

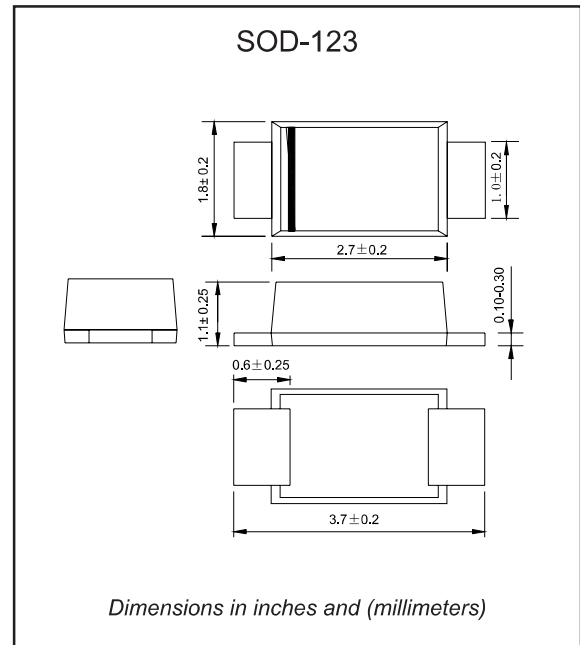
### Features

- ▶ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ▶ Metal silicon junction, majority carrier conduction
- ▶ Low power loss, high efficiency
- ▶ High forward surge current capability
- ▶ High temperature soldering guaranteed:  
260°C/10 seconds
- ▶ Compliant to RoHS Directive 2011/65/EU
- ▶ Compliant to Halogen-free

### Mechanical data

- ▶ **Case** : JEDEC SOD-123 molded plastic body
- ▶ **Terminals** : Plated axial leads, solderable per MIL-STD-750, Method 2026
- ▶ **Polarity** : Color band denotes cathode end
- ▶ **Mounting Position** : Any

