

REVISIONS

SYMBOL	DESCRIPTION	DATE	APPROVAL
—	Initial Release	7/31/12	JS

SHEET REVISION STATUS

SH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REV	--	--	--	--	--	--	--	--												
SH	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REV																				

ORIGINATOR: T.J. Perry/MEI Technologies <i>T J Perry</i>	DATE 7/30/12	FSC: 5930
APPROVED: T.J. Perry/MEI Technologies <i>T J Perry</i>	7/30/12	Switch, Thermostatic, (Bimetallic), Subminiature Sealed, Single Pole, Single Throw (SPST), 1 Ampere and Low Level, Detail Specification for
CODE 562 APPROVAL: B. Meinhold/GSFC <i>B Meinhold</i>	7/30/2012	
CODE 562 SUPERVISORY APPROVAL: K. Sahu/GSFC <i>K. Sahu</i>	7-30-2012	
ADDITIONAL APPROVAL:		

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 GODDARD SPACE FLIGHT CENTER
 GREENBELT, MARYLAND 20771

CAGE CODE: 25306

GSFC DETAIL SPECIFICATION

SWITCHES, THERMOSTATIC, (BIMETALLIC), SUBMINIATURE, HERMETICALLY SEALED, SINGLE POLE, SINGLE THROW (SPST), 1 AMPERE AND LOW LEVEL

The requirements for procuring the thermostatic switches described herein shall consist of this specification, the current revision of GSFC S-311-641 and QPL-24236..

PART NUMBER:

G311P641/07 A B C D

(a) (b) (c) (d) (e)

(a) GSFC Prefix

(b) Configuration (See Figure 1)

(c) Contact Action

A Open on rise, silver contacts

B Close on rise, silver contacts

C Open on rise, gold contacts (low level)

D Close on rise, gold contacts (low level)

(d) High Temperature from Coarse Table 1

(e) High Temperature from Fine Table 2

REQUIREMENTS:

Dimensions and configuration: See Figure 1

Storage temperature range: -80°F to 400°F (-62.2°C to +204.4°C)

Operating temperature range: -30°F to 400°F (-34.4°C to +204.4°C)

High temperature setting tolerance: $\pm 8^\circ\text{F}$

Low temperature setting (differential): $30^\circ\text{F} \pm 8^\circ\text{F}$ below specified high temperature setting

Contact ratings (resistive): 1.0 ampere at 115 VAC/30 VDC, 10,000 cycles

10 milliamperes at 30 mVAC/30 mVDC, 10,000 cycles (low level)

Contact resistance: 0.050 ohms maximum (0.100 ohms maximum for close on rise devices greater than +175°F, or after endurance) per MIL-STD-202, Method 307

Dielectric Withstanding Voltage: (Sea Level)

500 VAC, rms, 60 Hz for 5 seconds or 400 VAC rms 60Hz
for 1 minute, across open contacts, per MIL-STD-202,
Method 301

Dielectric Withstanding Voltage: (70,000 ft altitude)

250 VAC, rms, 60 Hz for 5 seconds, across open contacts, per MIL-STD-202, Method 301

Vibration: 10-2000 Hz, 30 G, per MIL-STD-202, Method 204

Note: Does not apply to devices that open on temperature rise while at temperatures of 75°F or more below the specified opening temperature or to devices that close on temperature rise while at temperatures 75°F or more above the closing temperature.

Shock: 100G, 6 milliseconds, per MIL-STD-202, Method 213

Hermeticity: 1×10^{-8} atm cc/sec maximum, per MIL-STD-202, Method 112, Condition C

Salt Spray Resistance: Per MIL-STD-202, Method 101, Condition B, 5% solution except switches shall be subjected to and pass the seal test after undergoing salt spray.

Note: Destructive corrosion shall be construed as any type of corrosion which in any way interferes with the mechanical or electrical performance of the switch, or corrosion which causes seal failure.

