MSS1P3L-M3-FS

1.0A Surface Mount Schottky Barrier Rectifiers

Features

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

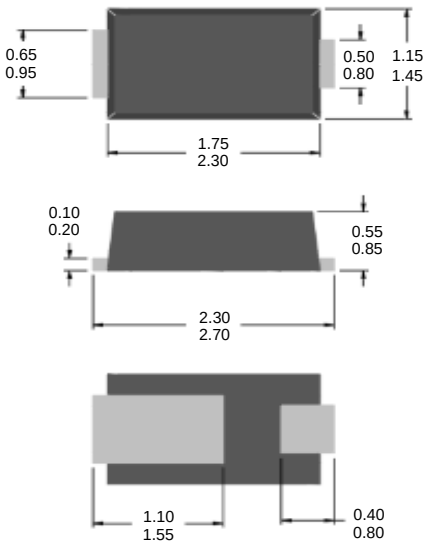
For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

Mechanical Date

- **Package:** SOD-323HE
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

Package outline

SOD-323HE



Dimensions in inches and (millimeters)

Maximum Ratings (T_a=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MSS1P3L-M3-FS
Repetitive peak reverse voltage	V_{RRM}	V	30
Average rectified output current @60Hz sine wave, Resistance load, Ta (FIG.1)	I_O	A	1.0
Surge(non-repetitive)forward current @60Hz half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	25
Storage temperature	T_{stg}	℃	-55 ~+150
Junction temperature	T_j	℃	-55 ~+150

Electrical Characteristics (T_a=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MSS1P3L-M3-FS
Maximum instantaneous forward voltage drop per diode	V_F	V	I_{FM}=1.0A	0.55
Maximum DC reverse current at rated DC blocking voltage per diode @ VRM=VRRM	I_{RRM}	mA	T_a=25℃	0.50
			T_a=100℃	10

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Thermal Characteristics (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MSS1P3L-M3-FS
Thermal Resistance	RθJ-A	℃/W	199[1)]
	RθJ-L		21[1)]

Note: 1. Per JESD51-3 Recommended Thermal Test Board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm

Characteristics (Typical)