### Package outline

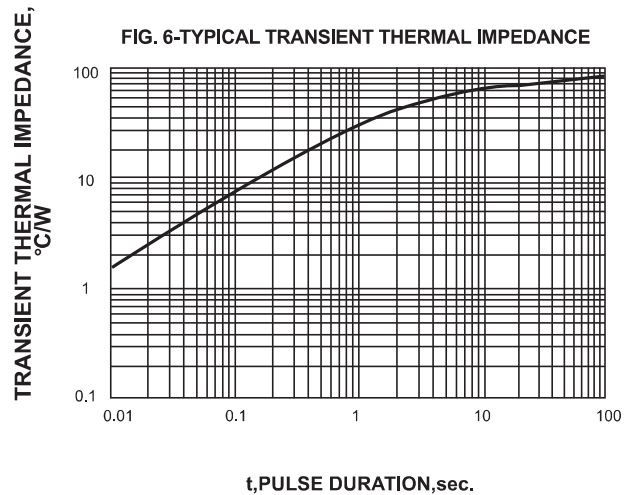
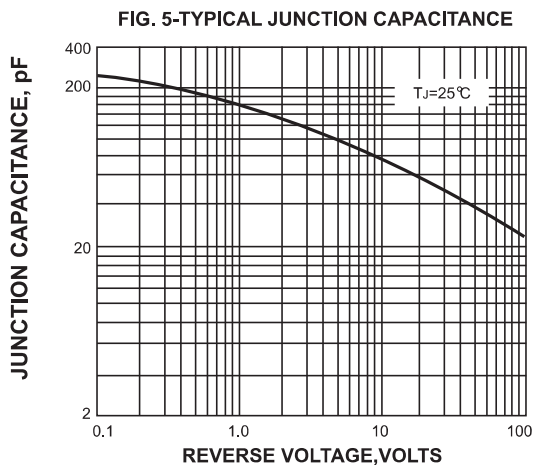
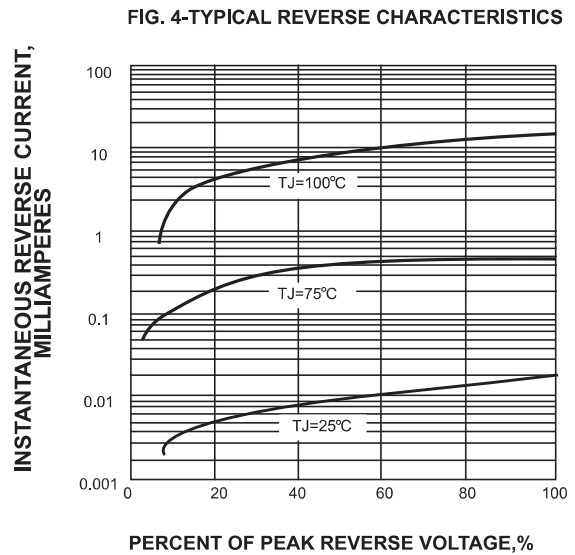
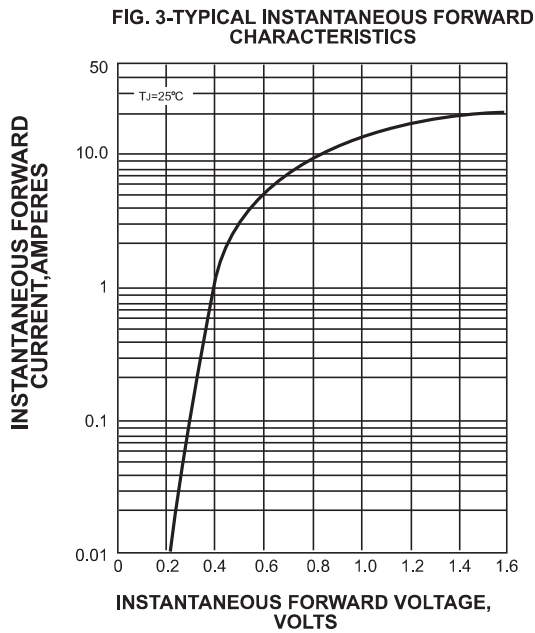
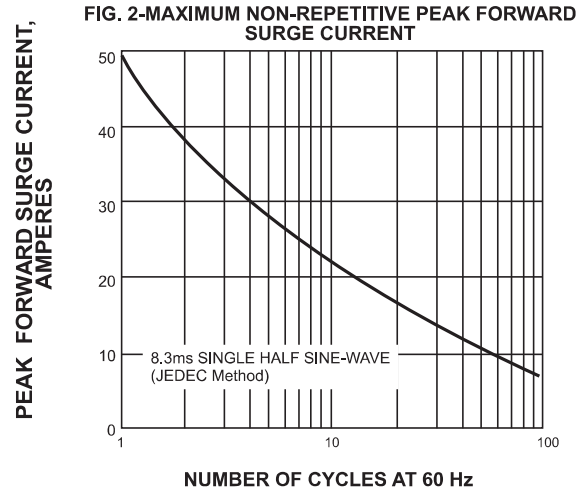
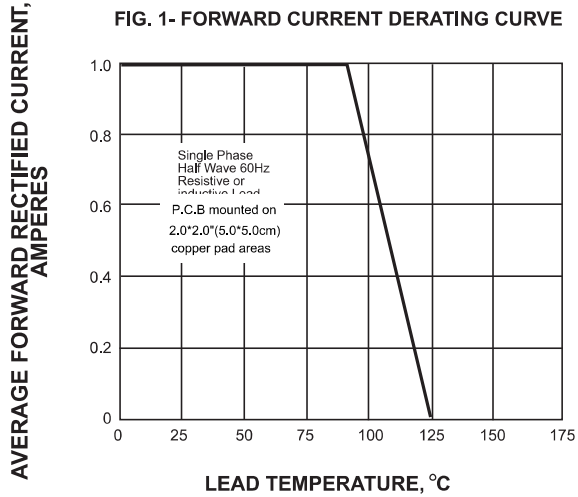


### Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)



