

# SuperPlanar™ Bridge Rectifiers

## 3SPB50J - 3SPB50K

### Features

- Planar passivated chips
- Ultra low leakage reverse current
- High temperature performance
- High surge current capability
- Ideal for printed circuit boards
- High soldering temperature guaranteed: 260°C @ 10s
- RoHS compliant with Halogen-free



### Mechanical Data

- Case: 3SPB molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Leads solderable per MIL-STD-750

### Maximum Ratings (@T<sub>A</sub> = 25°C unless otherwise specified)

Parameter		Symbol	3SPB50J	3SPB50K	Unit
Peak repetitive reverse voltage		V <sub>RRM</sub>	600	800	V
RMS reverse voltage		V <sub>RMS</sub>	420	560	V
DC blocking voltage		V <sub>DC</sub>	600	800	V
Maximum average forward output current *2		I <sub>F(AV)</sub>	5.0		A
Peak forward surge current, 8.3ms single half-sine-wave	@T <sub>J</sub> = 25°C	I <sub>FSM</sub>	170		A
I <sup>2</sup> t Rating for fusing	@T <sub>J</sub> = 25°C	I <sup>2</sup> t	120		A <sup>2</sup> s

### Thermal Characteristics

Parameter	Symbol	3SPB50J	3SPB50K	Unit
Typical thermal resistance per leg *1	R <sub>θJA</sub>	38		°C/W
	R <sub>θJC</sub>	10.4		
	R <sub>θJL</sub>	7.5		
Operating junction temperature range	T <sub>J</sub>	-55 ~ +150		°C
Storage temperature range	T <sub>STG</sub>	-55 ~ +150		°C

Note \*1: Device mounted on PCB with 10 mm x 20 mm x 0.1mm copper pad areas

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### Electrical Characteristics (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Typ.	Max.	Unit	
Instantaneous Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 2.5A per Diode	-	0.95	V	
		I <sub>F</sub> = 5.0A per Diode	-	1.00		
Reverse Current	I <sub>R</sub>	rated V <sub>R</sub> , per Diode	@ T <sub>A</sub> = 25°C	0.5	1.0	μA
			@ T <sub>A</sub> = 150°C	40.0	100.0	

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### Ratings and Characteristic Curves (@ $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

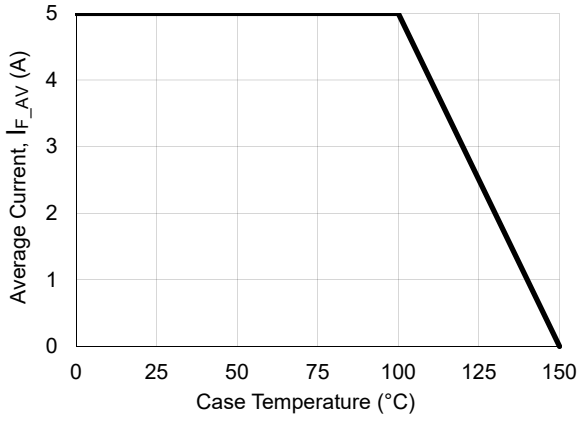


Fig.2 Surge Current Derating Curve

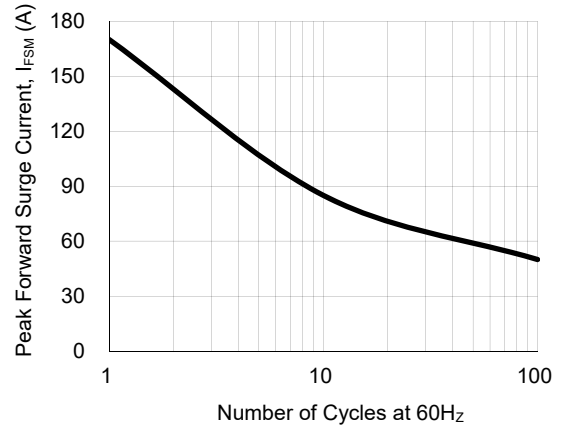


Fig.3 Typical Forward Voltage Characteristics

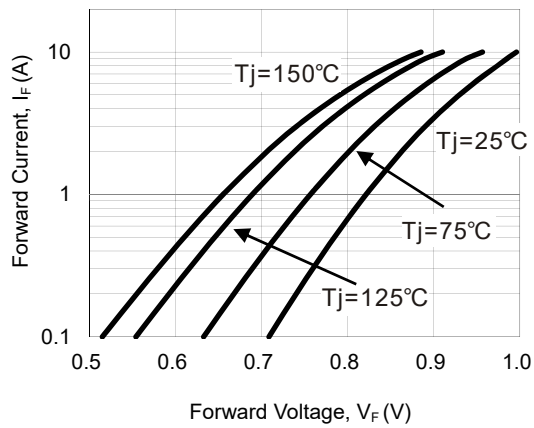
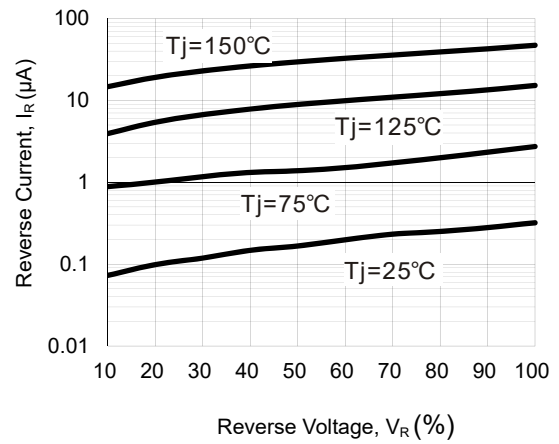


