

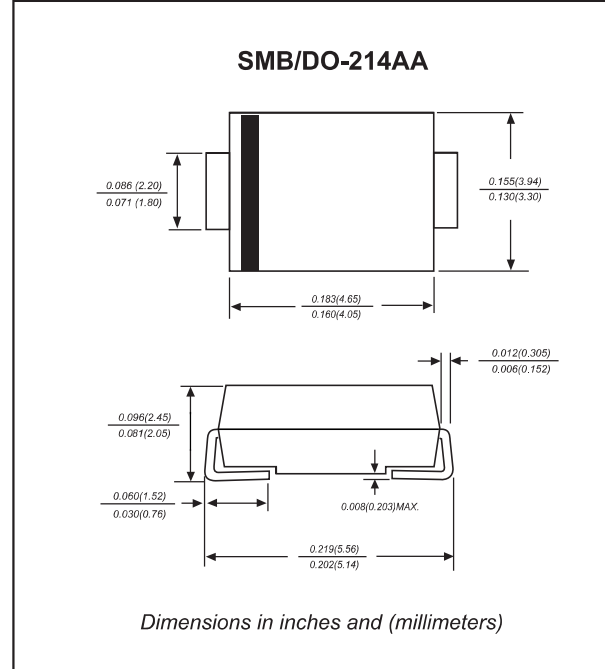
## Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance
- Low profile surface mounted application in order to optimize board space
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- Guardring for overvoltage protection
- Ultra high-speed switching
- Lead-free parts meet RoHS requirements
- Halogen free

## Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SMB/DO-214AA
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

## Package outline



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

PARAMETER	SYMBOLS	MBRS1100T3G	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	V
Maximum RMS voltage	$V_{RMS}$	70	V
Maximum continuous reverse voltage	$V_R$	100	V
Maximum average forward rectified current	$I_o$	1.0	A
Non-repetitive peak forward surge current 8.3ms single half sine-wave	$I_{FSM}$	50	A
Typical junction capacitance (Note 1)	$C_J$	160	pF
Operating junction temperature range	$T_J$	-55 to +175	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +175	$^{\circ}\text{C}$

## Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	MBRS1100T3G	UNIT
Maximum instantaneous forward voltage at $I_F=1\text{A}$	$V_F$	0.75	V
Maximum reverse leakage current $T_J=25^{\circ}\text{C}$ at rated $V_R$	$I_R$	0.5	mA
		10	mA

## Thermal characteristics

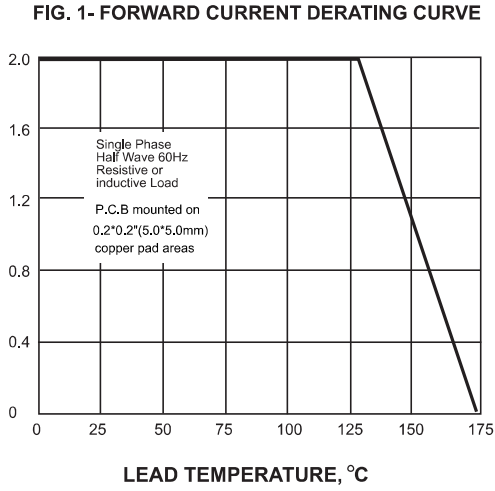
PARAMETER	SYMBOLS	MBRS1100T3G	UNIT
Typical thermal resistance junction to ambient (Note 2)	$R_{\theta JA}$	60	$^{\circ}\text{C/W}$
Typical thermal resistance junction to case (Note 2)	$R_{\theta JC}$	30	$^{\circ}\text{C/W}$

