MC
JAN#%1N4618-1	MIL-PRF-19500/435	2.7	0.25	90	S	TXV	CDI, MC

JAN#%1N4619-1	MIL-PRF-19500/435	3.0	0.25	87	S	TXV	CDI, MC
JAN#%1N4620-1	MIL-PRF-19500/435	3.3	0.25	85	S	TXV	CDI, MC
JAN#%1N4621-1	MIL-PRF-19500/435	3.6	0.25	83	S	TXV	CDI, MC
JAN#%1N4622-1	MIL-PRF-19500/435	3.9	0.25	80	S	TXV	CDI, MC
JAN#%1N4623-1	MIL-PRF-19500/435	4.3	0.25	77	S	TXV	CDI, MC
JAN#%1N4624-1	MIL-PRF-19500/435	4.7	0.25	75	S	TXV	CDI, MC
JAN#%1N4625-1	MIL-PRF-19500/435	5.1	0.25	70	S	TXV	CDI, MC
JAN#%1N4626-1	MIL-PRF-19500/435	5.6	0.25	65	S	TXV	CDI, MC, BKC
JAN#%1N4627-1	MIL-PRF-19500/435	6.2	0.25	61	S	TXV	CDI, MC, BKC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Diodes, Silicon
Zener
Voltage Regulator, Low Noise, 500 mW at
T sub
A
=
25 **deg.C
APPLICATION NOTES:
1) Compensated Devices, Inc., is the only qualified source for the JANS product assurance level at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
.
Application Notes:
Applicable details
Last Update:
October 1999

Diodes, Silicon

ZENER

Voltage Reference, Low Level: P sub T = 475 mW, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	I sub ZM (max) (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N4565A-1	MIL-PRF-19500/452	6.4	0.5	70	S	TXV	CDI, MC
JAN#%1N4566A-1	MIL-PRF-19500/452	6.4	0.5	70	S	TXV	CDI, MC
JAN#%1N4567A-1	MIL-PRF-19500/452	6.4	0.5	70	S	TXV	CDI, MC
JAN#%1N4568A-1	MIL-PRF-19500/452	6.4	0.5	70	S	TXV	CDI, MC
JAN#%1N4569A-1	MIL-PRF-19500/452	6.4	0.5	70	S	TXV	CDI, MC
JAN#%1N4570A-1	MIL-PRF-19500/452	6.4	1.0	70	S	TXV	CDI, MC
JAN#%1N4571A-1	MIL-PRF-19500/452	6.4	1.0	70	S	TXV	CDI, MC
JAN#%1N4572A-1	MIL-PRF-19500/452	6.4	1.0	70	S	TXV	CDI, MC
JAN#%1N4573A-1	MIL-PRF-19500/452	6.4	1.0	70	S	TXV	CDI, MC
JAN#%1N4574A-1	MIL-PRF-19500/452	6.4	1.0	70	S	TXV	CDI, MC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon

Zener

Voltage Regulator, Low Level, 475 mW at

T sub

A

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25 **deg.C

APPLICATION NOTES:

1) Microsemi Corporation and Compensated Devices, Inc., are both qualified sources for the JANS/JANTXV product assurance level.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon

ZENER

Voltage Regulator, Noncavity: P sub T = 500 mW, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	I sub ZM sub (max) sub (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N6309	MIL-PRF-19500/533	2.4	20	177	-	TXV	MC
JAN#%1N6310	MIL-PRF-19500/533	2.7	20	157	-	TXV	MC
JAN#%1N6311	MIL-PRF-19500/533	3.0	20	141	-	TXV	MC
JAN#%1N6312	MIL-PRF-19500/533	3.3	20	128	-	TXV	MC
JAN#%1N6313	MIL-PRF-19500/533	3.6	20	117	-	TXV	MC
JAN#%1N6314	MIL-PRF-19500/533	3.9	20	108	-	TXV	MC
JAN#%1N6315	MIL-PRF-19500/533	4.3	20	99	-	TXV	MC
JAN#%1N6316	MIL-PRF-19500/533	4.7	20	90	-	TXV	MC
JAN#%1N6317	MIL-PRF-19500/533	5.1	20	83	-	TXV	MC
JAN#%1N6318	MIL-PRF-19500/533	5.6	20	76	-	TXV	MC
JAN#%1N6319	MIL-PRF-19500/533	6.2	20	68	-	TXV	MC
JAN#%1N6320	MIL-PRF-19500/533	6.8	20	63	S	TXV	MC
JAN#%1N6321	MIL-PRF-19500/533	7.5	20	57	S	TXV	MC, BKC
JAN#%1N6322	MIL-PRF-19500/533	8.2	20	52	S	TXV	MC, BKC
JAN#%1N6323	MIL-PRF-19500/533	9.1	20	47	S	TXV	MC, BKC
JAN#%1N6324	MIL-PRF-19500/533	10.0	20	43	S	TXV	MC, BKC
JAN#%1N6325	MIL-PRF-19500/533	11.0	20	39	S	TXV	MC, BKC
JAN#%1N6326	MIL-PRF-19500/533	12.0	20	35	S	TXV	MC, BKC
JAN#%1N6327	MIL-PRF-19500/533	13.0	9.5	33	S	TXV	MC, BKC
JAN#%1N6328	MIL-PRF-19500/533	15.0	8.5	28	S	TXV	MC, BKC
JAN#%1N6329	MIL-PRF-19500/533	16.0	7.8	27	S	TXV	MC, BKC
JAN#%1N6330	MIL-PRF-19500/533	18.0	7.0	24	S	TXV	MC, BKC
JAN#%1N6331	MIL-PRF-19500/533	20.0	6.2	21	S	TXV	MC, BKC
JAN#%1N6332	MIL-PRF-19500/533	22.0	5.6	19	S	TXV	MC, BKC
JAN#%1N6333	MIL-PRF-19500/533	24.0	5.2	18	S	TXV	MC, BKC
JAN#%1N6334	MIL-PRF-19500/533	27.0	4.6	16	S	TXV	MC, BKC
JAN#%1N6335	MIL-PRF-19500/533	30.0	4.2	14	S	TXV	MC, BKC
JAN#%1N6336	MIL-PRF-19500/533	33.0	3.8	13	S	TXV	MC, BKC
JAN#%1N6337	MIL-PRF-19500/533	36.0	3.4	12	-	TXV	MC, BKC
JAN#%1N6338	MIL-PRF-19500/533	39.0	3.2	11	-	TXV	BKC
JAN#%1N6339	MIL-PRF-19500/533	43.0	3.0	9.9	-	TXV	BKC
JAN#%1N6340	MIL-PRF-19500/533	47.0	2.7	9.0	-	TXV	BKC
JAN#%1N6341	MIL-PRF-19500/533	51.0	2.5	8.3	-	TXV	BKC
JAN#%1N6342	MIL-PRF-19500/533	56.0	2.2	7.6	-	TXV	BKC
JAN#%1N6343	MIL-PRF-19500/533	62.0	2.0	6.8	-	TXV	BKC

JAN#%1N6344	MIL-PRF-19500/533	68.0	1.8	6.3	-	TXV	BKC
JAN#%1N6345	MIL-PRF-19500/533	75.0	1.7	5.7	-	TXV	BKC
JAN#%1N6346	MIL-PRF-19500/533	82.0	1.5	5.2	-	TXV	BKC
JAN#%1N6347	MIL-PRF-19500/533	91.0	1.4	4.7	-	TXV	BKC
JAN#%1N6348	MIL-PRF-19500/533	100.0	1.3	4.3	-	TXV	BKC
JAN#%1N6349	MIL-PRF-19500/533	110.0	1.1	3.9	-	TXV	BKC
JAN#%1N6350	MIL-PRF-19500/533	120.0	1.0	3.5	-	TXV	BKC
JAN#%1N6351	MIL-PRF-19500/533	130.0	0.95	3.3	-	TXV	BKC
JAN#%1N6352	MIL-PRF-19500/533	150.0	0.85	2.8	-	TXV	BKC
JAN#%1N6353	MIL-PRF-19500/533	160.0	0.80	2.7	-	TXV	BKC
JAN#%1N6354	MIL-PRF-19500/533	180.0	0.68	2.4	-	TXV	BKC
JAN#%1N6355	MIL-PRF-19500/533	200.0	0.65	2.1	-	TXV	BKC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Diodes, Silicon
Zener
Voltage Regulator, Noncavity, 500 mW at
T sub
A
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25 **deg.C
APPLICATION NOTES:
1) Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
Application Notes:
Applicable details
Last Update:

