

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIERS

REVERSE VOLTAGE - 45Volts
FORWARD CURRENT - 15.0 Amperes

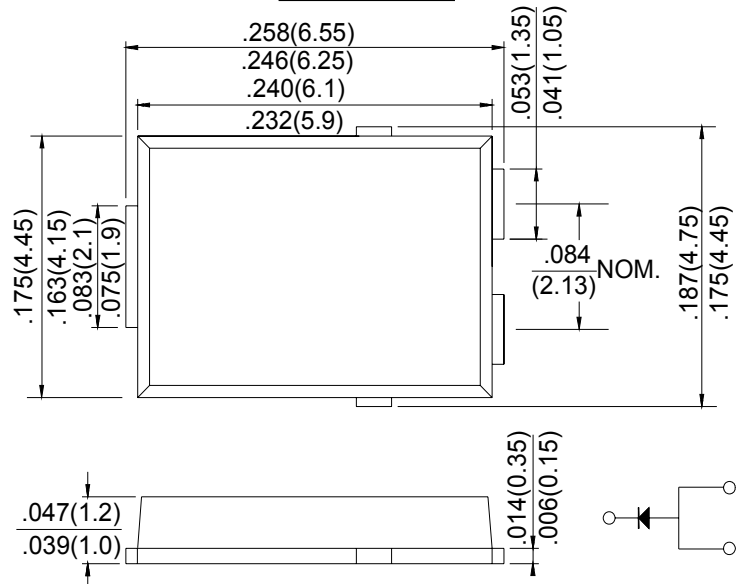
FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Trench Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

MECHANICAL DATA

- Case: TO-277A (SMPC)
- Molding compound meets UL 94 V-0 flammability rating
- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

TO-277A



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

CHARACTERISTICS		SYMBOL	S15P45	UNIT	
Maximum Recurrent Peak Reverse Voltage		V _{RRM}	45	V	
Maximum DC Forward Current		I _F ⁽¹⁾	15	A	
		I _F ⁽²⁾	4.8		
Peak Forward Surge Current 10ms Single Half Sine-Wave Superimposed on Rated Load		I _{FSM}	210	A	
Instantaneous Forward voltage	I _F =5.0A I _F =7.5A I _F =15A	T _A =25°C	0.40(TYP.)		V
			0.45(TYP.)		
			0.49(TYP.)	0.58(MAX.)	
	I _F =5.0A I _F =7.5A I _F =15A	T _A =125°C	0.31(TYP.)		
			0.34(TYP.)		
			0.42 (TYP.)	0.51 (MAX.)	
Reverse Current	V _R =45V	T _A =25°C	1500 (MAX.)		µA
		T _A =125°C	15 (TYP.)	50 (MAX.)	mA
Typical Thermal Resistance	R _{θJA} ⁽⁵⁾		75		°C/W
	R _{θJM} ⁽⁶⁾		4		
Operating Temperature Range		T _J	-40 to +150		°C
Storage Temperature Range		T _{STG}	-40 to +150		°C

Notes:(1) Mounted on 30 mm x 30 mm pad areas aluminum PCB

(2) Free air, mounted on recommended copper pad area

(3) Pulse test: 300 µs pulse width, 1 % duty cycle

(4) Pulse test: Pulse width ≤ 40 ms

(5) Free air, mounted on recommended copper pad area; thermal resistance R_{θJA} - junction to ambient

(6) Mounted on 30 mm x 30 mm aluminum PCB; thermal resistance R_{θJM} - junction to mount

