



Features

- Low profile package
- Idea for automated placement
- Glass passivated chip junctions
- Fast switching for high efficiency
- High forward surge capability
- High temperature soldering:
260°C/10 seconds at terminals
- Component in accordance to
RoHS 2011/65/EU and WEEE 2002/96/EC



MSMA



RoHS
COMPLIANT

Mechanical Date

- **Case:**MSMA
Molding compound meets
UL 94 V-0 flammability rating
- **Terminals:** Solder plated, solderable per
MIL-STD-750, Method 2026
- **Polarity:**Laser band denotes cathode end

Major Ratings and Characteristics

$I_{F(AV)}$	1.0A
V_{RRM}	50V to 1000V
I_{FSM}	30A
t_{rr}	150ns,250ns,500ns
V_F	1.3V
$T_{J,max.}$	150°C

Maximum Ratings & Thermal Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Item	Symbol	MAFR 1A	MAFR 1B	MAFR 1D	MAFR 1G	MAFR 1J	MAFR 1K	MAFR 1M	Unit
Marking code		F1A	F1B	F1D	F1G	F1J	F1K	F1M	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	100	V
Maximum average forward rectified current at $T_L=105^\circ\text{C}$	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30							A
Thermal resistance from junction to lead ⁽¹⁾	$R_{\theta JL}$	35							°C/W
Operating junction temperature range	T_J	-55 to +150							°C
Storage temperature range	T_{STG}	-55 to +150							°C

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

Item	Symbol	MAFR 1A	MAFR 1B	MAFR 1D	MAFR 1G	MAFR 1J	MAFR 1K	MAFR 1M	Unit
Maximum instantaneous forward voltage at 1.0A ⁽²⁾	V_F	1.3							V
Maximum DC reverse current at rated DC blocking voltage	I_R	$T_A=25^\circ\text{C}$							μA
		$T_A=125^\circ\text{C}$							
Maximum reverse recovery time ⁽³⁾	t_{rr}	150				250	500		ns

Note:1.Mounted on P.C.B. with 0.2x0.2"(5.0x5.0mm) copper pad areas.

2.Pulse test:300μs pulse width,1% duty cycle

3.Reverse recovery time test condition: $I_F=0.5A$ $I_R=1.0A$ $I_{rr}=0.25A$



Characteristic Curves ($T_A=25\text{ }^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

