

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



MSMA

Mechanical Data

- **Case:** MSMA molded plastic
- **Terminals:** Solder plated, solderable per
JESD22-B102
- **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/ μ s
Thermal resistance from junction to lead ⁽¹⁾	$R_{\theta JL}$	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 μ s pulse width, 1% duty cycle.

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

Fig.1 Forward Current Derating Curve

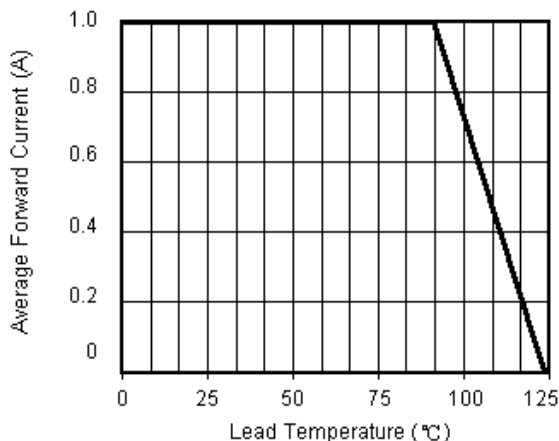


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

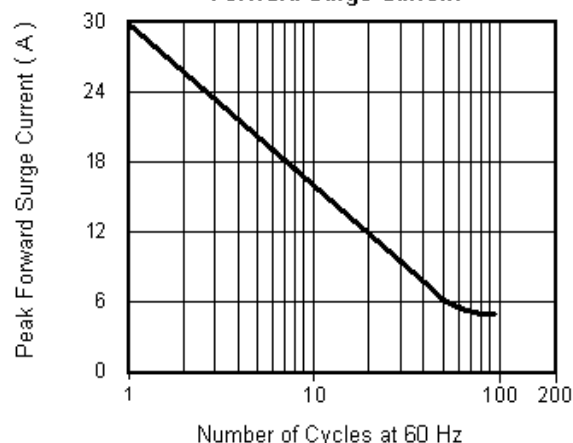


Fig.3 Typical Instantaneous Forward Characteristics

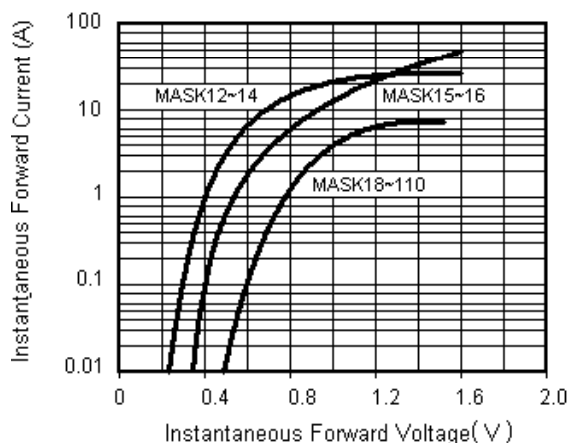


Fig.4 Typical Reverse Leakage Characteristics

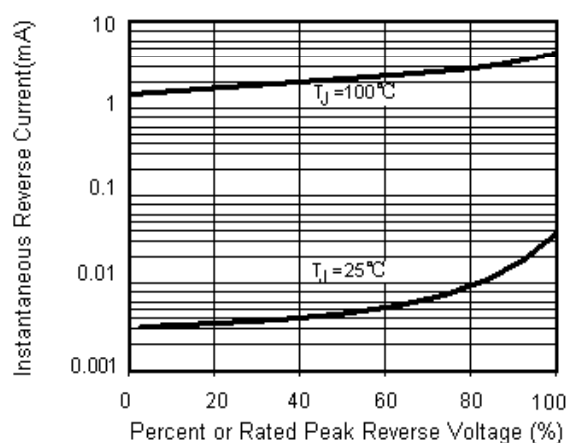
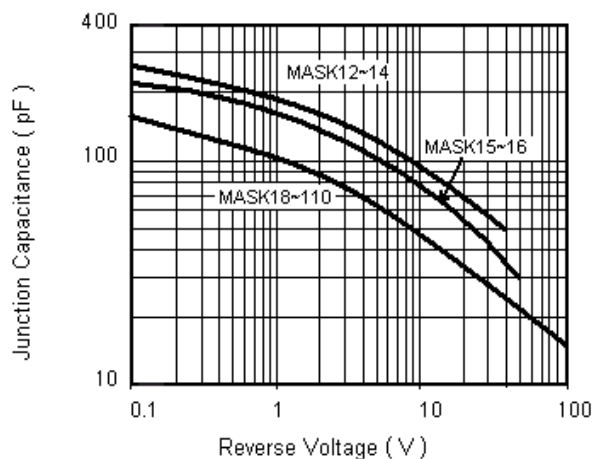
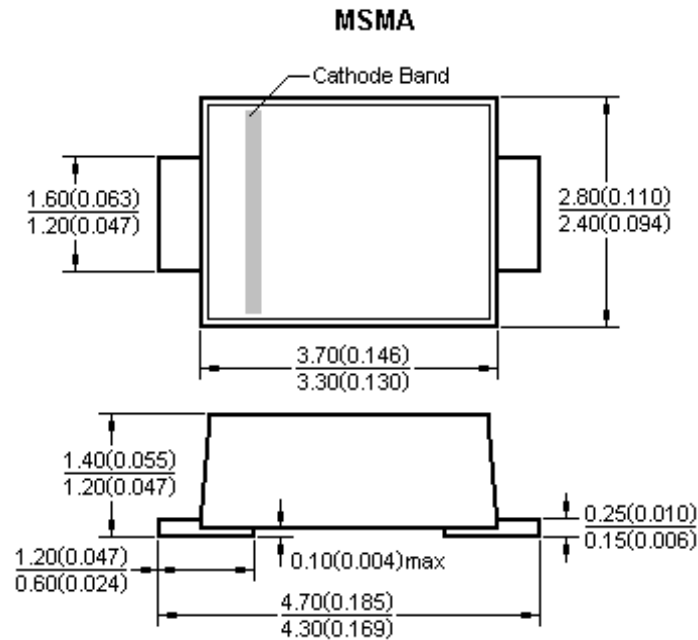


Fig.5 Typical Junction Capacitance



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%.

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 100°C.

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