October 1999

Diodes, Silicon

ZENER

Voltage Regulator: P sub T = 1.0 W, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	I sub ZM sub (max) sub (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N3821A	MIL-PRF-19500/115	3.3	76	276	-	TXV	CDI, MC
JAN#%1N3822A	MIL-PRF-19500/115	3.6	69	252	-	TXV	CDI, MC
JAN#%1N3823A	MIL-PRF-19500/115	3.9	64	238	-	TXV	CDI, MC
JAN#%1N3824A	MIL-PRF-19500/115	4.3	58	213	-	TXV	CDI, MC
JAN#%1N3825A	MIL-PRF-19500/115	4.7	53	194	-	TXV	CDI, MC
JAN#%1N3826A	MIL-PRF-19500/115	5.1	49	178	-	TXV	CDI, MC
JAN#%1N3827A	MIL-PRF-19500/115	5.6	45	162	-	TXV	CDI, MC
JAN#%1N3828A	MIL-PRF-19500/115	6.2	41	146	-	TXV	CDI, MC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon

Zener

Voltage Regulator, 1.0 W at

T sub

A

=

25 **deg.C

APPLICATION NOTES:

1.0 None.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon

ZENER

Voltage Regulator: P sub T = 1.5 W, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	IZT (max) (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N4460	MIL-PRF-19500/406	6.2	40	40	-	TXV	MC
JAN#%1N4461	MIL-PRF-19500/406	6.8	37	37	-	TXV	MC
JAN#%1N4462	MIL-PRF-19500/406	7.5	34	34	-	TXV	MC
JAN#%1N4463	MIL-PRF-19500/406	8.2	31	31	-	TXV	MC
JAN#%1N4464	MIL-PRF-19500/406	9.1	28	28	S	TXV	MC, BKC
JAN#%1N4465	MIL-PRF-19500/406	10.0	25	25	S	TXV	MC, BKC
JAN#%1N4466	MIL-PRF-19500/406	11.0	23	23	S	TXV	MC, BKC
JAN#%1N4467	MIL-PRF-19500/406	12.0	21	21	S	TXV	MC, BKC
JAN#%1N4468	MIL-PRF-19500/406	13.0	19	19	S	TXV	MC, BKC
JAN#%1N4469	MIL-PRF-19500/406	15.0	17	17	S	TXV	MC, BKC
JAN#%1N4470	MIL-PRF-19500/406	16.0	15.5	15.5	S	TXV	MC, BKC
JAN#%1N4471	MIL-PRF-19500/406	18.0	14.0	14	S	TXV	MC, BKC
JAN#%1N4472	MIL-PRF-19500/406	20.0	12.5	12.5	S	TXV	MC, BKC
JAN#%1N4473	MIL-PRF-19500/406	22.0	11.5	11.5	S	TXV	MC, BKC
JAN#%1N4474	MIL-PRF-19500/406	24.0	10.5	10.5	S	TXV	MC, BKC
JAN#%1N4475	MIL-PRF-19500/406	27.0	9.5	9.5	S	TXV	MC, BKC
JAN#%1N4476	MIL-PRF-19500/406	30.0	8.5	8.5	S	TXV	MC, BKC
JAN#%1N4477	MIL-PRF-19500/406	33.0	7.5	7.5	S	TXV	MC, BKC
JAN#%1N4478	MIL-PRF-19500/406	36.0	7.0	40	S	TXV	MC, BKC
JAN#%1N4479	MIL-PRF-19500/406	39.0	6.5	37	S	TXV	MC, BKC
JAN#%1N4480	MIL-PRF-19500/406	43.0	6.0	33	S	TXV	MC, BKC
JAN#%1N4481	MIL-PRF-19500/406	47.0	5.5	30	S	TXV	MC, BKC
JAN#%1N4482	MIL-PRF-19500/406	51.0	5.0	28	S	TXV	MC, BKC
JAN#%1N4483	MIL-PRF-19500/406	56.0	4.5	26	S	TXV	MC, BKC
JAN#%1N4484	MIL-PRF-19500/406	62.0	4.0	23	S	TXV	MC, BKC
JAN#%1N4485	MIL-PRF-19500/406	68.0	3.7	21	S	TXV	MC, BKC
JAN#%1N4486	MIL-PRF-19500/406	75.0	3.3	19	S	TXV	MC, BKC
JAN#%1N4487	MIL-PRF-19500/406	82.0	3.0	17	S	TXV	MC, BKC
JAN#%1N4488	MIL-PRF-19500/406	91.0	2.8	16	S	TXV	MC, BKC
JAN#%1N4489	MIL-PRF-19500/406	100.0	2.5	14	S	TXV	MC, BKC
JAN#%1N4490	MIL-PRF-19500/406	110.0	2.3	13	S	TXV	MC, BKC
JAN#%1N4491	MIL-PRF-19500/406	120.0	2.0	12	S	TXV	MC, BKC
JAN#%1N4492	MIL-PRF-19500/406	130.0	1.9	11	S	TXV	MC, BKC
JAN#%1N4493	MIL-PRF-19500/406	150.0	1.7	9.5	S	TXV	MC, BKC
JAN#%1N4494	MIL-PRF-19500/406	160.0	1.6	8.9	S	TXV	MC, BKC
JAN#%1N4495	MIL-PRF-19500/406	180.0	1.4	7.9	S	TXV	MC, BKC
JAN#%1N4496	MIL-PRF-19500/406	200.0	1.2	7.2	S	TXV	MC, BKC

NASA Parts Selection List (NPSL)
Diodes, Silicon
Zener
Voltage Regulator, 1.5 W at
T sub
A
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25 **deg.C
APPLICATION NOTES:
1) Microsemi Corporation is the only qualified source for the JANS product assurance level at this time.

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon
ZENER
Voltage Regulator: P sub T = 5.0 W, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	I sub ZM (max) (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N4954	MIL-PRF-19500/356	6.8	175	700	S	TXV	BKC, MC
JAN#%1N4955	MIL-PRF-19500/356	7.5	175	630	S	TXV	BKC, MC
JAN#%1N4956	MIL-PRF-19500/356	8.2	150	580	S	TXV	BKC, MC
JAN#%1N4957	MIL-PRF-19500/356	9.1	150	520	S	TXV	BKC, MC
JAN#%1N4958	MIL-PRF-19500/356	10.0	125	475	S	TXV	BKC, MC

