

# **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



- 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 <sub>F(AV)</sub>	1.0 A
$V_{RRM}$	50 V to 600 V
I <sub>FSM</sub>	30 A
t <sub>rr</sub>	35 nS
$V_{F}$	0.95 V, 1.25 V, 1.7 V
T <sub>j</sub> max.	150 °C

### Maximum Ratings & Thermal Characteristics

(T<sub>A</sub> = 25 °C unless otherwise noted)

Items	Symbol	MASF 1A	MASF 1B	MASF 1C	MASF 1D	MASF 1E	MASF 1G	MASF 1J	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 <sub>F(AV)</sub>	1.0						Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30						Α	
Thermal resistance from junction to lead <sup>(1)</sup>	$R_{\theta JL}$	35						°C/W	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	–55 to +150					$^{\circ}$		

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

### Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Items	Test conditions		Symbol	MASF1A ~ MASF1D	MASF1E~ MASF1G	MASF1J	UNIT
Instantaneous forward voltage	I <sub>F</sub> =1.0A <sup>(2)</sup>		$V_{F}$	0.95	1.25	1.70	V
Reverse current	V <sub>R</sub> =V <sub>DC</sub>	T <sub>A</sub> =25℃ T <sub>A</sub> =120℃	I <sub>R</sub>	5 100			μΑ
Reverse recovery time	$I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $I_{rr} = 0.25 \text{ A}$		t <sub>rr</sub>	35			nS
Typical junction capacitance	4.0V,1.0MHz		CJ		pF		

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



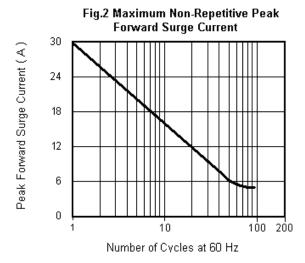
### **Surface Mount Super Fast Recovery Rectifiers**

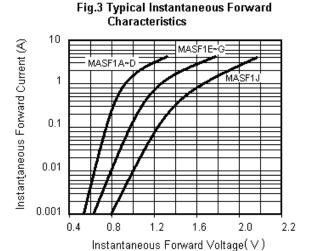
### Characteristic Curves (T<sub>A</sub>=25 ℃ unless otherwise noted)

Fig.1 Forward Current Derating Curve

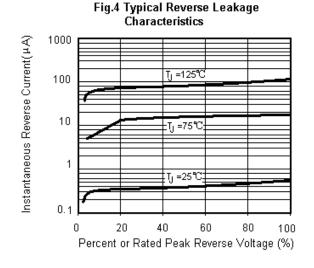
1.0

(Y) to the property of the property





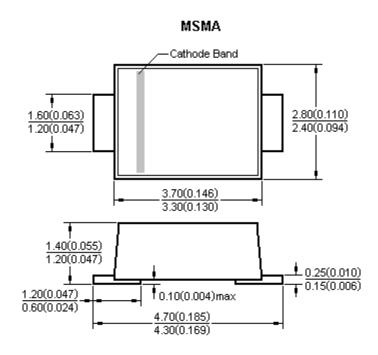
Lead Temperature (℃)





# **Surface Mount Super Fast Recovery Rectifiers**

### **Package Outline**



Dimentsions 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.
  - $I_{\text{F(AV)}}\!:\!\text{We recommend}$  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.
- TRR is registered trademark of Rising-sun Technology. Rising-sun Technology reserves the right to make changes to any product in this
  specification to improve reliability, functional characteristics, or design without notice.
- Rising-sun Technology does not assure any liability arising out of the applications or any product described in this specification.
- Rising-sun Technology advises customers to obtain the latest version of the device information before placing orders to verify that the
  required information is current.