Moisture Resistance: Per MIL-STD-202, Method 106

Weight:

Configuration A – 0.4 gram approximate

Configuration B – 0.9 gram approximate

Configuration C – 1.2 grams approximate

Configuration D – 0.9 grams approximate

Configuration E – 0.9 grams approximate

Finish: 0.0001” gold plate over 0.0002-0.0004” silver plate

Qualification: Qualification listing to MIL-PRF-24236/19 is required for each configuration.

Screening: Switches shall be subjected to 100% Group A screening inspection per S-311-641, Table I, Test Nos. 1-12, with the following details and exceptions:

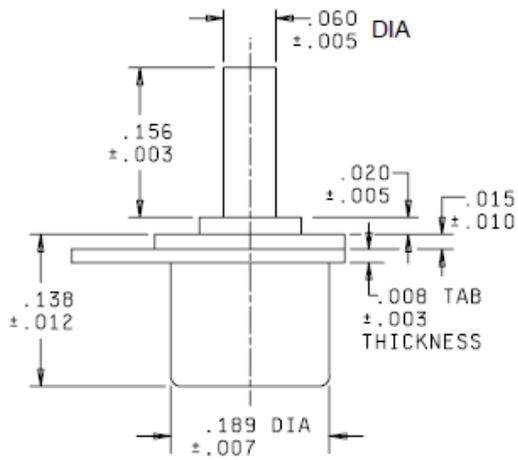
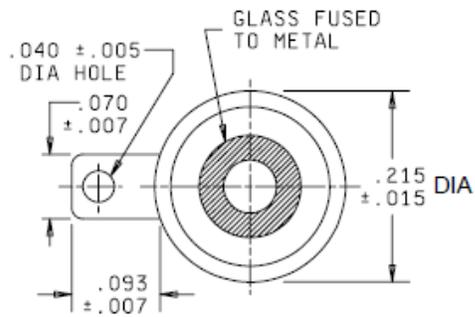
- a. PIND per manufacturer’s GSFC approved internal test procedures.
- b. Creepage testing shall be performed in accordance with MIL-PRF-24236, para. 4.6.4 for three (3) consecutive cycles.
- c. Switches shall be heated or cooled as required to cause thermal actuation. The rate of temperature change of the switch shall be the minimum practical to provide reliable creepage detection.
- d. Tested units shall meet the requirements in MIL-PRF-24236, para. 3.9, except contact transfer time shall not exceed five (5) milliseconds.

Table 1 Course High Temperature Setting to Within 20°F

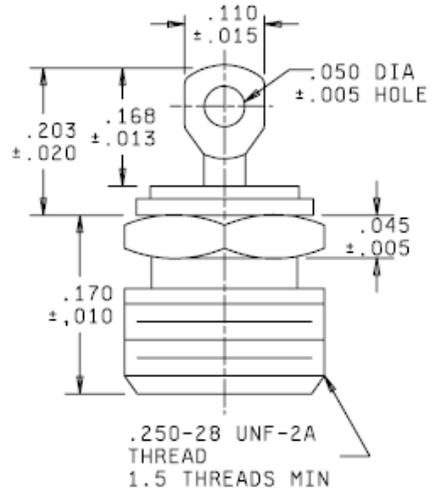
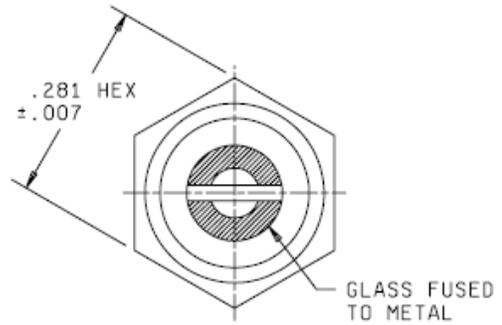
Code	Temperature (°F)	Code	Temperature (°F)	Code	Temperature (°F)
A-----	-30	H-----	110	Q-----	250
B-----	-10	J-----	130	R-----	270
C-----	10	K-----	150	S-----	290
D-----	30	L-----	170	T-----	310
E-----	50	M-----	190	U-----	330
F-----	70	N-----	210	V-----	350
G-----	90	P-----	230	W-----	385

