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INNOVATOR IN SEMICONDUCTOR

MBRS1100T3G

Chip Schottky Barrier Rectifier

Features

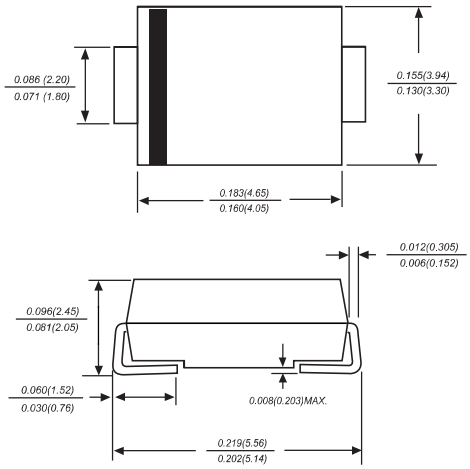
- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance
- Low profile surface mounted application in order to optimize board space
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- Guardring 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

SMB/DO-214AA



Dimensions in inches and (millimeters)

Maximum ratings (AT T_A=25°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	°C
Storage temperature range	T_{STG}	-55 to +175	°C

Electrical characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	SYMBOLS	MBRS1100T3G	UNIT
Maximum instantaneous forward voltage at I_F=1A	V_F	0.75	V
Maximum reverse leakage current T_J =25°C at rated V_R T_J =100°C	I_R	0.5 10	mA mA