JAN#%1N4959	MIL-PRF-19500/356	11.0	125	430	S	TXV	BKC, MC
JAN#%1N4960	MIL-PRF-19500/356	12.0	100	395	S	TXV	BKC, MC
JAN#%1N4961	MIL-PRF-19500/356	13.0	100	365	S	TXV	BKC, MC
JAN#%1N4962	MIL-PRF-19500/356	15.0	75	315	S	TXV	BKC, MC
JAN#%1N4963	MIL-PRF-19500/356	16.0	75	294	S	TXV	BKC, MC
JAN#%1N4964	MIL-PRF-19500/356	18.0	65	264	S	TXV	BKC, MC
JAN#%1N4965	MIL-PRF-19500/356	20.0	65	237	S	TXV	BKC, MC
JAN#%1N4966	MIL-PRF-19500/356	22.0	50	216	S	TXV	BKC, MC
JAN#%1N4967	MIL-PRF-19500/356	24.0	50	198	S	TXV	BKC, MC
JAN#%1N4968	MIL-PRF-19500/356	27.0	50	176	S	TXV	BKC, MC
JAN#%1N4969	MIL-PRF-19500/356	30.0	40	158	S	TXV	BKC, MC
JAN#%1N4970	MIL-PRF-19500/356	33.0	40	144	S	TXV	BKC, MC
JAN#%1N4971	MIL-PRF-19500/356	36.0	30	132	S	TXV	BKC, MC
JAN#%1N4972	MIL-PRF-19500/356	39.0	30	122	S	TXV	BKC, MC
JAN#%1N4973	MIL-PRF-19500/356	43.0	30	110	S	TXV	BKC, MC
JAN#%1N4974	MIL-PRF-19500/356	47.0	25	100	S	TXV	BKC, MC
JAN#%1N4975	MIL-PRF-19500/356	51.0	25	92	S	TXV	BKC, MC
JAN#%1N4976	MIL-PRF-19500/356	56.0	20	84	S	TXV	BKC, MC
JAN#%1N4977	MIL-PRF-19500/356	62.0	20	76	S	TXV	BKC, MC
JAN#%1N4978	MIL-PRF-19500/356	68.0	20	70	S	TXV	BKC, MC
JAN#%1N4979	MIL-PRF-19500/356	75.0	20	63	S	TXV	BKC, MC
JAN#%1N4980	MIL-PRF-19500/356	82.0	15	58	S	TXV	BKC, MC
JAN#%1N4981	MIL-PRF-19500/356	91.0	15	52.5	S	TXV	BKC, MC
JAN#%1N4982	MIL-PRF-19500/356	100.0	12	47.5	S	TXV	BKC, MC
JAN#%1N4983	MIL-PRF-19500/356	110.0	12	43	S	TXV	BKC, MC
JAN#%1N4984	MIL-PRF-19500/356	120.0	10	39.5	S	TXV	BKC, MC
JAN#%1N4985	MIL-PRF-19500/356	130.0	10	36.6	S	TXV	BKC, MC
JAN#%1N4986	MIL-PRF-19500/356	150.0	8	31.6	S	TXV	BKC, MC
JAN#%1N4987	MIL-PRF-19500/356	160.0	8	29.4	S	TXV	BKC, MC
JAN#%1N4988	MIL-PRF-19500/356	180.0	5	26.4	S	TXV	MC
JAN#%1N4989	MIL-PRF-19500/356	200.0	5	23.6	S	TXV	MC
JAN#%1N4990	MIL-PRF-19500/356	220.0	5	21.6	S	TXV	MC
JAN#%1N4991	MIL-PRF-19500/356	240.0	5	19.8	S	TXV	MC
JAN#%1N4992	MIL-PRF-19500/356	270.0	5	17.5	S	TXV	MC
JAN#%1N4993	MIL-PRF-19500/356	300.0	4	15.6	-	TXV	MC
JAN#%1N4994	MIL-PRF-19500/356	330.0	4	14.4	-	TXV	MC
JAN#%1N4995	MIL-PRF-19500/356	360.0	3	13	-	TXV	MC
JAN#%1N4996	MIL-PRF-19500/356	390.0	3	12	-	TXV	MC

NPSL Home Page	Parts Selection	Summary	Type

Voltage Regulator, 5.0 W at
T sub
A
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25 **deg.C
APPLICATION NOTES:
1) Microsemi Corporation and BKC Semiconductors, Inc., are both qualified sources for the JANS product assurance level.

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon
ZENER
Voltage Regulator: P sub T = 10 W, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	I sub ZM (max) (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N2970B	MIL-PRF-19500/124	6.8	370	1500	-	TXV	MC
JAN#%1N2971B	MIL-PRF-19500/124	7.5	335	1350	-	TXV	MC
JAN#%1N2972B	MIL-PRF-19500/124	8.2	305	1180	-	TXV	MC
JAN#%1N2973B	MIL-PRF-19500/124	9.1	275	1100	-	TXV	MC
JAN#%1N2974B	MIL-PRF-19500/124	10.0	250	980	-	TXV	MC
JAN#%1N2975B	MIL-PRF-19500/124	11.0	230	890	-	TXV	MC
JAN#%1N2976B	MIL-PRF-19500/124	12.0	210	820	-	TXV	MC
JAN#%1N2977B	MIL-PRF-19500/124	13.0	190	750	-	TXV	MC
JAN#%1N2979B	MIL-PRF-19500/124	15.0	170	640	-	TXV	MC
JAN#%1N2980B	MIL-PRF-19500/124	16.0	155	605	-	TXV	MC
JAN#%1N2982B	MIL-PRF-19500/124	18.0	140	525	-	TXV	MC
JAN#%1N2984B	MIL-PRF-19500/124	20.0	125	480	-	TXV	MC
JAN#%1N2985B	MIL-PRF-19500/124	22.0	115	435	-	TXV	MC
JAN#%1N2986B	MIL-PRF-19500/124	24.0	105	400	-	TXV	MC
JAN#%1N2988B	MIL-PRF-19500/124	27.0	95	340	-	TXV	MC

JAN#%1N2989B	MIL-PRF-19500/124	30.0	85	320	-	TXV	MC
JAN#%1N2990B	MIL-PRF-19500/124	33.0	75	300	-	TXV	MC
JAN#%1N2991B	MIL-PRF-19500/124	36.0	70	260	-	TXV	MC
JAN#%1N2992B	MIL-PRF-19500/124	39.0	65	240	-	TXV	MC
JAN#%1N2993B	MIL-PRF-19500/124	43.0	60	220	-	TXV	MC
JAN#%1N2995B	MIL-PRF-19500/124	47.0	55	200	-	TXV	MC
JAN#%1N2997B	MIL-PRF-19500/124	51.0	50	185	-	TXV	MC
JAN#%1N2999B	MIL-PRF-19500/124	56.0	45	170	-	TXV	MC
JAN#%1N3000B	MIL-PRF-19500/124	62.0	40	150	-	TXV	MC
JAN#%1N3001B	MIL-PRF-19500/124	68.0	37	137	-	TXV	MC
JAN#%1N3002B	MIL-PRF-19500/124	75.0	33	125	-	TXV	MC
JAN#%1N3003B	MIL-PRF-19500/124	82.0	30	115	-	TXV	MC
JAN#%1N3004B	MIL-PRF-19500/124	91.0	28	97	-	TXV	MC
JAN#%1N3005B	MIL-PRF-19500/124	100.0	25	91	-	TXV	MC
JAN#%1N3007B	MIL-PRF-19500/124	110.0	23	82	-	TXV	MC
JAN#%1N3008B	MIL-PRF-19500/124	120.0	20	77	-	TXV	MC
JAN#%1N3009B	MIL-PRF-19500/124	130.0	19	71	-	TXV	MC
JAN#%1N3011B	MIL-PRF-19500/124	150.0	17	62	-	TXV	MC
JAN#%1N3012B	MIL-PRF-19500/124	160.0	16	58	-	TXV	MC
JAN#%1N3014B	MIL-PRF-19500/124	180.0	14	52	-	TXV	MC
JAN#%1N3015B	MIL-PRF-19500/124	200.0	12	46	-	TXV	MC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon

Zener

Voltage Regulator, 10 W at

T sub

A

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25 **deg.C

APPLICATION NOTES:

1) No JANS qualified source exist for this product

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon

ZENER

Voltage Reference: P sub T = 500 mW, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub Z (Nominal) (V dc) @ I sub ZT	I sub ZT (mA dc)	I sub ZM (max) (mA dc)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N821-1	MIL-PRF-19500/159	6.2	7.5	70	S	TXV	CDI, MC
JAN#%1N823-1	MIL-PRF-19500/159	6.2	7.5	70	S	TXV	CDI, MC
JAN#%1N825-1	MIL-PRF-19500/159	6.2	7.5	70	S	TXV	CDI, MC
JAN#%1N827-1	MIL-PRF-19500/159	6.2	7.5	70	S	TXV	CDI, MC
JAN#%1N829-1	MIL-PRF-19500/159	6.2	7.5	70	S	TXV	CDI, MC
JAN#%1N935B-1	MIL-PRF-19500/156	9.0	7.5	50	-	TXV	CDI, MC
JAN#%1N937B-1	MIL-PRF-19500/156	9.0	7.5	50	-	TXV	CDI, MC
JAN#%1N938B-1	MIL-PRF-19500/156	9.0	7.5	50	-	TXV	CDI, MC
JAN#%1N939B-1	MIL-PRF-19500/156	9.0	7.5	50	-	TXV	CDI, MC
JAN#%1N941B	MIL-PRF-19500/157	11.7	7.5	39	S	TXV	CDI, MC
JAN#%1N943B	MIL-PRF-19500/157	11.7	7.5	39	S	TXV	CDI, MC

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon

Zener

Voltage Reference, 500 mW at

T sub

A

=

25 **deg.C

APPLICATION NOTES:

1) Except for Compensated Devices, Inc., the other munufacturer listed is not qualified for the JANS product assurance level for the 1N823-1, 1N941B and 1N943B part numbers.