Table 2 Fine High Temperature Setting to Within 5°F

Code	Temperature (°F)
A-----	0
B-----	+5
C-----	+10
D-----	+15

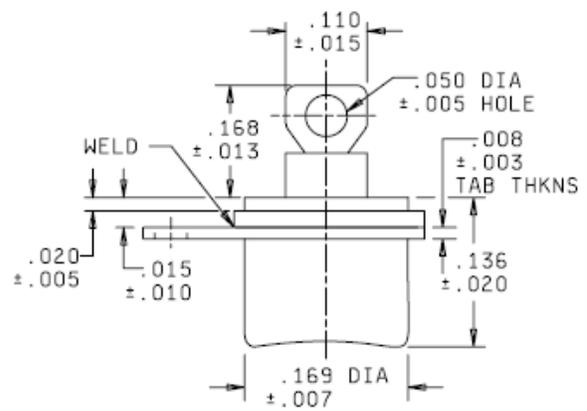
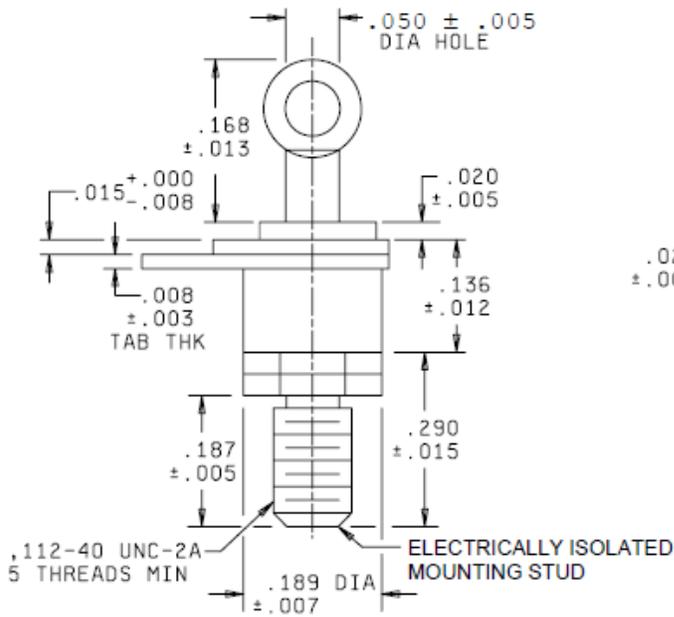
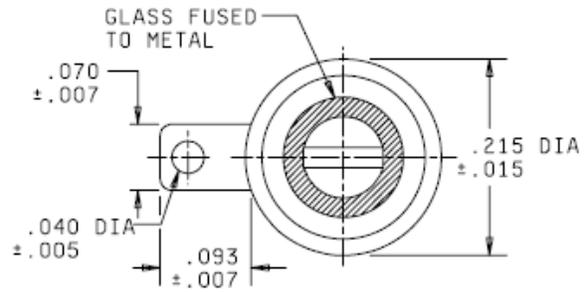
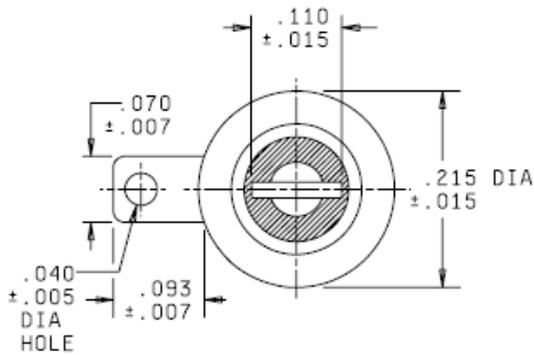


Configuration A



Configuration B

Figure 1. Dimensions.