Notes1: Measured at 1MHz and applied reverse voltage of 4.0V D.C

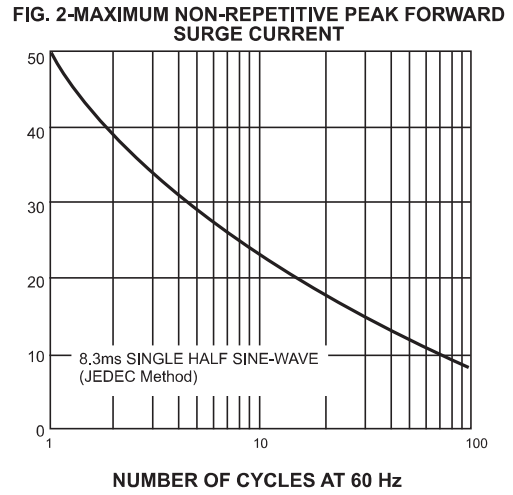
2: Mounted on FR-4 PCB copper, minimum recommended pad layout

**Rating and characteristic curves**

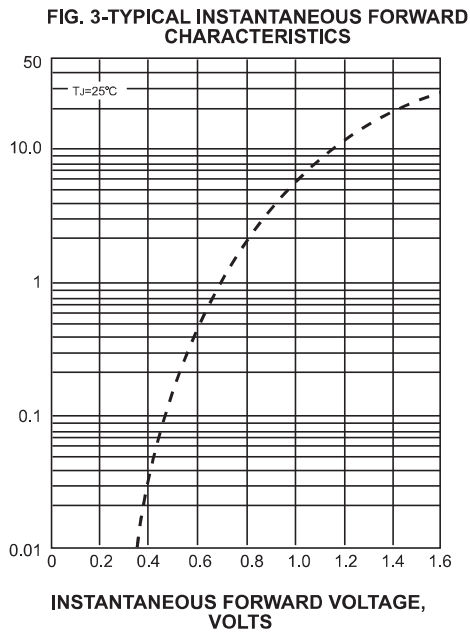
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES



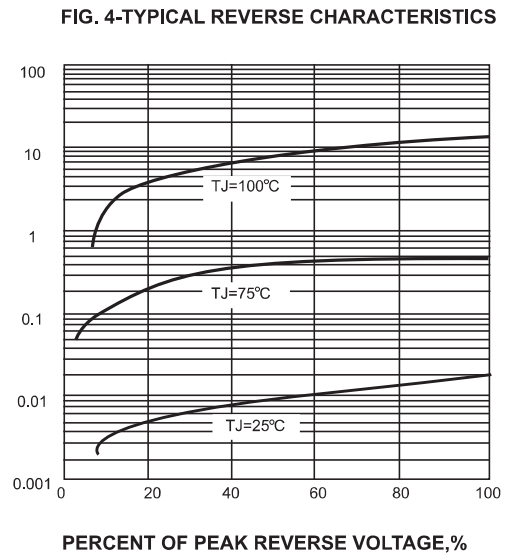
PEAK FORWARD SURGE CURRENT, AMPERES



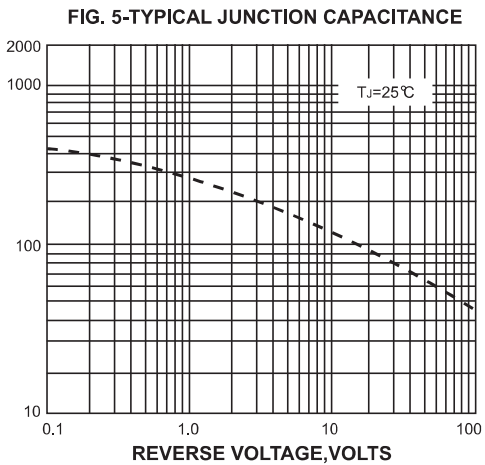
INSTANTANEOUS FORWARD CURRENT, AMPERES



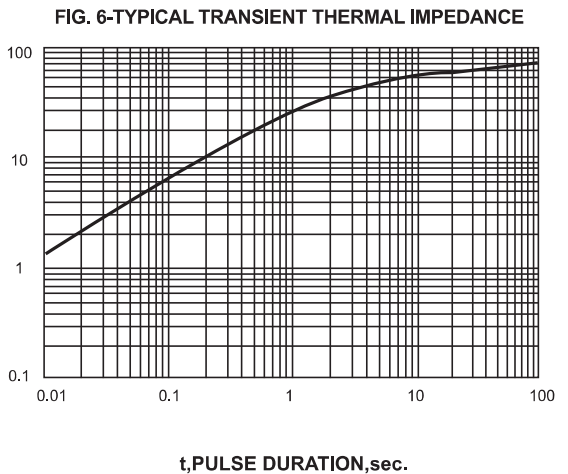
INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES



JUNCTION CAPACITANCE, pF



TRANSIENT THERMAL IMPEDANCE, °C/W



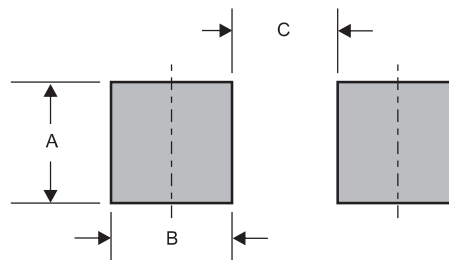
**Pinning information**

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

**Marking**

Type number	Marking code
MBRS1100T3G	B1C

**Suggested solder pad layout**

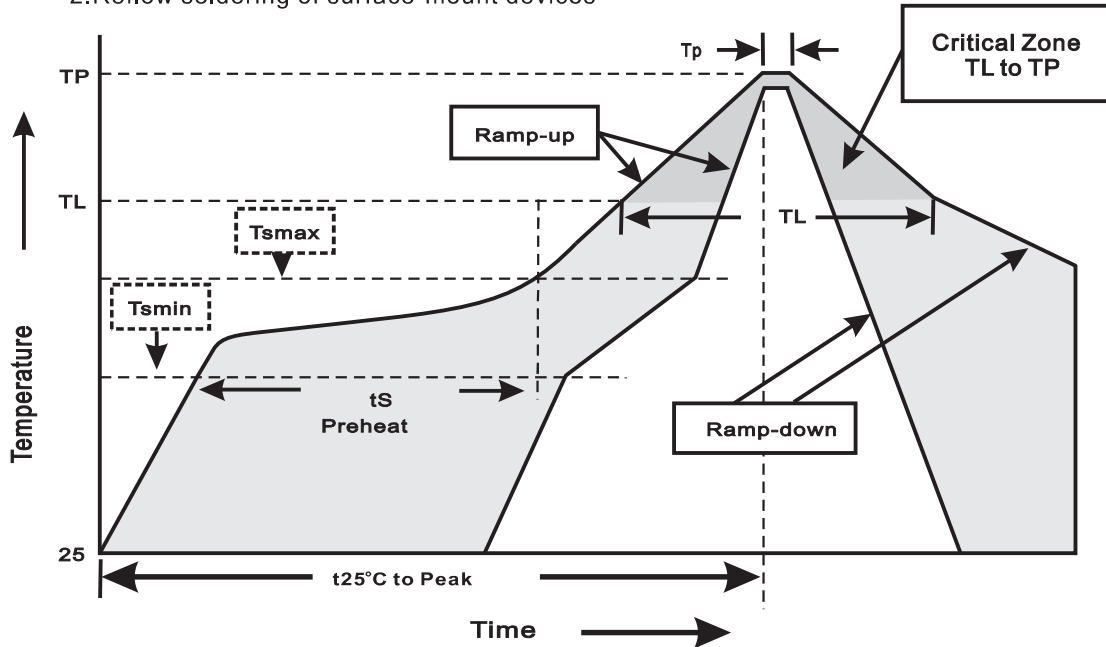


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMB	0.078 (2.00)	0.059 (1.50)	0.110 (2.80)

**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 <sub>L</sub> to T <sub>P</sub> )	<3°C/sec
Preheat -Temperature Min(T <sub>smin</sub> ) -Temperature Max(T <sub>smax</sub> ) -Time(min to max)(t <sub>s</sub> )	150°C 200°C 60~120sec
T <sub>smax</sub> to T <sub>L</sub> -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T <sub>L</sub> ) -Time(t <sub>L</sub> )	217°C 60~260sec
Peak Temperature(T <sub>P</sub> )	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t <sub>p</sub> )	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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