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℃/10 seconds at terminals
- Component in accordance to
  RoHS 2002/95/1 and WEEE 2002/96/EC



Mechanical Date

- **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 max.	**125 °C**

Maximum Ratings & Thermal Characteristics

(T_A = 25 °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/μs
Thermal resistance from junction to lead(1)	$R_{\theta JL}$	35							℃/W
Operating junction and storage temperature range	T_J, T_{STG}	–65 to +125							℃

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 °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℃ T_A=100℃	I_R	0.5 10				mA

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

Characteristic Curves (T_A=25 ℃ unless otherwise noted)

Fig.1 Forward Current Derating Curve

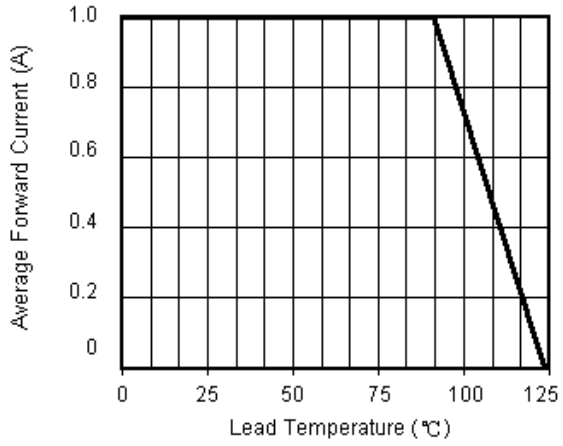


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

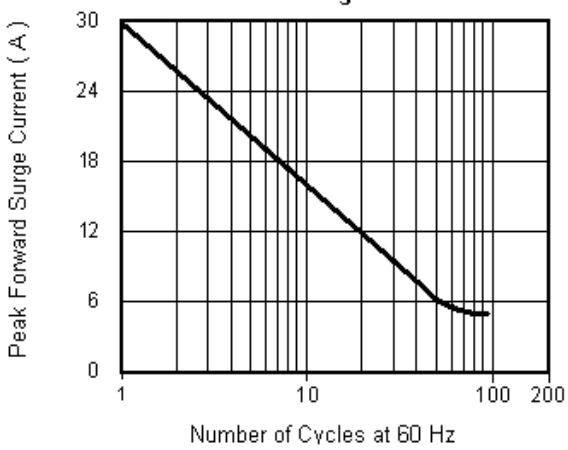


Fig.3 Typical Instantaneous Forward Characteristics

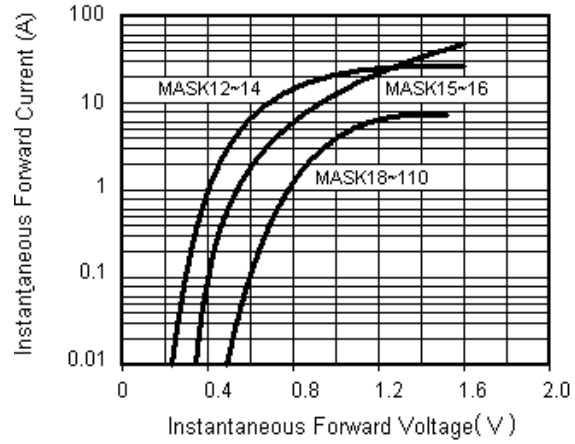


Fig.4 Typical Reverse Leakage Characteristics

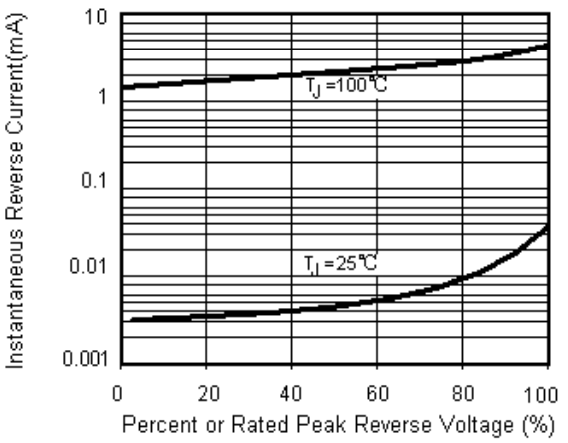
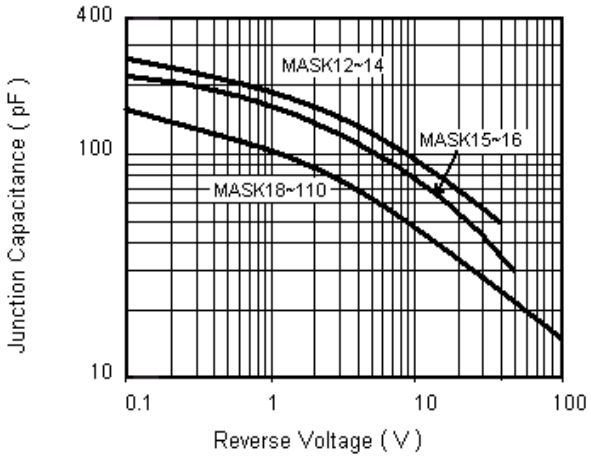
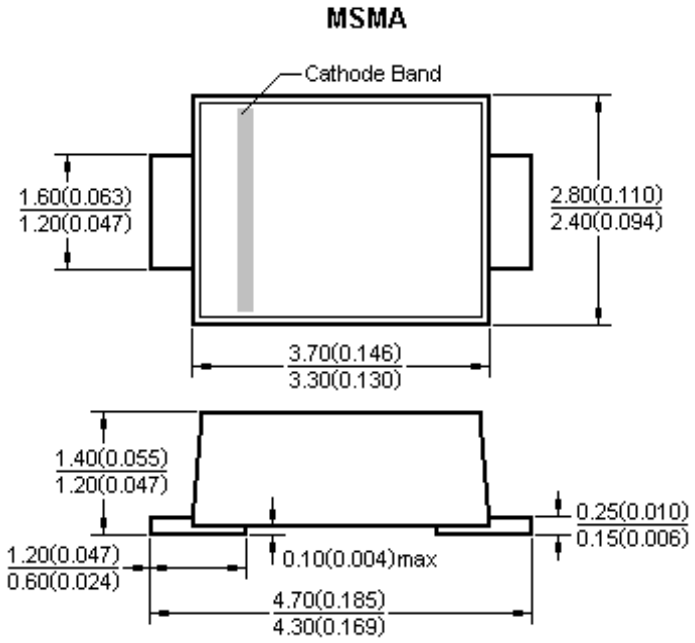


Fig.5 Typical Junction Capacitance



Package Outline



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.

  $I_{F(AV)}$: 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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