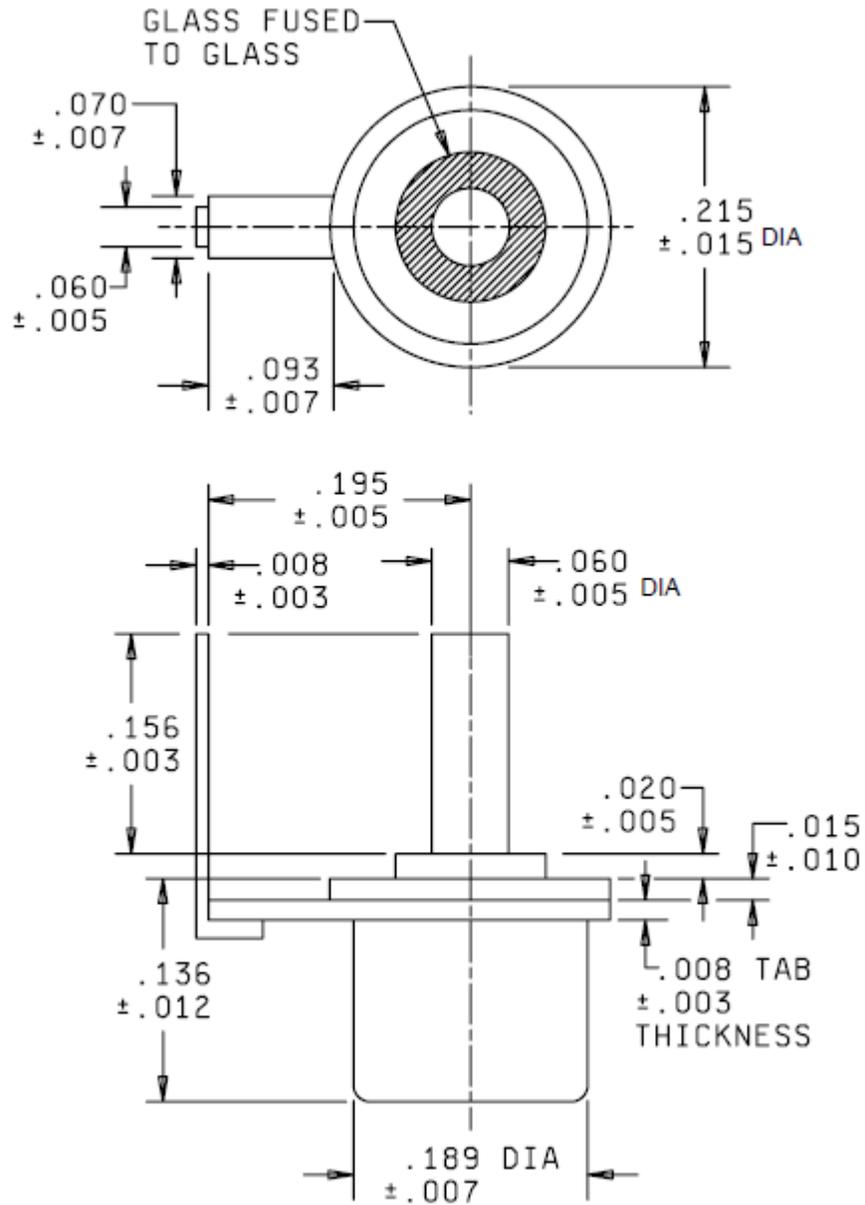
NOTE:

1. Orientation of pin, relative to tab, not controlled.

Configuration C

Configuration D

Figure 1. Dimensions (continued).



Configuration E

Figure 1. Dimensions (continued).

NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is $\pm .015$.
3. Exact shape of switch and terminals are optional provided dimensions specified are not exceeded.

Approved source(s):

Manufacturer	Cage Code	Vendor Similar Part Number
Sensata Technologies	82647	3BT

Custodian: QPLD Administrator
Parts, Packaging & Assembly Technologies Office, Code 562
Goddard Space Flight Center
Greenbelt, MD 20771