Features

- Repeatable settings
- Resolution to 0.001 %
- Digital display provides excellent readability
- Snap-in panel mount
- RoHS compliant*

3680 Family - Precision Potentiometer

Electrical Characteristics[1]

Standard Resistance Range ..... 10 ohms to 1 megohm
Total Resistance Tolerance ..... ±3 %
Dielectric Withstanding Voltage (MIL-STD-202, Method 301)
  Sea Level ..... 1,000 VAC minimum
Power Rating (Voltage Limited By Power Dissipation or 500 VAC, Whichever is Less)
  +25 °C ..... 2 watts
  +85 °C ..... 0 watt
Insulation Resistance (500 VDC) ..... 1,000 megohms minimum
Resolution
  3681 ..... 10 %
  3682 ..... 1 %
  3683 ..... 0.1 %
  3684 ..... 0.01 %
  3685 ..... 0.001 %
Absolute Minimum Resistance ..... 3 ohms or 0.2 % maximum (whichever is greater)
Accuracy (Dial Reading to Output Ratio) ..... ±1.0 % full scale

Environmental Characteristics[1]

Operating Temperature Range ..... -25 °C to +85 °C
Storage Temperature Range ..... -25 °C to +85 °C
Temperature Coefficient Over Storage Temperature Range ..... ±100 ppm/°C maximum
Vibration ..... 10 G
  Wiper Bounce ..... 0.1 millisecond maximum
  Total Resistance Shift ..... ±1 % maximum
  Voltage Ratio Shift ..... ±0.2 % maximum
Shock ..... 50 G
  Wiper Bounce ..... 0.1 millisecond maximum
  Total Resistance Shift ..... ±1 % maximum
  Voltage Ratio Shift ..... ±0.2 % maximum
Load Life ..... 1,000 hours, 2 watts
  Total Resistance Shift ..... ±2 % maximum
Rotational Life ..... 75,000 button operations each decade
  Total Resistance Shift ..... ±2 % maximum
IP Rating ..... IP 40

Mechanical Characteristics[1]

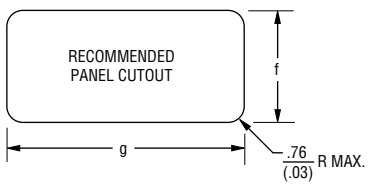
Weight ..... 3681 (9 gm); 3682 (16 gm); 3683 (23 gm); 3684 (30 gm); 3685 (37 gm)
Terminals ..... 2.79 mm (0.11 in.) wide x .41 mm (.016 in.) thick, tinned solder lugs for 3 #20 AWG wires
Soldering Condition
  Manual Soldering ..... 96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire; 370 °C (700 °F) max. for 3 seconds
  Wave Soldering ..... 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux; 260 °C (500 °F) max. for 5 seconds
  Wash processes ..... Not recommended
Marking ..... Manufacturer's name and part number, resistance value and date code.
Ganging (Multiple Section Potentiometers) ..... Up to 5 decades maximum
Readout Marking ..... 10 positions, 0-9
Actuating Force ..... 19 to 29 oz. on detent decades
Actuating Force Variation ..... 4 oz. maximum

[1] At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.
NOTE: Terminals 1 & 3 are reversed from illustration for models 3682 and 3684.

Product Dimensions

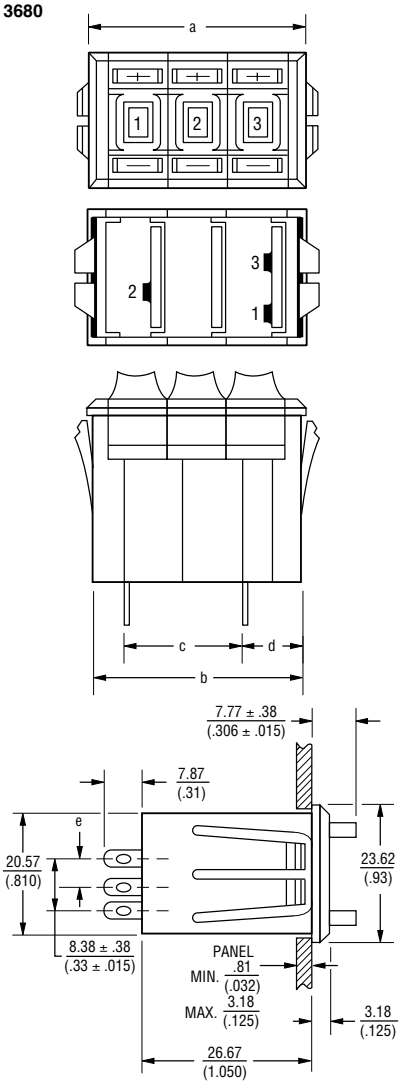
Model	Dimensions					Weight (Approx.)	
	a	b	c	d	e ±.381 (±.015)	oz.	gms.
3681	16.51 (.650)	14.99 (.590)	—	9.91 (.39)	4.19 (.165)	.336	9.5
3682	26.67 (1.05)	25.15 (.99)	10.67 (.42)	11.94 (.47)	8.38 (.330)	.576	16.5
3683	37.08 (1.46)	35.31 (1.39)	18.54 (.73)	11.94 (.47)	4.19 (.165)	.824	23.5
3684	47.50 (1.87)	45.47 (1.79)	30.73 (1.21)	11.94 (.47)	8.38 (.330)	1.072	30.5
3685	57.66 (2.270)	55.63 (2.190)	39.12 (1.540)	11.94 (.47)	4.19 (.165)	1.320	37.5

Model	Dimensions	
	f ±.010 (±.254)	g ±.010 (±.254)
3681	21.08 (.830)	15.75 (.620)
3682	21.08 (.830)	25.91 (1.020)
3683	21.08 (.830)	36.07 (1.420)
3684	21.08 (.830)	46.23 (1.820)
3685	21.08 (.830)	56.39 (2.220)

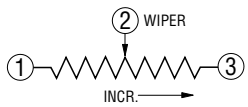


Product Dimensions

3680



TOLERANCES: EXCEPT WHERE NOTED
DECIMALS: .XX ± .38 (.015) .XXX ± .13 (.005)
FRACTIONS: ±1/64
DIMENSIONS: MM (IN.)



*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

Recommended Part Numbers

Resistance (Ω)	3681S-1 1 Decade	3682S-1 2 Decade	3683S-1 3 Decade	3684S-1 4 Decade	3685S-1 5 Decade
50	-500L				
100	-101L				
200	-201L				
500	-501L	-501L			
1,000	-102L	**-102L**	**-102L**		
2,000	-202L	-202L	-202L		
5,000	-502L	**-502L**	**-502L**		
10 K	-103L	**-103L**	**-103L**	-103L	
20 K		-203L	-203L	-203L	
50 K		-503L	-503L	-503L	
100 K	-104L	-104L	-104L	-104L	-104L
500 K			-504L	-504L	-504L
1 Meg		-105L	-105L	-105L	-105L

BOLDFACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

FOR OTHER OPTIONS CONSULT FACTORY.

ROHS IDENTIFIER:
L = COMPLIANT

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