



# MASK12~MASK110

## Surface Mount Schottky Rectifiers

### Features

- Low profile package
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low power losses, high efficiency
- Low forward voltage drop
- High 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

$I_{F(AV)}$	1.0 A
$V_{RRM}$	20 V to 100 V
$I_{FSM}$	30 A
$V_F$	0.50V,0.55V,0.70V,0.85V
$T_j \text{ max.}$	125 °C

### Maximum Ratings & Thermal Characteristics

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

Items	Symbol	MASK 12	MASK 13	MASK 14	MASK 15	MASK 16	MASK 18	MASK 110	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	80	100	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	35	42	56	70	V
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	80	100	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30							A
Voltage rate of change (rated $V_R$ )	$dv/dt$	10000							V/ $\mu$ s
Thermal resistance from junction to lead <sup>(1)</sup>	$R_{\theta JL}$	35							°C/W
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +125							°C

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

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

Items	Test conditions	Symbol	MASK 12	MASK13~MASK14	MASK15~MASK16	MASK18~MASK110	UNIT	
Instantaneous forward voltage	$I_F=1.0A^{(2)}$	$V_F$	0.50	0.55	0.70	0.85	V	
Reverse current	$V_R=V_{DC}$ $T_A=25\text{ °C}$ $T_A=100\text{ °C}$	$I_R$	0.5				10	mA

Note 2: Pulse test:300 $\mu$ s pulse width,1% duty cycle.

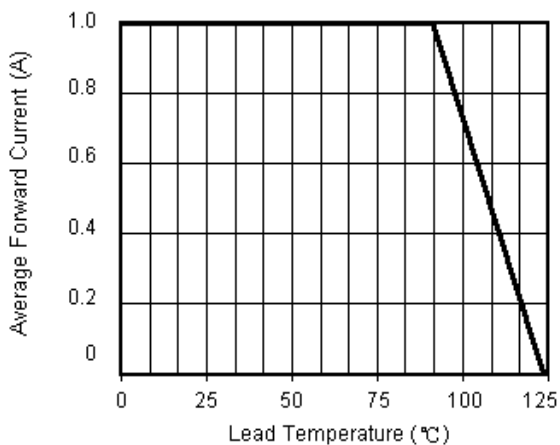


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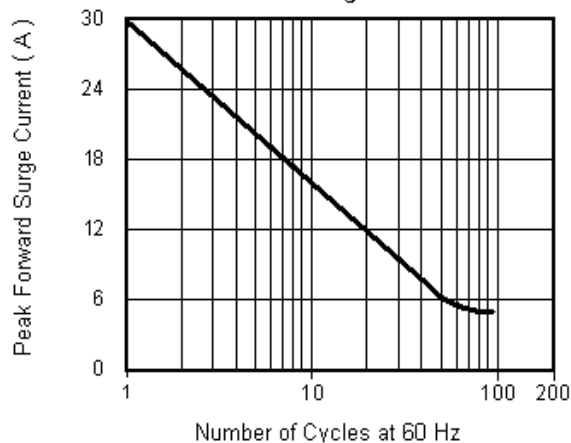
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**Characteristic Curves** ( $T_A=25\text{ }^\circ\text{C}$  unless otherwise noted)

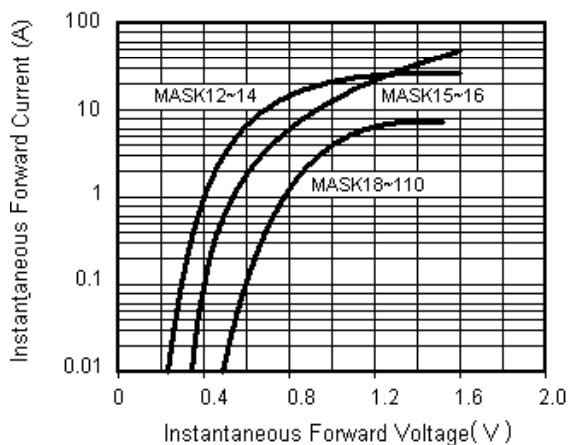
**Fig.1 Forward Current Derating Curve**



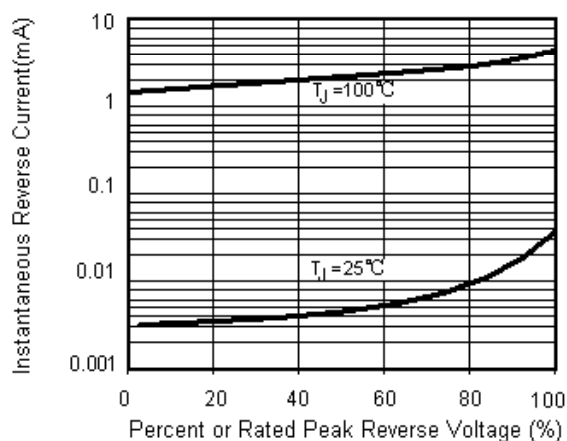
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



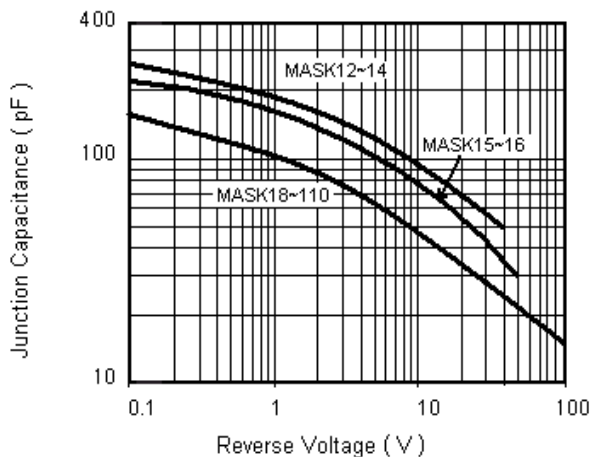
**Fig.3 Typical Instantaneous Forward Characteristics**



**Fig.4 Typical Reverse Leakage Characteristics**



**Fig.5 Typical Junction Capacitance**

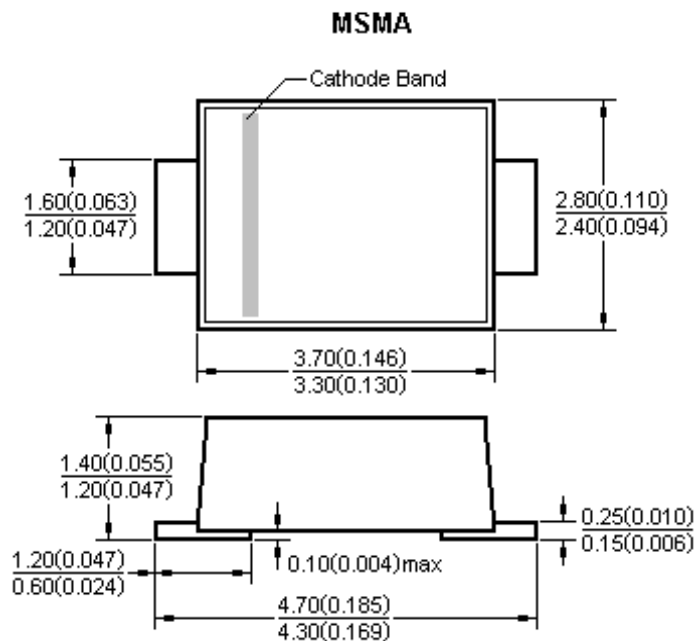




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## Surface Mount Schottky Rectifiers

### 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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