

**SURFACE MOUNT GLASS PASSIVATED
 SUPER FAST SILICON RECTIFIER**

VOLTAGE RANGE 50 to 600 Volts CURRENT 1.0 Ampere

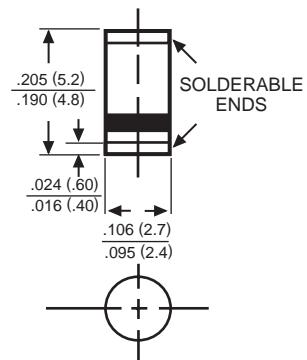
FEATURES

- * Fast switching
- * Glass passivated device
- * Ideal for surface mounted applications
- * Low leakage current
- * Metallurgically bonded construction
- * Mounting position: Any
- * Weight: 0.015 gram

MECHANICAL DATA

- * Epoxy : Device has UL flammability classification 94V-0

MELF



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
 Single phase, half wave, 60 Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

MAXIMUM RATINGS (At TA = 25°C unless otherwise noted)

RATINGS	SYMBOL	ESM101	ESM102	ESM103	ESM104	ESM105	ESM106	ESM107	UNITS
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	50	100	150	200	300	400	600	Volts
Maximum RMS Volts	V _{RMS}	35	70	105	140	210	280	420	Volts
Maximum DC Blocking Voltage	V _D C	50	100	150	200	300	400	600	Volts
Maximum Average Forward Current at TA = 55°C	I _o					1.0			Amps
Peak Forward Surge Current, IFM (surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I _{FSM}				30				Amps
Typical Junction Capacitance (Note 2)	C _J		15			10			pF
Operating and Storage Temperature Range	T _j , T _{STG}				-55 to + 150				°C

ELECTRICAL CHARACTERISTICS (At TA = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	ESM101	ESM102	ESM103	ESM104	ESM105	ESM106	ESM107	UNITS
Maximum Forward Voltage at 1.0A DC	V _F		0.95			1.25		1.70	Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	I _R	@ TA = 25°C		5.0				uAmps	
@ TA=100°C				100					
Maximum Reverse Recovery Time (Note 1)	trr	35				50		nSec	

NOTES : 1. Test Conditions: If=0.5A, Ir=-1.0A, Irr=-0.25A.

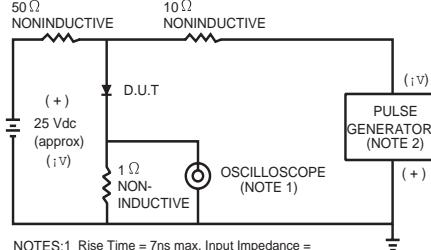
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

2004-12

REV.A

RATING AND CHARACTERISTIC CURVES (ESM101 THRU ESM107)

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1. Rise Time = 7ns max. Input Impedance = 1 megohm. 22 pF.
2. Rise Time = 10ns max. Source Impedance = 50 ohms.

FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

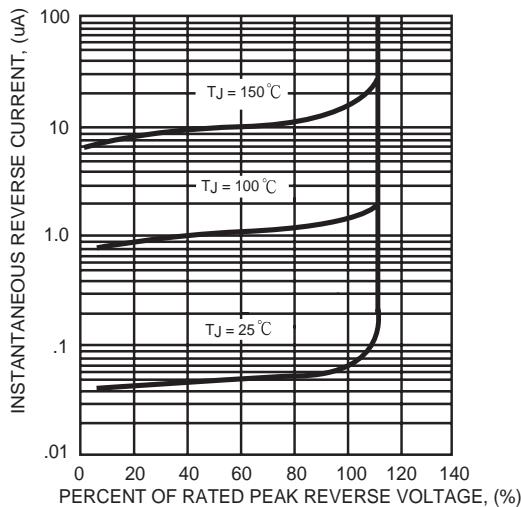


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

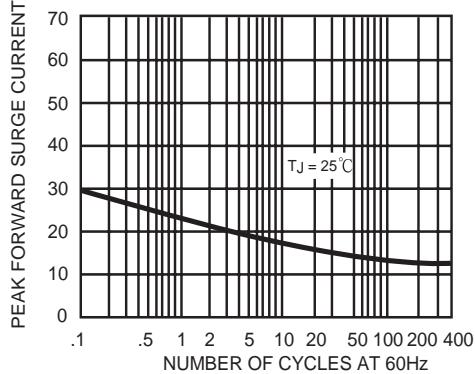


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

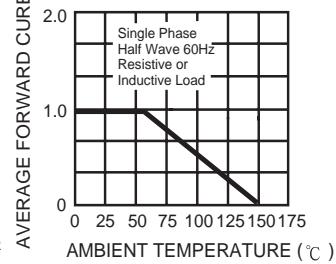


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

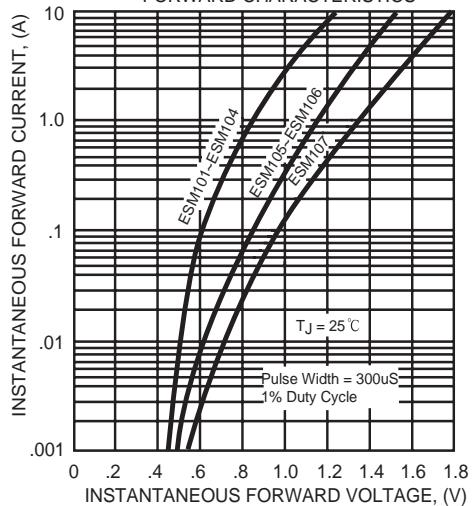
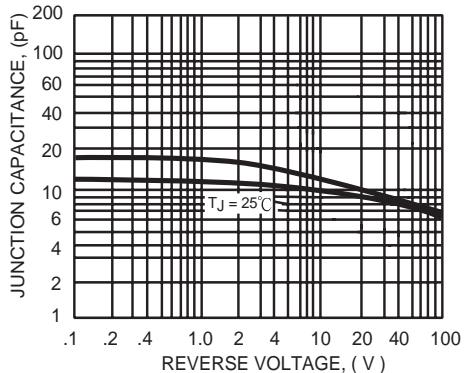
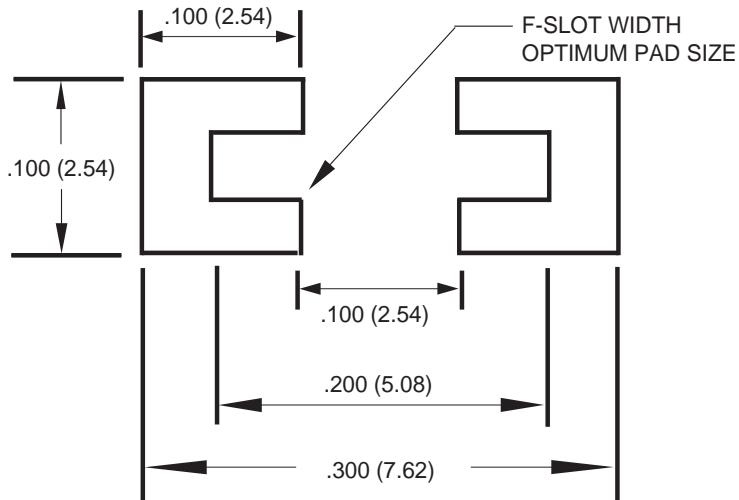


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



Mounting Pad Layout



Dimensions in inches and (millimeters)