FIG.1-TYPICAL TRANSIENT THERMAL IMPEDANCE PER DIODE

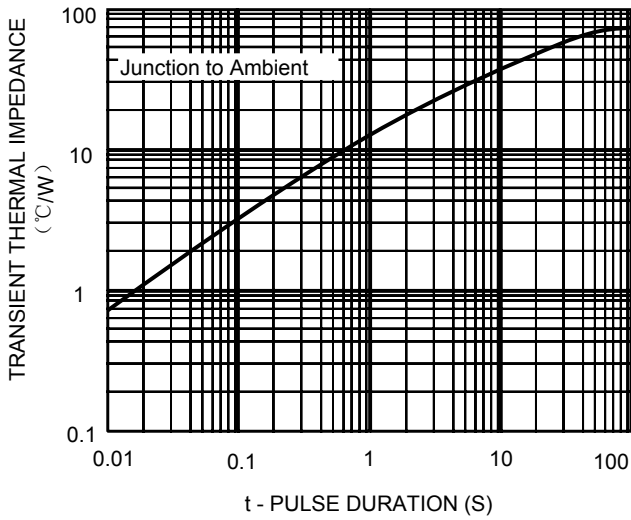


FIG.3-FORWARD POWER LOSS CHARACTERISTICS PER DIODE

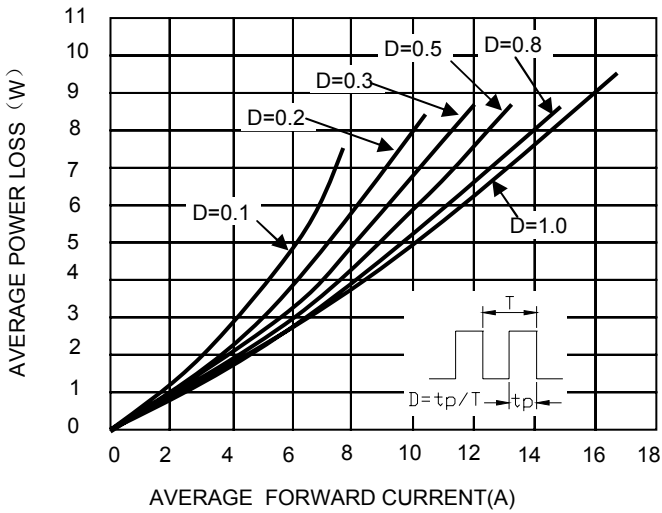


FIG.5-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER DIODE

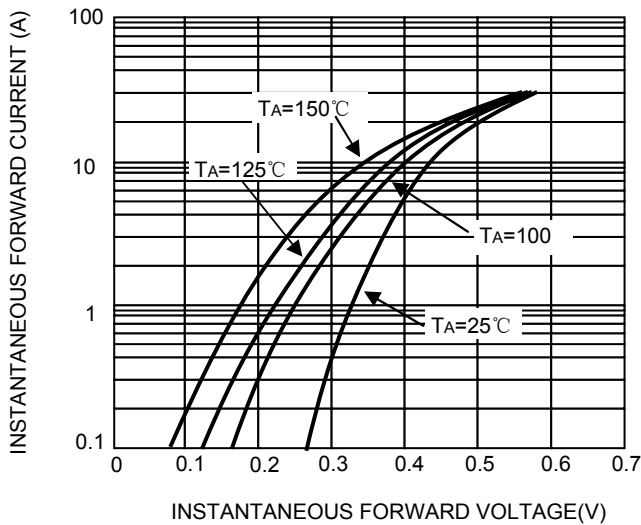


FIG.2-TYPICAL REVERSE LEAKAGE CHARACTERISTICS PER DIODE

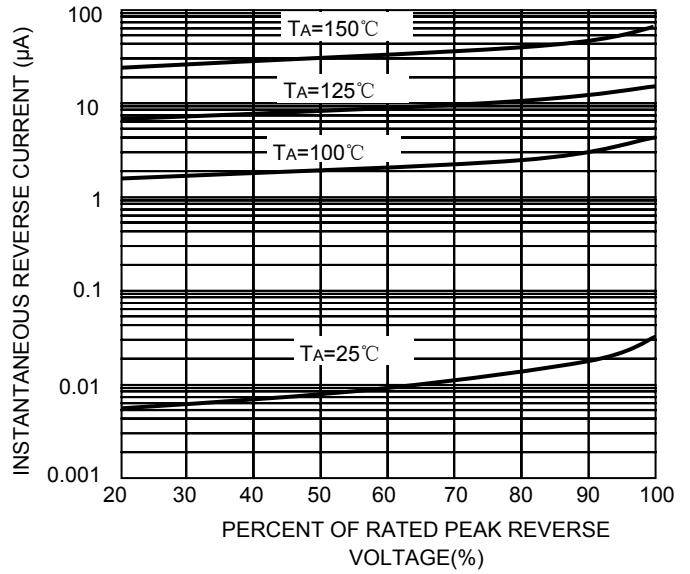


FIG.4-TYPICAL JUNCTION CAPACITANCE

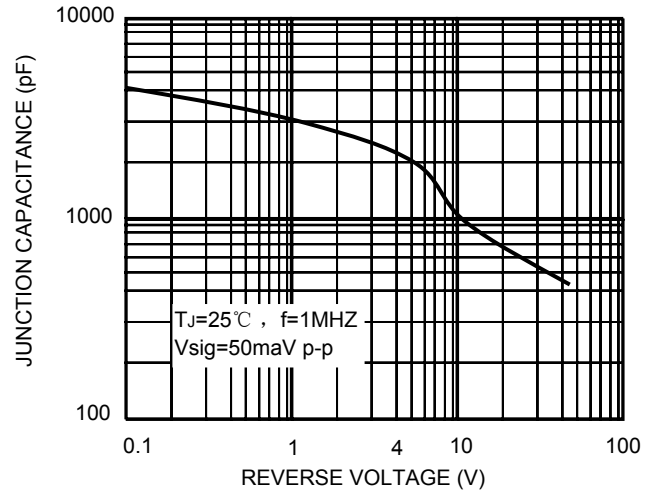
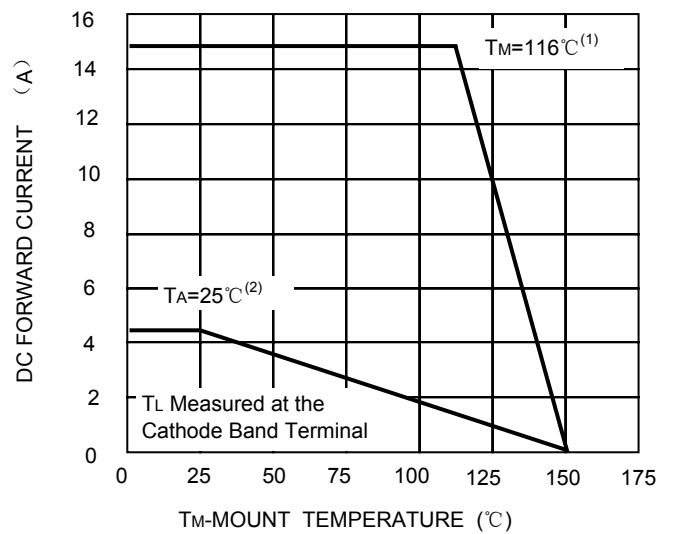


FIG.6-FORWARD CURRENT DERATING CURVE



NOTE: (1) Mounted on 30 mm x 30 mm aluminum PCB; TM measured at the terminal of cathode band ($R_{\theta JM} = 4 \text{ } ^\circ\text{C/W}$)
(2) Free air, mounted on recommended copper pad area ($R_{\theta JA} = 75 \text{ } ^\circ\text{C/W}$)