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details.

Application Notes:

Applicable details

Last Update:

October 1999

Diodes, Silicon

Transient Voltage Suppressor: P sub PP= 1500 W, T sub A= 25 **deg.C

Part Number	Detail Specification	V sub BR (min) (V dc) @ I sub BR	I sub BR sub (mA dc)	I sub pp (mA dc) t sub p=1ms	V sub clamp sub (max) sub at Ipp t sub p=1 ms	Level 1 (#)	Level 2 (#)
JAN#%1N5611	MIL-PRF-19500/434	43.7	1	24.0	63.5	-	TXV
JAN#%1N5629A	MIL-PRF-19500/500	6.45	10	143.0	10.5	-	TXV
JAN#%1N5630A	MIL-PRF-19500/500	7.13	10	132.0	11.3	-	TXV
JAN#%1N5631A	MIL-PRF-19500/500	7.79	10	124.0	12.1	-	TXV
JAN#%1N5632A	MIL-PRF-19500/500	8.65	1	112.0	13.4	-	TXV
JAN#%1N5633A	MIL-PRF-19500/500	9.50	1	103.0	14.5	-	TXV
JAN#%1N5634A	MIL-PRF-19500/500	10.50	1	96.0	15.6	-	TXV
JAN#%1N5635A	MIL-PRF-19500/500	11.40	1	90.0	16.7	-	TXV
JAN#%1N5636A	MIL-PRF-19500/500	12.40	1	82.0	18.2	-	TXV
JAN#%1N5637A	MIL-PRF-19500/500	14.30	1	71.0	21.2	-	TXV
JAN#%1N5638A	MIL-PRF-19500/500	15.20	1	67.0	22.5	-	TXV
JAN#%1N5639A	MIL-PRF-19500/500	17.10	1	59.5	25.2	-	TXV
JAN#%1N5640A	MIL-PRF-19500/500	19.00	1	54.0	27.7	-	TXV
JAN#%1N5641A	MIL-PRF-19500/500	20.90	1	49.0	30.6	-	TXV
JAN#%1N5642A	MIL-PRF-19500/500	22.80	1	45.0	33.2	-	TXV
JAN#%1N5643A	MIL-PRF-19500/500	25.70	1	40.0	37.5	-	TXV
JAN#%1N5644A	MIL-PRF-19500/500	28.50	1	36.0	41.4	-	TXV
JAN#%1N5645A	MIL-PRF-19500/500	31.40	1	33.0	45.7	-	TXV
JAN#%1N5646A	MIL-PRF-19500/500	34.20	1	30.0	49.9	-	TXV
JAN#%1N5647A	MIL-PRF-19500/500	37.10	1	28.0	53.9	-	TXV
JAN#%1N5648A	MIL-PRF-19500/500	40.90	1	25.3	59.3	-	TXV
JAN#%1N5649A	MIL-PRF-19500/500	44.70	1	23.2	64.8	-	TXV
JAN#%1N5650A	MIL-PRF-19500/500	48.50	1	21.4	70.1	-	TXV
JAN#%1N5651A	MIL-PRF-19500/500	53.20	1	19.5	77.0	-	TXV
JAN#%1N5652A	MIL-PRF-19500/500	58.90	1	17.7	85.0	-	TXV
JAN#%1N5653A	MIL-PRF-19500/500	64.60	1	16.3	92.0	-	TXV
JAN#%1N5654A	MIL-PRF-19500/500	71.30	1	14.6	103.0	-	TXV
JAN#%1N5655A	MIL-PRF-19500/500	77.90	1	13.3	115.0	-	TXV
JAN#%1N5656A	MIL-PRF-19500/500	86.50	1	12.0	125.0	-	TXV
JAN#%1N5657A	MIL-PRF-19500/500	95.00	1	11.0	137.0	-	TXV
JAN#%1N5658A	MIL-PRF-19500/500	105.00	1	9.9	152.0	-	TXV
JAN#%1N5659A	MIL-PRF-19500/500	114.00	1	9.1	165.0	-	TXV
JAN#%1N5660A	MIL-PRF-19500/500	124.00	1	8.4	279.0	-	TXV
JAN#%1N5661A	MIL-PRF-19500/500	143.00	1	.7.2	207.0	-	TXV
JAN#%1N5662A	MIL-PRF-19500/500	152.00	1	6.8	219.0	-	TXV
JAN#%1N5663A	MIL-PRF-19500/500	162.00	1	6.4	234.0	-	TXV
JAN#%1N5664A	MIL-PRF-19500/500	171.00	1	6.1	246.0	-	TXV
JAN#%1N5665A	MIL-PRF-19500/500	190.00	1	5.5	274.0	-	TXV
JAN#%1N5907	MIL-PRF-19500/500	6.00	1	150.0	8.5	-	TXV

NPSL Home Page	Parts Selection	Summary	Type

Diodes, Silicon
Zener
Transient Voltage Suppressor, 1500 W at
T sub
A
=
25 **deg.C
APPLICATION NOTES:
1) Transient voltage - 1500 W peak power dissipation at 1.0 ms

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details.
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon
Transient Voltage Suppressor, Bidirectional: P sub PP = 500 W, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub BR (min) (V dc)	I sub BR (mA dc)	I sub PP sub (mA dc) t sub p=1 ms	V sub clamp sub (max) sub at Ipp t sub p=1 ms	Level 1 (#)	Level 2 (#)	Manufact
JAN#%1N6103A	MIL-PRF-19500/516	7.13	175	44.6	11.2	S	TXV	SCI, SC,
JAN#%1N6104A	MIL-PRF-19500/516	7.79	150	41.3	12.1	S	TXV	SCI, SC,
JAN#%1N6105A	MIL-PRF-19500/516	8.65	150	37.3	13.4	S	TXV	SCI, SC,
JAN#%1N6106A	MIL-PRF-19500/516	9.50	125	34.5	14.5	S	TXV	SCI, SC,
JAN#%1N6107A	MIL-PRF-19500/516	10.45	125	32.0	15.6	S	TXV	SCI, SC,
JAN#%1N6108A	MIL-PRF-19500/516	11.40	100	29.6	16.9	S	TXV	SCI, SC,
JAN#%1N6109A	MIL-PRF-19500/516	12.35	100	27.5	18.2	S	TXV	SCI, SC,
JAN#%1N6110A	MIL-PRF-19500/516	14.25	75	23.8	21.0	S	TXV	SCI, SC,
JAN#%1N6111A	MIL-PRF-19500/516	15.20	75	22.4	22.3	S	TXV	SCI, SC,
JAN#%1N6112A	MIL-PRF-19500/516	17.10	65	19.9	25.1	S	TXV	SCI, SC,
JAN#%1N6113A	MIL-PRF-19500/516	19.0	65	18.0	27.7	S	TXV	SCI, SC,
JAN#%1N6114A	MIL-PRF-19500/516	20.90	50	16.4	30.5	S	TXV	SCI, SC,
JAN#%1N6115A	MIL-PRF-19500/516	22.80	50	15.0	33.3	S	TXV	SCI, SC,
JAN#%1N6116A	MIL-PRF-19500/516	25.70	50	13.4	37.4	S	TXV	SCI, SC,
JAN#%1N6117A	MIL-PRF-19500/516	28.50	40	12.0	41.6	S	TXV	SCI, SC,
JAN#%1N6118A	MIL-PRF-19500/516	31.40	40	10.9	45.7	S	TXV	SCI, SC,
JAN#%1N6119A	MIL-PRF-19500/516	34.20	30	10.0	49.9	-	TXV	SCI, SC,
JAN#%1N6120A	MIL-PRF-19500/516	37.10	30	9.3	53.6	-	TXV	SCI, SC,
JAN#%1N6121A	MIL-PRF-19500/516	40.90	30	8.5	59.1	-	TXV	SCI, SC,
JAN#%1N6122A	MIL-PRF-19500/516	44.70	25	7.7	64.4	-	TXV	SCI, SC,
JAN#%1N6123A	MIL-PRF-19500/516	48.50	25	7.1	70.1	-	TXV	SCI, SC,
JAN#%1N6124A	MIL-PRF-19500/516	53.20	20	6.5	77.0	-	TXV	SCI, SC,
JAN#%1N6125A	MIL-PRF-19500/516	58.90	20	5.9	85.3	-	TXV	SCI, SC,
JAN#%1N6126A	MIL-PRF-19500/516	64.60	20	5.1	97.1	-	TXV	SCI, SC,
JAN#%1N6127A	MIL-PRF-19500/516	71.30	20	4.8	103.1	-	TXV	SCI, SC,
JAN#%1N6128A	MIL-PRF-19500/516	77.90	15	4.4	112.8	-	TXV	SCI, SC,
JAN#%1N6129A	MIL-PRF-19500/516	86.50	15	4.0	125.1	-	TXV	SCI, SC,
JAN#%1N6130A	MIL-PRF-19500/516	95.00	12	3.6	137.6	-	TXV	SCI, SC,
JAN#%1N6131A	MIL-PRF-19500/516	104.5	12	3.3	151.3	-	TXV	SCI, SC,
JAN#%1N6132A	MIL-PRF-19500/516	114.0	10	3.0	165.1	-	TXV	SCI, SC,
JAN#%1N6133A	MIL-PRF-19500/516	123.5	10	2.8	178.8	-	TXV	SCI, SC,
JAN#%1N6134A	MIL-PRF-19500/516	142.5	8	2.4	206.3	-	TXV	SCI, SC,
JAN#%1N6135A	MIL-PRF-19500/516	152.0	8	2.3	218.4	-	TXV	SCI, SC,
JAN#%1N6136A	MIL-PRF-19500/516	171.0	5	2.0	245.7	-	TXV	SCI, SC,
JAN#%1N6137A	MIL-PRF-19500/516	190.0	5	1.8	273.0	-	TXV	SCI, SC,