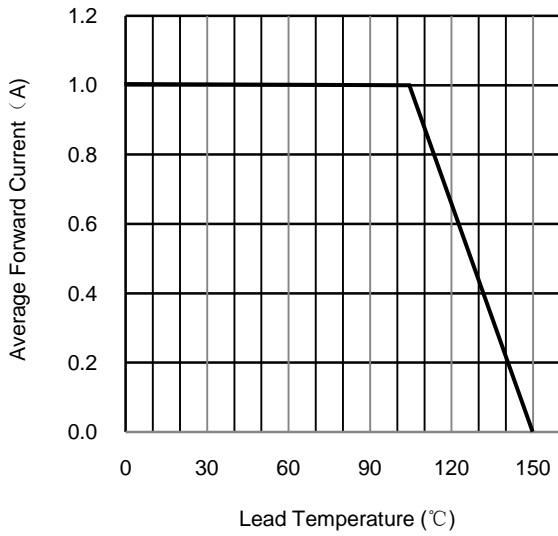


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

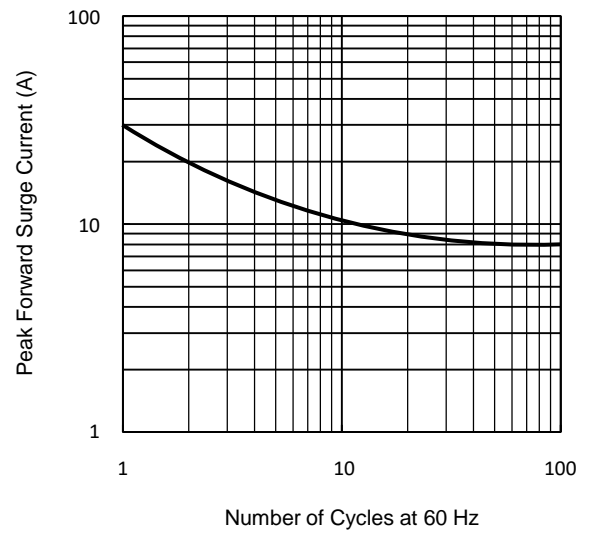


Fig.3 Typical Instantaneous Forward Characteristics

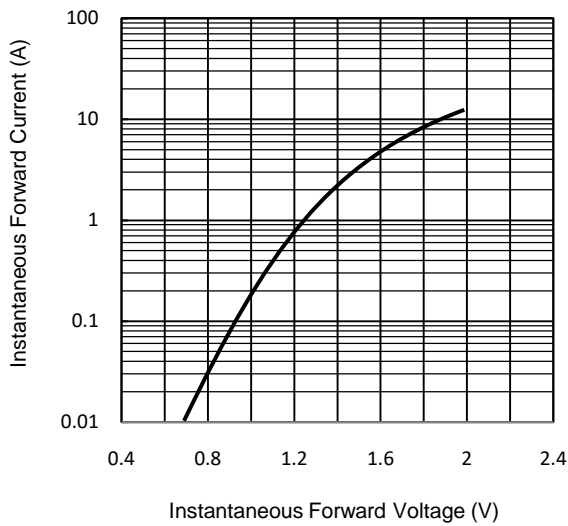
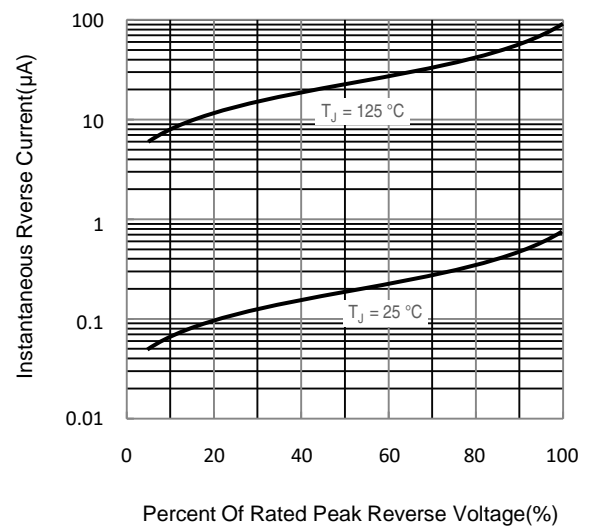
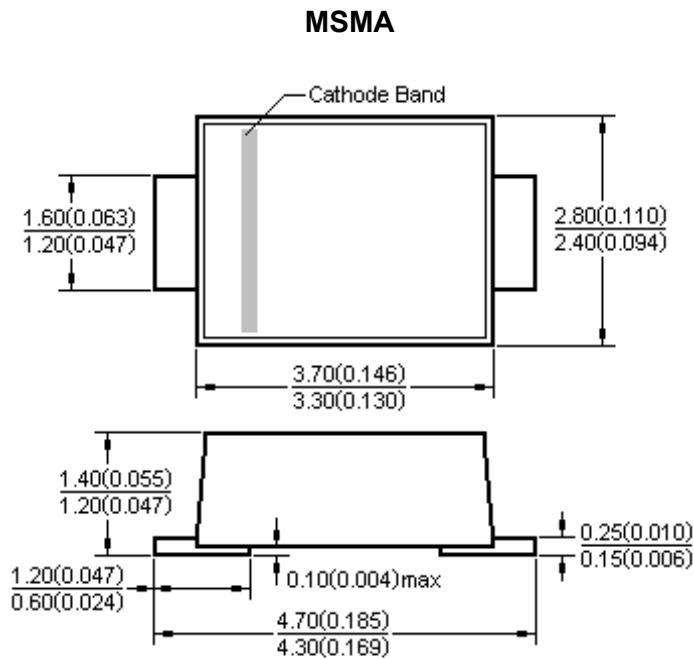


Fig.4 Typical Reverse Characteristics



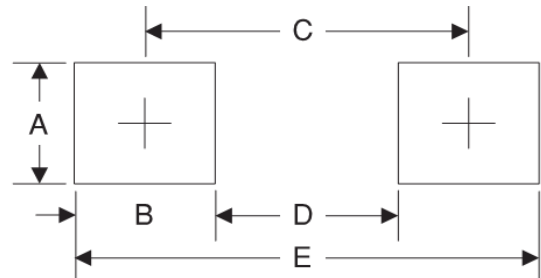


Package Outline



Dimensions in millimeters and (inches)

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.90	0.154
D	2.00	0.078
E	5.10	0.200

Ordering Information

Outline	Reel (PCS)	Per Carton (PCS)	Reel Diameters (mm)
Taping	5,000	100,000	330/13"

- TRR is registered trademark of Zhejiang TRR Microelectronics Inc. Zhejiang TRR Microelectronics Inc reserves the right to make changes to any product in this specification without notice.
- Zhejiang TRR Microelectronics Inc does not assure any liability arising out of the applications or use of any product described in this specification.
- Zhejiang TRR Microelectronics Inc advises customers to obtain the latest version of the device information before placing orders to verify that the required information is current.