



MASF0.5A~MASF0.5J

Surface Mount Super Fast Recovery Rectifiers

Features

- Glass passivated chip junctions
- Ideal for automated placement
- Ultrafast reverse recovery time for high efficiency
- Low profile package
- High forward surge capability
- High temperature soldering: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/1 and WEEE 2002/96/EC



Mechanical Data

- **Case:** JEDEC MSMA molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** Laser band denotes cathode end

Major Ratings and Characteristics

$I_{F(AV)}$	0.5 A
V_{RRM}	50 V to 600 V
I_{FSM}	15 A
t_{rr}	35 nS
V_F	0.95 V, 1.25 V, 1.7 V
$T_j \text{ max.}$	150 °C

Maximum Ratings & Thermal Characteristics

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

Items	Symbol	MASF 0.5A	MASF 0.5B	MASF 0.5C	MASF 0.5D	MASF 0.5E	MASF 0.5G	MASF 0.5J	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current	$I_{F(AV)}$	0.5							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	15							A
Thermal resistance from junction to lead ⁽¹⁾	$R_{\theta JL}$	35							°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							°C

Note 1: Mounted on P.C.B. with 0.2 x 0.2" (5.0 x 5.0mm) copper pad areas.

Electrical Characteristics

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

Items	Test conditions		Symbol	MASF0.5A ~ MASF0.5D	MASF0.5E~ MASF0.5G	MASF0.5J	UNIT
Instantaneous forward voltage	$I_F = 0.5A^{(2)}$		V_F	0.95	1.25	1.70	V
Reverse current	$V_R = V_{DC}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	I_R	5 100			μA
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$		t_{rr}	35			nS
Typical junction capacitance	4.0V, 1.0MHz		C_J	10			pF

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



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

Fig.1 Forward Current Derating Curve

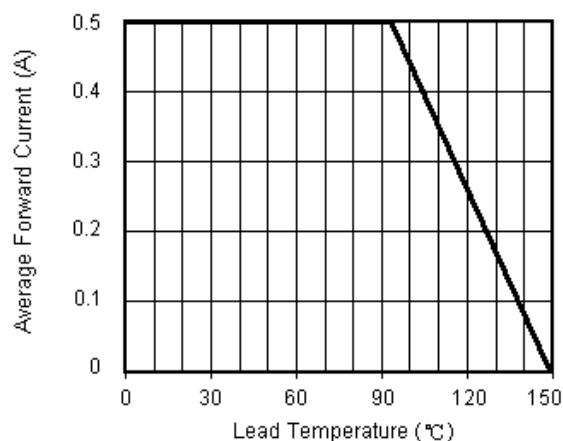


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

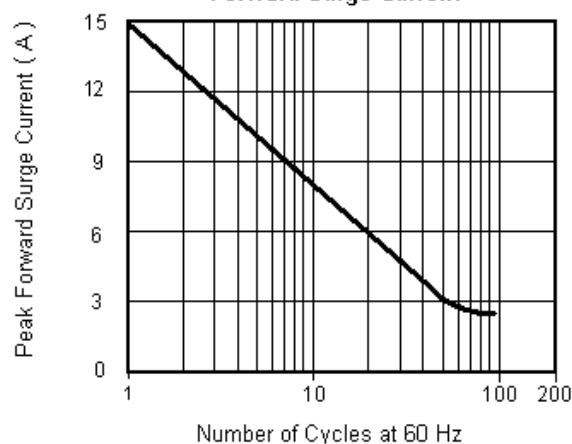


Fig.3 Typical Instantaneous Forward Characteristics

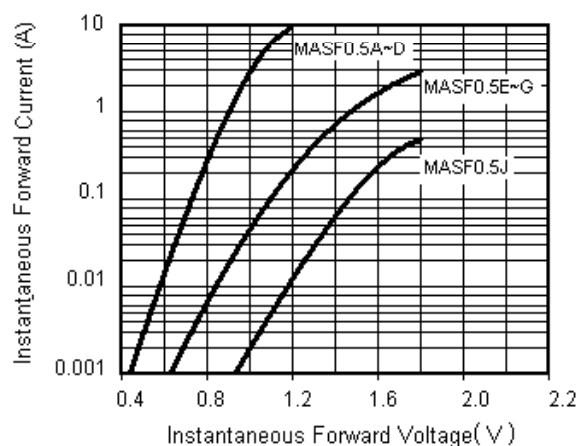
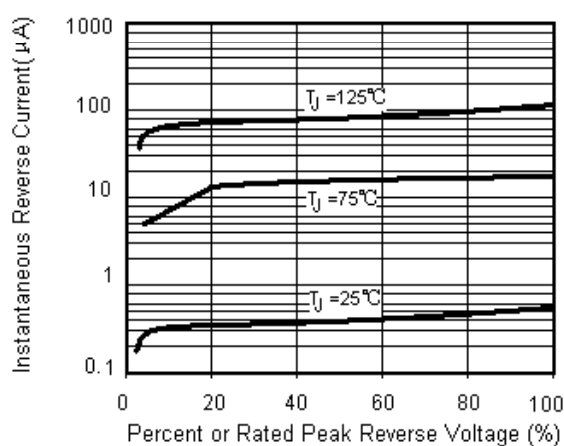


Fig.4 Typical Reverse Leakage Characteristics

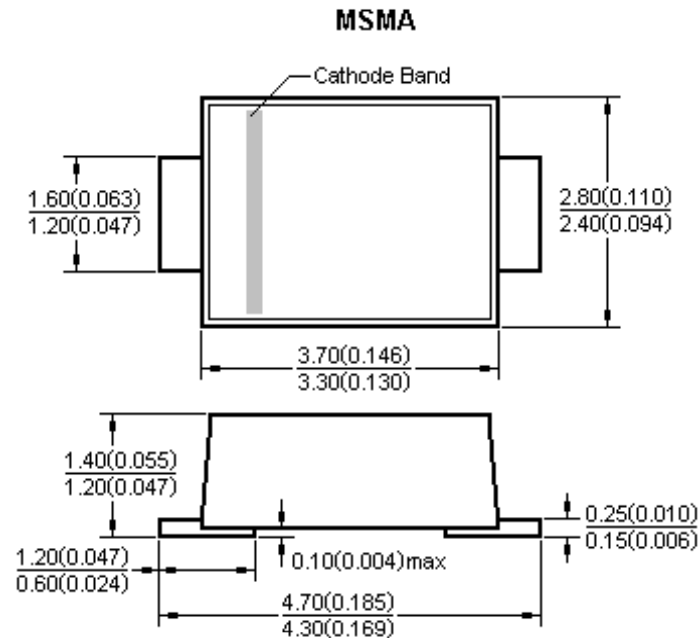




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Package Outline



Dimensions in millimeters and (inches)

Notice

- Product is intended for use in general electronics applications.
- Product should be worked less than the ratings; if exceeded, may cause permanent damage or introduce latent failure mechanisms.
- The absolute maximum ratings are rated values and must not be exceeded during operation. The following are the general derating methods you design a circuit with a device.
 - $I_{F(AV)}$: We recommend that the worst case current be no greater than 80% .
 - I_{FSM} : This rating specifies the non-repetitive peak current. This is only applied for an abnormal operation, which the general during the lifespan of the device.
 - T_J : Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T_J of below 125°C.

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