NASA Parts Selection List (NPSL)

Diodes, Silicon

Transient Voltage Suppressor, Bi-directional, 500 W at

T sub

A
=
25 **deg.C
APPLICATION NOTES:
1) Microsemi Corporation is the only qualified source for the JANS product assurance level.
2) 500 W peak power dissipation at 1.0 ms

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon
Transient Voltage Suppressor, Bidirectional: P sub PP
= 1500 W, T sub A = 25 **deg.C

Part Number	Detail Specification	V sub BR (min) (V dc) @ I sub BR	I sub BR sub (mA dc)	I sub pp (mA dc) t sub p=1ms	V sub clamp sub (max) sub at Ipp t sub p=1 ms	Level 1 (#)	Level 2 (#)
JAN#%1N6139A	MIL-PRF-19500/516	7.13	175	44.6	11.2	-	TXV
JAN#%1N6140A	MIL-PRF-19500/516	7.79	150	41.3	12.1	-	TXV
JAN#%1N6141A	MIL-PRF-19500/516	8.65	150	37.3	13.4	-	TXV
JAN#%1N6142A	MIL-PRF-19500/516	9.50	125	34.5	14.5	-	TXV
JAN#%1N6143A	MIL-PRF-19500/516	10.45	125	32.0	15.6	-	TXV
JAN#%1N6144A	MIL-PRF-19500/516	11.40	100	29.6	16.9	-	TXV
JAN#%1N6145A	MIL-PRF-19500/516	12.35	100	27.5	18.2	-	TXV
JAN#%1N6146A	MIL-PRF-19500/516	14.25	75	23.8	21.0	-	TXV
JAN#%1N6147A	MIL-PRF-19500/516	15.20	75	22.4	22.3	-	TXV
JAN#%1N6148A	MIL-PRF-19500/516	17.10	65	19.9	25.1	-	TXV
JAN#%1N6149A	MIL-PRF-19500/516	19.0	65	18.0	27.7	-	TXV
JAN#%1N6150A	MIL-PRF-19500/516	20.90	50	16.4	30.5	-	TXV
JAN#%1N6151A	MIL-PRF-19500/516	22.80	50	15.0	33.3	-	TXV
JAN#%1N6152A	MIL-PRF-19500/516	25.70	50	13.4	37.4	-	TXV
JAN#%1N6153A	MIL-PRF-19500/516	28.50	40	12.0	41.6	-	TXV
JAN#%1N6154A	MIL-PRF-19500/516	31.40	40	10.9	45.7	-	TXV
JAN#%1N6155A	MIL-PRF-19500/516	34.20	30	10.0	49.9	-	TXV
JAN#%1N6156A	MIL-PRF-19500/516	37.10	30	9.3	53.6	-	TXV
JAN#%1N6157A	MIL-PRF-19500/516	40.90	30	8.5	59.1	-	TXV
JAN#%1N6158A	MIL-PRF-19500/516	44.70	25	7.7	64.6	-	TXV
JAN#%1N6159A	MIL-PRF-19500/516	48.50	25	7.1	70.1	-	TXV
JAN#%1N6160A	MIL-PRF-19500/516	53.20	20	6.5	77.0	-	TXV
JAN#%1N6161A	MIL-PRF-19500/516	58.90	20	5.9	85.3	-	TXV
JAN#%1N6162A	MIL-PRF-19500/516	64.60	20	5.1	97.1	-	TXV
JAN#%1N6163A	MIL-PRF-19500/516	71.30	20	4.8	103.1	-	TXV
JAN#%1N6164A	MIL-PRF-19500/516	77.90	15	4.4	112.8	-	TXV
JAN#%1N6165A	MIL-PRF-19500/516	86.50	15	4.0	125.1	-	TXV
JAN#%1N6166A	MIL-PRF-19500/516	95.00	12	3.6	137.6	-	TXV
JAN#%1N6167A	MIL-PRF-19500/516	104.5	12	3.3	151.3	-	TXV
JAN#%1N6168A	MIL-PRF-19500/516	114.0	10	3.0	165.1	-	TXV
JAN#%1N6169A	MIL-PRF-19500/516	123.5	10	2.8	178.8	-	TXV
JAN#%1N6170A	MIL-PRF-19500/516	142.5	8	2.4	206.3	-	TXV
JAN#%1N6171A	MIL-PRF-19500/516	152.0	8	2.3	218.4	-	TXV
JAN#%1N6172A	MIL-PRF-19500/516	171.0	5	2.0	245.7	-	TXV
JAN#%1N6173A	MIL-PRF-19500/516	190.0	5	1.8	273.0	-	TXV

NASA Parts Selection List (NPSL)

Diodes, Silicon

Transient Voltage Suppressor, Bi-directional, 1500 W at

T sub

A
=
25 **deg.C
APPLICATION NOTES:
1) 1500 W peak power dissipation at 1.0 ms.

NASA Parts Selection List (NPSL)
Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
Application Notes:
Applicable details (None Available)
Last Update:
October 1999
Diodes, Silicon
FET Current Regulator
V
sub
POV
= 100 V at T sub A= 25 deg.C, P sub T = 500 mW at T sub A=25 deg.C

Part Number	Detail Specification	I sub P (mA) (Nominal) @ Vs=25 V	Z sub S (M W) @Vs=25V	Z sub K (M W) @Vk=6V	V sub L (Vdc) @I sub L sub Ip(min)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N5283-1	MIL-PRF-19500/463	0.22	25.0	2.75	1.00	S	TXV	CDI
JAN#%1N5284-1	MIL-PRF-19500/463	0.24	19.0	2.35	1.00	S	TXV	CDI
JAN#%1N5285-1	MIL-PRF-19500/463	0.27	14.0	1.95	1.00	S	TXV	CDI
JAN#%1N5286-1	MIL-PRF-19500/463	0.30	9.0	1.60	1.00	S	TXV	CDI
JAN#%1N5287-1	MIL-PRF-19500/463	0.33	6.6	1.35	1.00	S	TXV	CDI
JAN#%1N5288-1	MIL-PRF-19500/463	0.39	4.10	1.00	1.05	S	TXV	CDI
JAN#%1N5289-1	MIL-PRF-19500/463	0.43	3.30	0.870	1.05	S	TXV	CDI
JAN#%1N5290-1	MIL-PRF-19500/463	0.47	2.70	0.750	1.05	S	TXV	CDI
JAN#%1N5291-1	MIL-PRF-19500/463	0.56	1.90	0.560	1.10	S	TXV	CDI
JAN#%1N5292-1	MIL-PRF-19500/463	0.62	1.55	0.470	1.13	S	TXV	CDI
JAN#%1N5293-1	MIL-PRF-19500/463	0.68	1.35	0.400	1.15	S	TXV	CDI
JAN#%1N5294-1	MIL-PRF-19500/463	0.75	1.15	0.335	1.20	S	TXV	CDI
JAN#%1N5295-1	MIL-PRF-19500/463	0.82	1.00	0.290	1.25	S	TXV	CDI
JAN#%1N5296-1	MIL-PRF-19500/463	0.91	0.880	0.240	1.29	S	TXV	CDI
JAN#%1N5297-1	MIL-PRF-19500/463	1.00	0.800	0.205	1.35	S	TXV	CDI
JAN#%1N5298-1	MIL-PRF-19500/463	1.10	0.700	0.180	1.40	S	TXV	CDI
JAN#%1N5299-1	MIL-PRF-19500/463	1.20	0.640	0.155	1.45	S	TXV	CDI
JAN#%1N5300-1	MIL-PRF-19500/463	1.30	0.580	0.135	1.50	S	TXV	CDI
JAN#%1N5301-1	MIL-PRF-19500/463	1.40	0.540	0.115	1.55	S	TXV	CDI
JAN#%1N5302-1	MIL-PRF-19500/463	1.50	0.510	0.105	1.60	S	TXV	CDI
JAN#%1N5303-1	MIL-PRF-19500/463	1.60	0.475	0.092	1.65	S	TXV	CDI
JAN#%1N5304-1	MIL-PRF-19500/463	1.80	0.420	0.074	1.75	S	TXV	CDI
JAN#%1N5305-1	MIL-PRF-19500/463	2.00	0.395	0.061	1.85	S	TXV	CDI
JAN#%1N5306-1	MIL-PRF-19500/463	2.20	0.370	0.052	1.95	S	TXV	CDI
JAN#%1N5307-1	MIL-PRF-19500/463	2.40	0.345	0.044	2.00	S	TXV	CDI
JAN#%1N5308-1	MIL-PRF-19500/463	2.70	0.320	0.035	2.15	S	TXV	CDI
JAN#%1N5309-1	MIL-PRF-19500/463	3.00	0.300	0.029	2.25	S	TXV	CDI
JAN#%1N5310-1	MIL-PRF-19500/463	3.30	0.280	0.024	2.35	S	TXV	CDI
JAN#%1N5311-1	MIL-PRF-19500/463	3.60	0.265	0.020	2.50	S	TXV	CDI
JAN#%1N5312-1	MIL-PRF-19500/463	3.90	0.255	0.017	2.60	S	TXV	CDI
JAN#%1N5313-1	MIL-PRF-19500/463	4.30	0.245	0.014	2.75	S	TXV	CDI
JAN#%1N5314-1	MIL-PRF-19500/463	4.70	0.235	0.012	2.90	S	TXV	CDI

NPSL Home Page	Parts Selection	Summary	Type

NASA Parts Selection List (NPSL)

Diodes, Silicon

FET Current Regulator

APPLICATION NOTES:

Not available

NASA Parts Selection List (NPSL)

Radiation Test:

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

Manufacturer:

Active Supplier Assessment Program (ASAP) Core Supplier List

Part Procurement:

Part Number/Procurement details

Application Notes:

Application Considerations: Handling/ESD Sensitivity!!!

Last Update:

July 26, 2001

Diodes, Silicon

Schottky Barrier Rectifier

Part Number	Detail Specification	V sub RM (V pk)	V sub F Tc=25 deg.C (V dc)	I sub F (pk) (mA)	Level 1 (#)	Level 2 (#)	Manufacturer
JAN#%1N5711	MIL-PRF-19500/444	50	1.0	15	-	TXV	CDI
JAN#%1N5712	MIL-PRF-19500/445	16	1.0	35	-	TXV	CDI
JAN#%1N6391	MIL-PRF-19500/553	45	0.68	50A	-	TXV	MC
JAN#%1N6392	MIL-PRF-19500/554	45	0.82	120A	-	TXV	MC, IRC

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Diodes, Silicon

Schottky Barrier

APPLICATION NOTES:

1.0 The 1N5711 and the 1N5712 are hot carrier diodes.

2.0 The 1N5711 and 1N5712 type diodes are EXTREMELY sensitive to handling and ESD damage. This susceptibility is inherent in the design of these diode types due to the very small semiconductor junction area used to meet the "low" capacitance specification requirement combined with the rigid metallurgical bond utilized in their construction. The only manufacturer of this device type,

Compensated Devices Inc.

, has published application notes related to this sensitivity. Users are strongly urged to review the supplier's application notes prior to selecting and using either of these

diode types.

CDI Technical Bulletin TB-001

:1N5711-1/1N5711UR-1/ CDLL5711 HANDLING AND ASSEMBLY GUIDELINES (COMM, JAN, JANTX, JANTXV, CDS PRODUCT)
CDI Technical Bulletin TB-002:
1N5712-1/1N5712UR-1/CDLL5712/CDLL2810 HANDLING AND ASSEMBLY GUIDELINES (COMM, JAN, JANTX, JANTXV, CDS PRODUCT)

Revision History for Schottky Barrier Diode Listing in the NPSL

07/26/01	Added Application Note Warning of Extreme Handling and ESD Sensitivity of the 1N5711 and 1N5712 Diode Types
October 1999	Initial Release of Schottky Barrier Diode Listing in the NPSL

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Radiation Test:
GSFC SEU Radiation Data Bank
JPL's Radiation Data Bank
Manufacturer:
Active Supplier Assessment Program (ASAP) Core Supplier List
Part Procurement:
Part Number/Procurement details
Application Notes:
Applicable details
Last Update:
October 1999
Diodes, Silicon
Thyristors
(Silicon Controlled Rectifier)

Part Number	Detail Specification	V sub RM (V dc pk)	I sub O T sub A=80 deg.C (A dc)	V sub GT sub (V dc) sub (max) sub @I sub GT	I sub GT sub (mA dc)	Level 1 (#)	Level 2 (#)	Manufact
JAN#%2N2323A	MIL-PRF-19500/276	50	1.0	0.8	75	-	TXV	MC
JAN#%2N2324A	MIL-PRF-19500/276	100	1.0	0.8	75	-	TXV	MC
JAN#%2N2326A	MIL-PRF-19500/276	200	0.68	0.8	75	-	TXV	MC
JAN#%2N2328A	MIL-PRF-19500/276	300	0.82	0.8	75	-	TXV	MC

NASA Parts Selection List (NPSL)
Diodes, Silicon
Thyristors (Controlles Rectifiers)

APPLICATION NOTES:

1.0 Except for non-cavity diodes, all JANTXV diodes must be 100 percent PIND tested in accordance with MIL-STD-750, Method 2052, Condition A.

NPSL Parts Selection List (NPSL)

Silicon Diode Manufacturer Listing

Click

here

for additional information regarding parts technologies offered by these manufacturers listed in the ASAP Core Suppliers List.

Listed below are links to manufacturer data sites that may provide additional part related information. The linked sites are not under the control of NPSL and NASA is not responsible for information contained in the linked site. These links are provided for your convenience only.

APD

American Power Devices

69 Bennet Street

Lynn, MA 01905-3003

Cage Code: 50273

Phone No: 617.592.6090

BKC

BKC Semiconductors, Inc (aka Microsemi Ireland Limited)

6 Lake Street

Lawrence, MA 01841-3011

Cage Code:SD633

Phone No: 508.681.0392

CDI

Compensated Devices, Inc.

166 Tremont Street

Melrose, MA 02176-2296

Cage Code: 55801

Phone No: 617.665.1071 x120

IRC

International Rectifier Corporation

Semiconductor Division

233 Kansas Street

El Segundo, CA 90245-4382

Cage Code: 59993

Phone No: 310.607.8883

KSI

Knox Semiconductor, Inc.