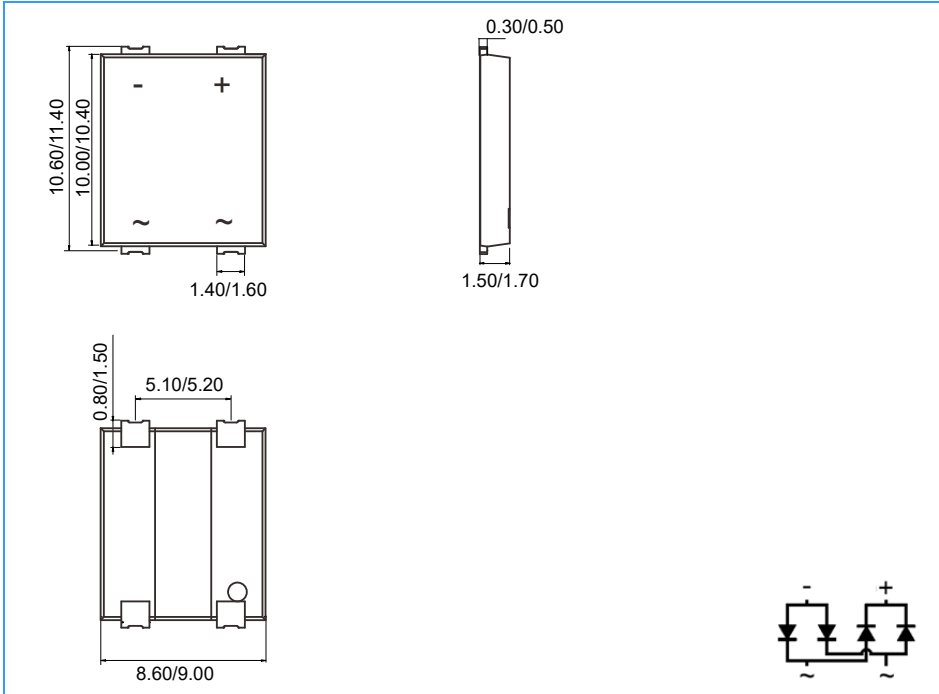
Fig.4 Typical Reverse Characteristics



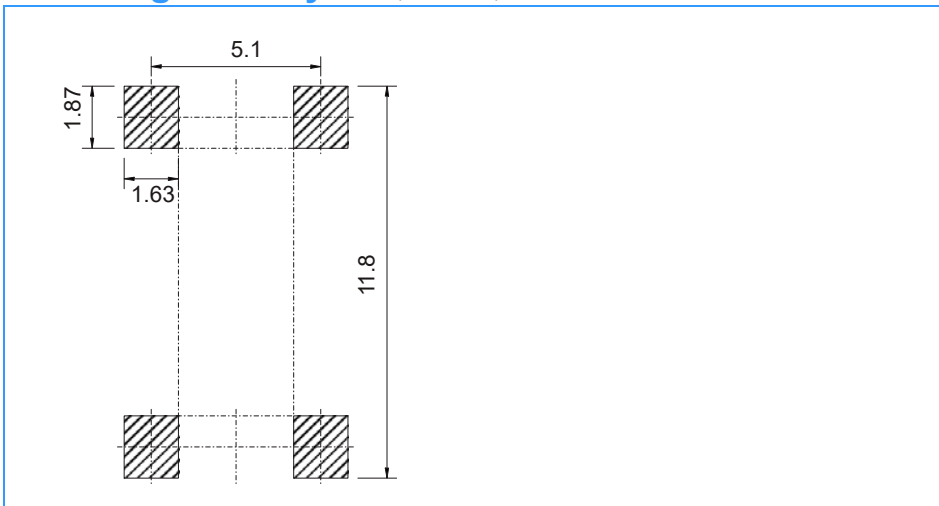
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### Package Outline Dimensions (unit: mm)



### Mounting Pad Layout (unit: mm)



### Ordering Information

Part Number	Marking	Package	Shipping Quantity
3SPB50J	3SPB50J	3SPB	1500 / Tape & Reel
3SPB50K	3SPB50K	3SPB	1500 / Tape & Reel