Thermal characteristics

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

FIG. 1- FORWARD CURRENT DERATING CURVE

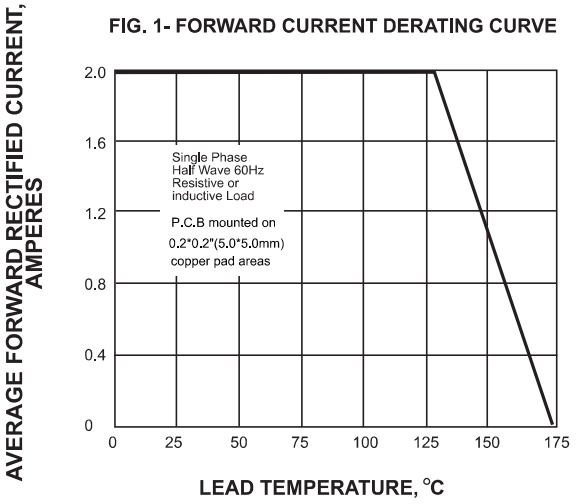


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

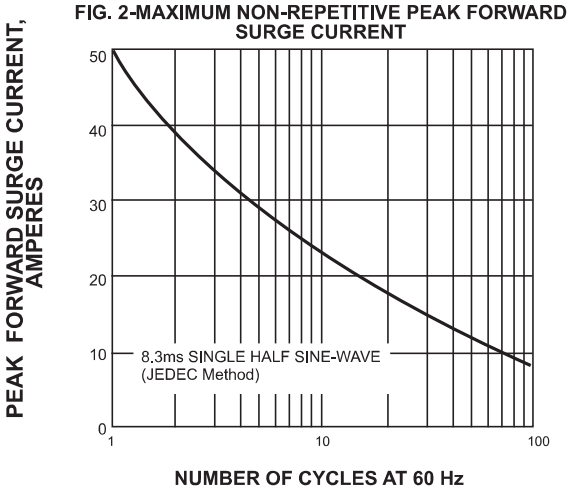


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

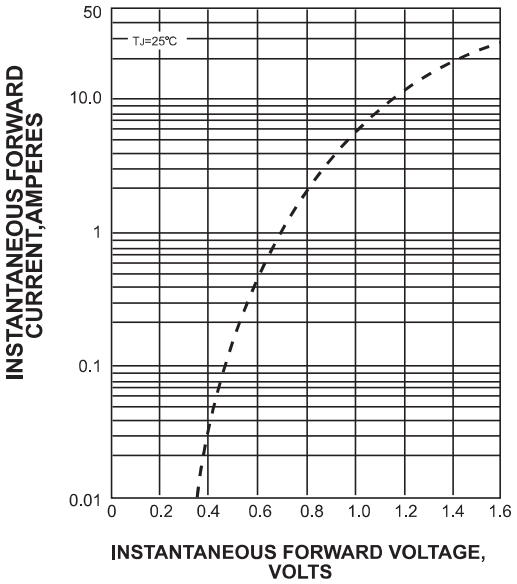


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

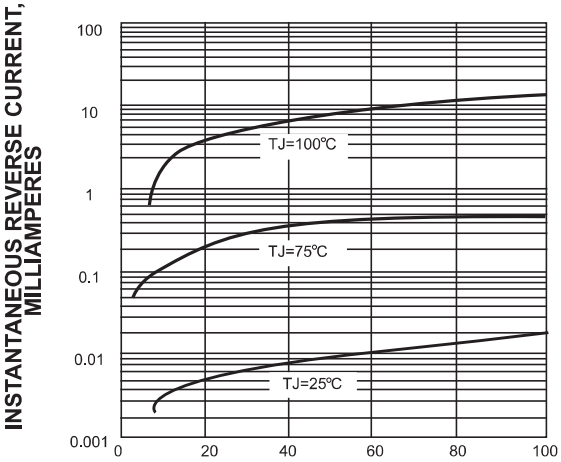


FIG. 5-TYPICAL JUNCTION CAPACITANCE

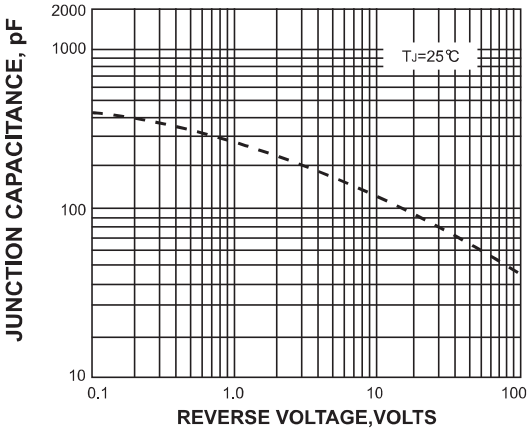
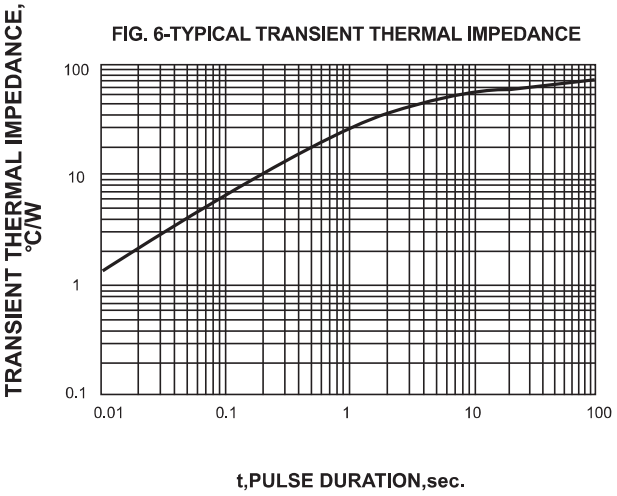


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



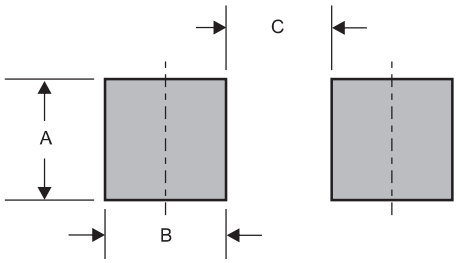
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
MBRS1100T3G	B1C

Suggested solder pad layout

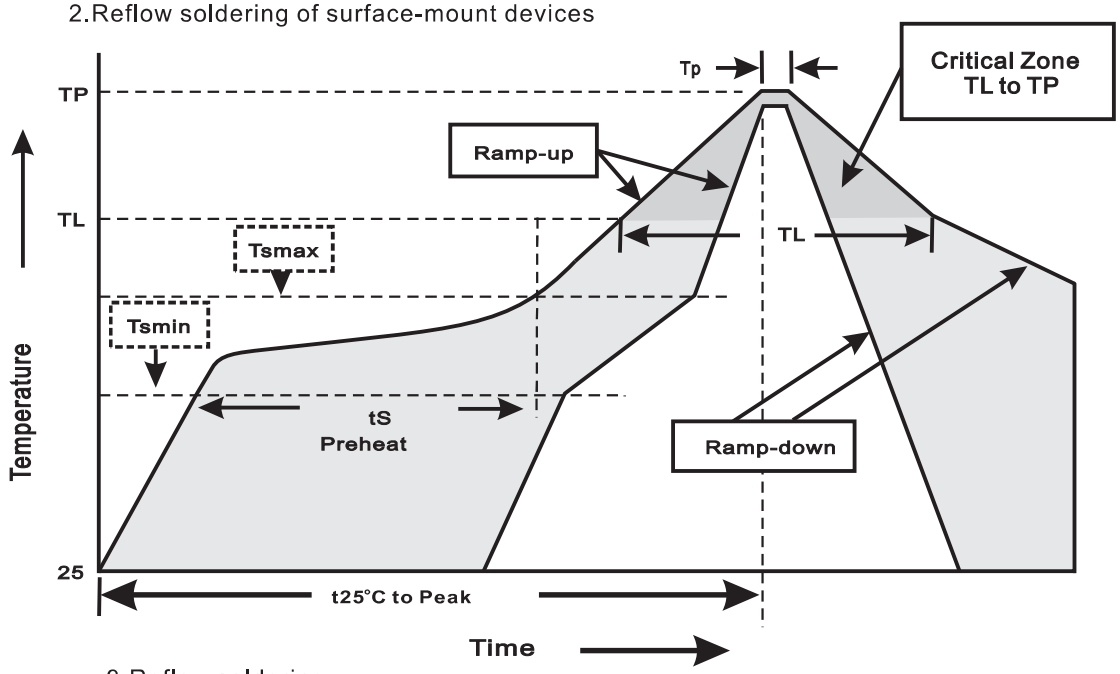


Dimensions in inches and (millimeters)

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_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