PARAMETER	SYMBOLS	MBR120LSFT3G	UNITS
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	V
Maximum RMS voltage	$V_{RMS}$	20	V
Maximum DC blocking voltage	$V_{DC}$	20	V
Maximum average forward rectified current at $T_L$ (see fig.1)	$I_{(AV)}$	1.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	50.0	A
Maximum instantaneous forward voltage at 1.0A	$V_F$	0.45	V
Maximum instantaneous forward voltage at 3.0A	$V_F$	0.65	V
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$	$I_R$	0.2 10.0	mA
Typical junction capacitance (NOTE 1)	$C_J$	110	pF
Typical thermal resistance (NOTE 2)	$R_{\theta JA}$	92	$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	-55 to +125	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
2. P.C.B. mounted with 2.0x2.0" (5.0x5.0cm) copper pad areas

### Rating and characteristic curves



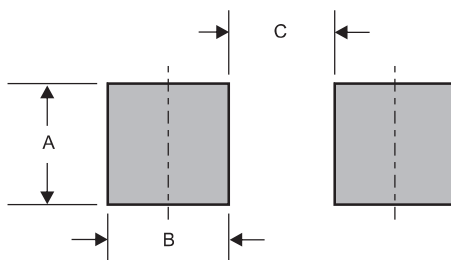
## Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

## Marking

Type number	Marking code
MBR120LSFT3G	L3LF

## Suggested solder pad layout

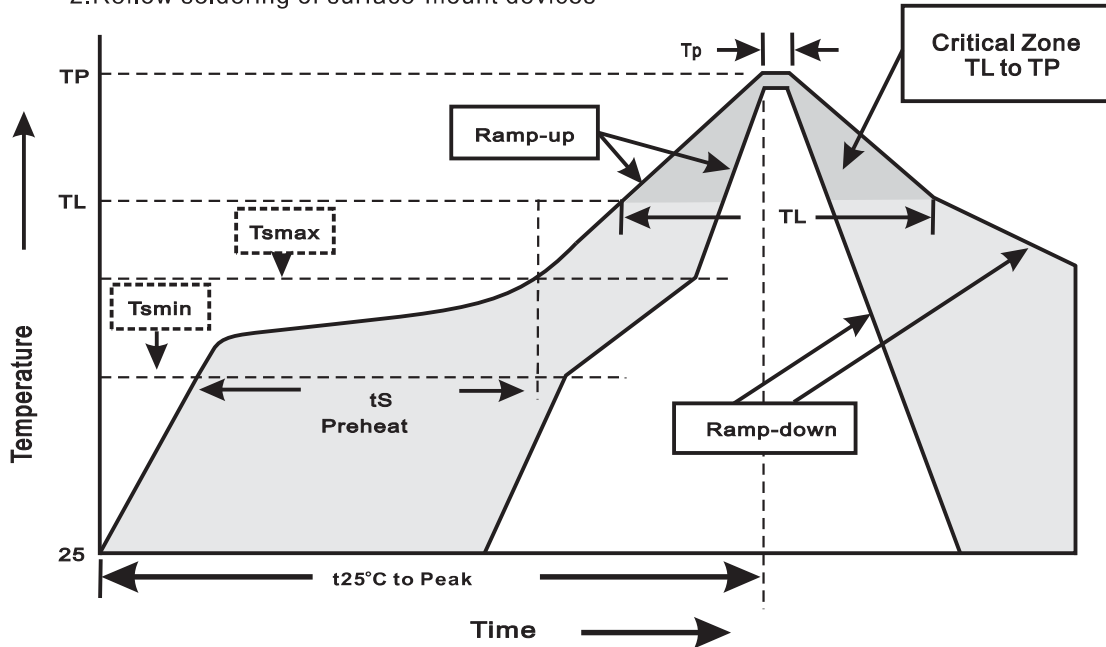


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123	0.075 (1.90)	0.055 (1.40)	0.075 (1.90)

**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(TL to TP)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts)	150°C 200°C 60~120sec
Tsmax to TL -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(TL) -Time(tL)	217°C 60~260sec
Peak Temperature(TP)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(tp)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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