P.O.Box 609

Rockport, ME 04856-9999
Cage Code: 61322
Phone No: 207.236.6076
LINF
Linfinity Microelectronics, Inc.
11861 Western Avenue
Garden Grove, CA 92641-2119
Cage Code: 34333
Phone No: 714.898.8121
M/A
M/A-COM, Inc.
1011 Pawtucket Blvd.
P.O.Box 3295
Lowell, MA 01853-3295
Cage Code: 96341
Phone No: 617.564.3038
MI
Micropac Industries, Inc.
P.O.Box 469017
Garland, TX 75046-9017
Cage Code: 31757
Phone No: 214.272.3571 x274
MC
Microsemi Corporation - Scottsdale Division (1)
8700 East Thomas Rd
Scottsdale, AZ 85252-1008
Cage Code: 12954
Phone No: 602.941.6488
MC
Microsemi Corporation - Santa Ana Division (2)
2830 South Fairview Street
Santa Ana, CA 92704-1390
Cage Code: 14552
Phone No: 714.979.8220 X295
MC
Microsemi Corporation - Colorado Division (3)
800 Hoyt Street
Broomfield, CO 80020-1008
Cage Code: 59377
Phone No: 303.469.2161 X220

MC
Microsemi Corporation - Watertown Division (4)
580 Pleasant Street
Watertown, MA 02172-2497
Cage Code: 12969
Phone No: 617.926.0404
SCI (site not available)
Semicon Components, Inc.
10 North Avenue
Burlington, MA 01803-3396
Cage Code: 11961
Phone No: 617.272.9015
SC
Semtech Corporation
652 Mitchell Road
Newbury Park, CA 91320-2289
Cage Code: 14099
Phone No: 805.498.2111 x251
SS
Sensitron Semiconductor
Division of RSM Electron power, Inc.
221 West Industry Court
Deer Park, NY 11729-4681
Cage Code: 13409
Phone No: 516.586.7600 x230
STC (site not available)
Silicon Transistor Corporation
Katrina Road
Chelmsford, MA 01824-2842
Cage Code: 07256
Phone Number: 508.256.3321
VMI
Voltage Multipliers, Inc.
8711 West Roosevelt Avenue
Visalia, CA 93291-9458
Cage Code: 60211
Phone No: 209.651.1402 x15
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Active Parts Core Suppliers List (CSL)

The Active Parts Core Suppliers Listing (CSL) is a listing of manufacturers who are considered preferred suppliers of monolithic microcircuits, hybrid microcircuits, transistors or diodes by NASA. The CSL consists of two parts:

Core Suppliers List Part I

Introduction Section I - Microcircuits Section II - Hybrids Section III - Diodes Section IV - Transistors

Core Suppliers List Part II

Japanese Space Agency (NASDA) Listings European Space Agency (ESA) Listings

NOTE: A Portable Document Format (PDF) reader will be needed to view the CSL files on this page. A PDF reader, along with installation instructions, can be obtained free from Adobe Systems Incorporated.

Part I follows, and includes only those suppliers who satisfy the following criteria:

Are listed in QML-38535 (Qualified Manufacturers List of Advanced Microcircuits Qualified Under Military Specification MIL-PRF-38535?), QML-38534 (?Qualified Manufacturers List of Custom Hybrid Microcircuits Qualified under Military Specification List of Custom Hybrid Microcircuits Qualified under Military Specification MIL-H-38534?) or QPL-19500 (?Qualified Products List of Products Qualified under Military Specification MIL-S-19500) Offer one or more products which are currently listed in either MIL-STD-975 or the GSFC PPL Offer QML/QPL products to quality assurance levels which are considered suitable for spaceflight use Have established a history of providing high reliability parts to NASA.

The CSL, Part II, includes active part suppliers, who are not necessarily QML/QPL-certified, but who satisfy the following criteria:

Manufacturers parts on DESC certified and qualified lines Have compiled a satisfactory history of supplying high reliability parts which are currently procured through contractor (or OEM) SCDs Manufacture parts to NASA specifications Are certified and qualified by ESA/NASDA to provide parts to ESA/SCC or NASDA specifications)

The CSL is intended to assist NASA project management, parts/reliability engineers and designers in avoiding EEE part reliability/mission schedule problems which can result when parts are procured from unproven suppliers or suppliers who show recent trends indicative of unsatisfactory performance.

For each manufacturer listed in the CSL, Part I, herein, there is accompanying information related to the processing technologies and product lines for which the manufacturer is considered a core supplier and the name/phone number of a company representative to whom questions may be directed.

The information described in this report was obtained from NASA GSFC Preferred Parts List (PPL-21), NASA Standard Electrical, Electronic and Electromechanical parts list (MIL-STD-975), Qualified Manufacturers List for Monolithic Microcircuits (QML-38535), Qualified Manufacturers list for Custom Hybrid Microcircuits (QML- 38534), and Qualified Products List for Diodes and Transistors (QPL-19500).

For convenience, the listings have been grouped by part commodity. Introductory remarks for each section provide an explanation of the information contained therein. Please note that the manufacturer's listing and the accompanying information are considered accurate at the time of issue of this document. However, the semiconductor industry is one known for rapid change of technology and development including fabrication processes and assembly locations. As a result, the listings are subject to change without notice; revisions or amendments will be issued, as necessary.

For additional information regarding this Core Suppliers Listing, please contact:

Ashok Sharma NASA Goddard Space Flight Center Greenbelt, Maryland 20771 Attn: Ashok Sharma (Active Parts Specialist Code 562) (301) 286-6165 (301) 286-1695 (fax)

Appendix A Derating Criteria

Under Construction.

Appendix B Additional Parts Information Links

Listed below are some useful Links to other data sites that can be used in obtaining additional part related information:

NASA Parts and Packaging Program (NPPP)

Site managed by the Jet Propulsion Laboratory (JPL) -- This Site Contains Electronic Parts Reliability Information Studies of Emerging Microelectronics Technologies Radiation Effects Information JPL's Electronic Parts Information Network System (EPINS)

Electronic Parts Information Management System (EPIMS) User ID/Password Controlled -- This Site Contains GIDEP Alerts GSFC Parts Analysis Web System (PAWS) NASA Parts Advisories NASA Project Parts Lists Nonstandard Part Approval Requests Manufacturer CAGE code/address look up

GSFC SEU Radiation Data Bank

JPL's Radiation Data Bank

GSFC Procurement Specifications

Appendix C Prohibited Materials Section

The following section of the NASA Parts Selection List (NPSL) has been developed to identify materials often used in the manufacture and assembly of EEE parts that shall be prohibited from use in high reliability NASA electronic systems and flight hardware. Users are strongly urged to familiarize themselves with these issues to minimize the risk of introducing potential problems. In addition to the issues noted in this section, each commodity section within the NPSL has application notes that are unique to the commodity. Therefore, users should also review the application notes contained in each commodity section.

1. Pure Tin Plating 2. Cadmium Plating 3. Zinc Plating

Pure Tin Plating Prohibition

Policy:

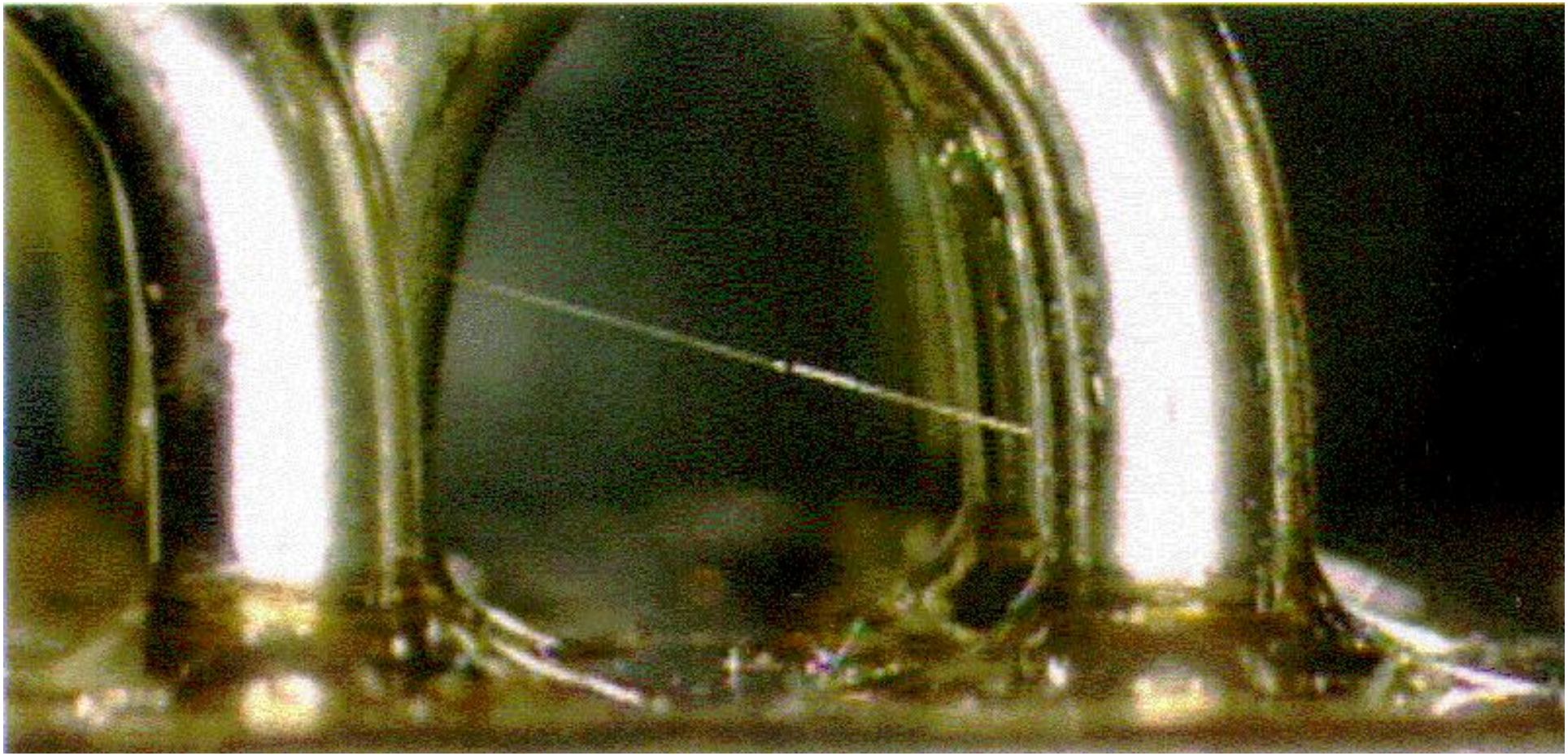
Pure tin plating is prohibited as a final finish on EEE parts and associated hardware

Reference:

NASA Advisory NA-044 October 23, 1998 NASA Advisory NA-044A December 17, 1998 NASA GSFC Tin Whisker Homepage

Rationale:

Pure tin finishes are susceptible to the spontaneous growth of electrically conductive single crystal structures known as tin whiskers. Over time these whiskers may grow to be several millimeters (mm) long. Tin whiskers are capable of causing electrical failures ranging from parametric deviations to sustained plasma arcing (in vacuum) that can result in catastrophic short circuits.



An Example of a Tin Whisker

Several instances have been reported where tin whiskers have caused system failures in both earth and space-based applications including at least 3 reports where a tin whisker induced short circuit resulted in complete failure of the commercial satellite.

The general risks fall into four categories:

Stable short circuits in low voltage, high impedance circuits.In such circuits there may be insufficient current available to fuse the whisker open and a stable short circuit results. Depending on the diameter and length of the whisker, it can take more than 50 milliamps (mA) to fuse one open. More typical is ~10mA Transient short circuits. At atmospheric pressure, if the available current exceeds the fusing current of the whisker, the circuit may only experience a transient glitch as the whisker fuses open. Plasma arcing in vacuum.In vacuum a much more destructive phenomenon can occur. If currents of above a few amps are available, the whisker will fuse open but the vaporized tin may initiate a plasma that can conduct over 200 amps. An adequate supply of tin from the plated surface is necessary to sustain the arc. This phenomenon is reported to have occurred on several commercial satellites resulting in blown fuses that rendered the spacecraft non-operational. Debris/Contamination.Whiskers or parts of whiskers may break loose and bridge isolated conductors or interfere with optical surfaces

Recommendations:

At this time, the only sure way of avoiding tin whiskers is not to use parts plated with pure tin. Despite procurement specification requirements that prohibit pure tin, errors sometimes occur resulting in pure tin plated components being delivered. Therefore, users are advised to independently test and analyze the plating composition of the products received as a verification that pure tin plating is not in use. Simple visual inspection is generally not sufficient because pure tin plating may appear similar to other plated finishes such as tin/lead or nickel.

Utilization of procurement specifications that have clear restrictions against the use of pure tin plating is still recommended. Most, but not all, of the commonly used military specifications currently have prohibitions against pure tin plating. Studies have shown that alloying tin with a second metal reduces the propensity for whisker growth. Alloys of tin and lead are acceptable where the alloy contains a minimum of 3% lead by weight.

In the event pure tin plated parts cannot be avoided, there are some additional processing techniques that may be used to reduce but not eliminate the risks associated with tin whiskers. The effectiveness of these approaches is variable and most require further evaluation to determine their suitability for long duration missions. Examples of these approaches include:

Solder dipping pure tin plated terminations and leads using a leaded solder. The effectiveness of this approach at covering all pure tin plated surfaces can be variable. Application of conformal coat material to pure tin plated surfaces. Conformal coat appears to reduce the growth rate of tin whiskers, but whiskers are still capable of growing through some conformal coat materials such as polyurethanes. For some device types manufacturers may be willing to replate surfaces using finishes such as tin/lead or nickel which are substantially less prone to whisker formation.

Cadmium Plating Prohibition

Policy:

Cadmium plating is prohibited on EEE parts and associated hardware. In some applications use of Cadmium plating may be acceptable via a Project approved waiver process that includes review and approval by both Materials and Parts Engineering disciplines.

Reference:

MSFC-HDBK-527, Materials Selection List for Space Hardware Systems JSC 11123, Space Transportation System Payload Safety Guidelines Handbook

Rationale:

There are several reasons for prohibiting the use of Cadmium plating in space flight electronic systems.

Cadmium is known to sublimate in a hard vacuum environment (especially at temperatures above 75°C). The sublimation products, which are conductive, can redeposit resulting in short circuits. The sublimation products may also interfere with sensitive optics. Cadmium is a toxic material that should not be used in manned spaceflight applications Cadmium is subject to the spontaneous growth of Cadmium whiskers. The propensity of Cadmium to grow whiskers

appears to be lower than that of zinc and especially tin. Cadmium whiskers (like tin whiskers) grow spontaneously and are capable of causing electrical failures ranging from parametric deviations to sustained plasma arcing that can result in catastrophic short circuits. See prohibition against pure tin plating for additional insight regarding the risks of metal whiskers.

Recommendations:

Cadmium plating is commonly used on connectors, connector hardware and mechanical hardware such as fasteners. It provides excellent resistance to salt corrosion and is therefore offered in many military specifications predominantly for use in naval applications. However, most NASA applications are not concerned with salt corrosion and the risks associated with use of Cadmium plating noted above outweigh the benefits of its use in spaceflight applications. There are several alternatives to Cadmium plating that are suited for spaceflight use. For connectors, electroless nickel plating is preferred. Gold plating is preferred when the application requires additional shielding effectiveness or low residual magnetism. Passivated stainless steel is the preferred material for hardware items such as fasteners. Consult your materials or parts specialists for suggested alternatives to Cadmium plating.

Zinc Plating Prohibition

Policy:

Zinc plating is prohibited on EEE parts and associated hardware. In some applications use of Zinc plating may be acceptable via a Project approved waiver process that includes review and approval by both Materials and Parts Engineering disciplines.

Reference: NA

Rationale:

There are several reasons for prohibiting the use of Zinc plating in space flight electronic systems.

Zinc is known to sublimate in a vacuum environment (especially at elevated temperatures). The sublimation products are conductive and can result in short circuits. Zinc is subject to the spontaneous growth of Zinc whiskers. Zinc whiskers (like tin whiskers) grow spontaneously and are capable of causing electrical failures ranging from parametric deviations to sustained plasma arcing that can result in catastrophic short circuits. See prohibition against pure tin plating for additional insight regarding the risks of metal whiskers

Recommendations:

Zinc (galvanized) plating is occasionally used on mechanical hardware such as fasteners for its corrosion resistant properties. By using alternative plating materials most NASA applications can avoid the risks associated with the use of Zinc plating while still achieving suitable corrosion resistance. Consult your materials or parts specialists for suggested alternatives to Zinc plating.