FIG1:Io-TLCurve

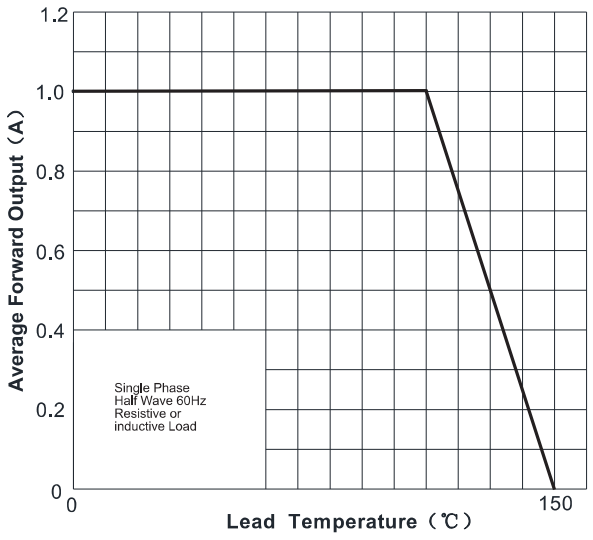


FIG2: Surge Forward Current Capability

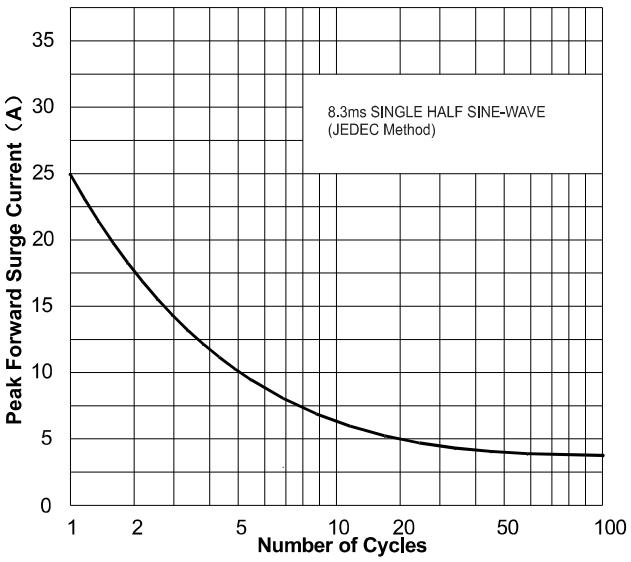


FIG3: Forward Voltage

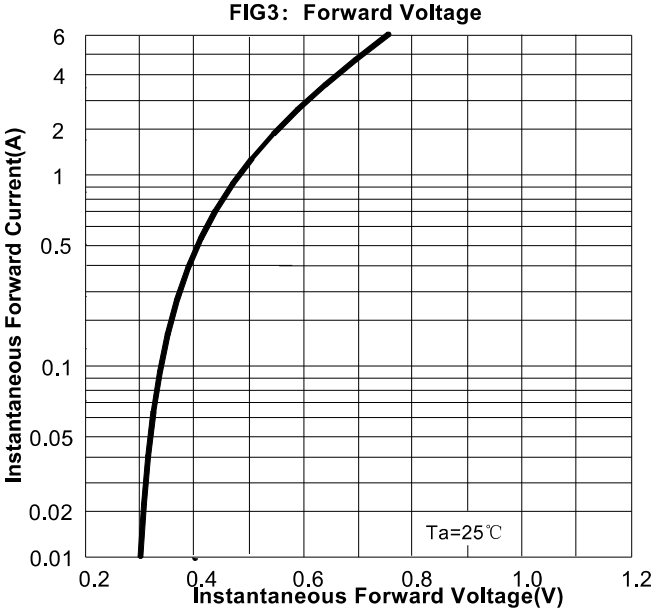
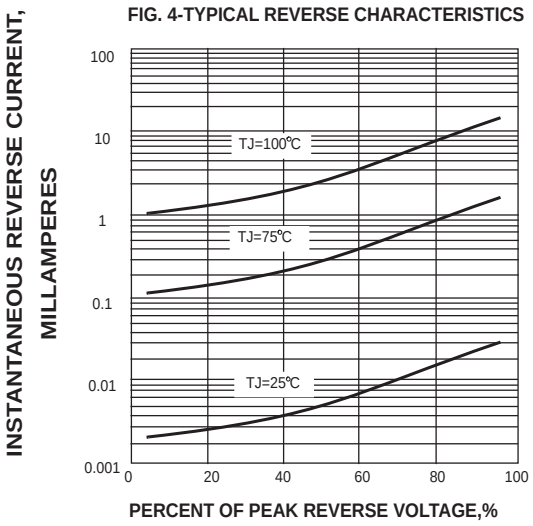


FIG. 4-TYPICAL REVERSE CHARACTERISTICS



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Pinning information

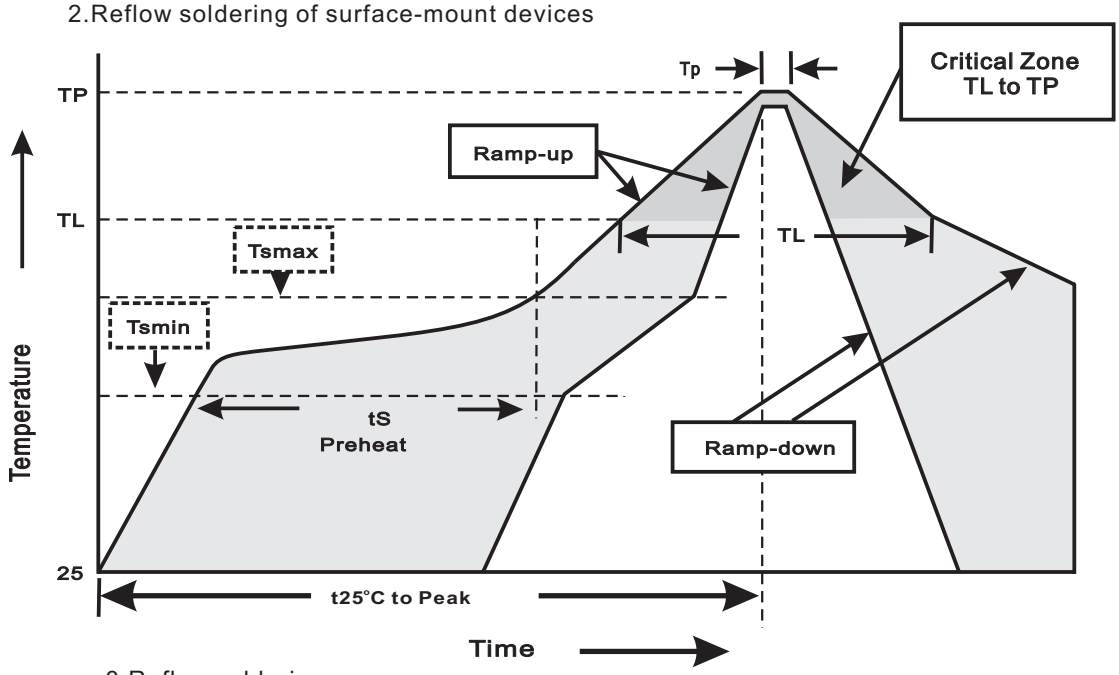
Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
MSS1P3L-M3-FS	1B

Suggested thermal profiles for soldering processes

1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax to T_L -Ramp-upRate	 <3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	 217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes