

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

**VOLTAGE RANGE 50 to 400 Volts CURRENT 1.0 Ampere**

**FEATURES**

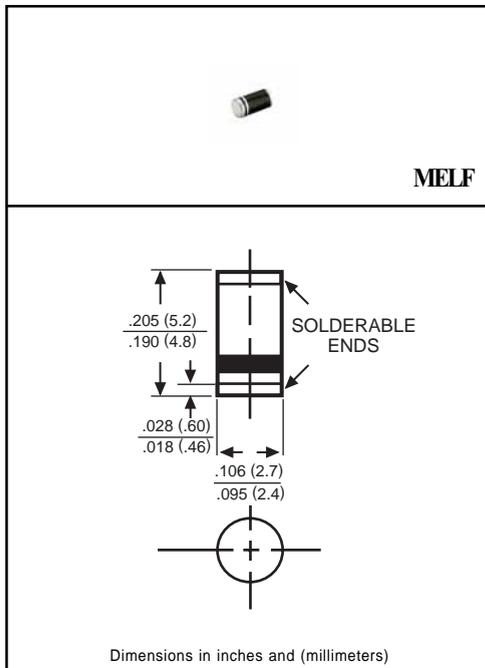
- \* Fast switching
- \* Glass passivated device
- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Metallurgically bonded construction
- \* Mounting position: Any
- \* Weight: 0.015 gram

**MECHANICAL DATA**

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

**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	UNITS
Maximum Recurrent Peak Reverse Voltage		VRRM	50	100	150	200	300	400	Volts
Maximum RMS Volts		VRMS	35	70	105	140	210	280	Volts
Maximum DC Blocking Voltage		VDC	50	100	150	200	300	400	Volts
Maximum Average Forward Current at TA = 55°C		Io	1.0						Amps
Peak Forward Surge Current, IFM (surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)		IFSM	30						Amps
Typical Junction Capacitance (Note 2)		CJ	15			10			pF
Operating and Storage Temperature Range		TJ, TSTG	-65 to + 175						°C

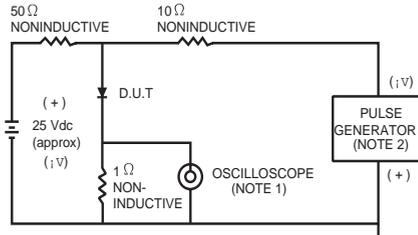
**ELECTRICAL CHARACTERISTICS** (At TA = 25°C unless otherwise noted)

CHARACTERISTICS		SYMBOL	ESM101	ESM102	ESM103	ESM104	ESM105	ESM106	UNITS
Maximum Forward Voltage at 1.0A DC		VF	0.95			1.25			Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	@ TA = 25°C	IR	5.0						uAmps
	@ TA = 125°C		100						
Maximum Reverse Recovery Time (Note 1)		trr	35						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.

# RATING AND CHARACTERISTIC CURVES ( ESM101 THRU ESM106 )

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.

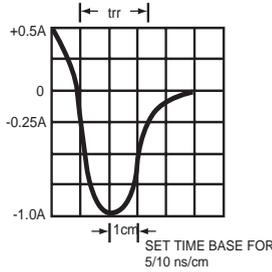


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

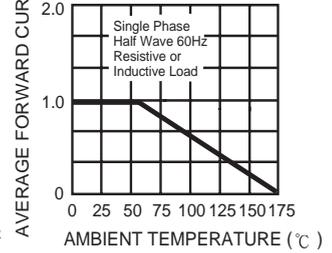


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

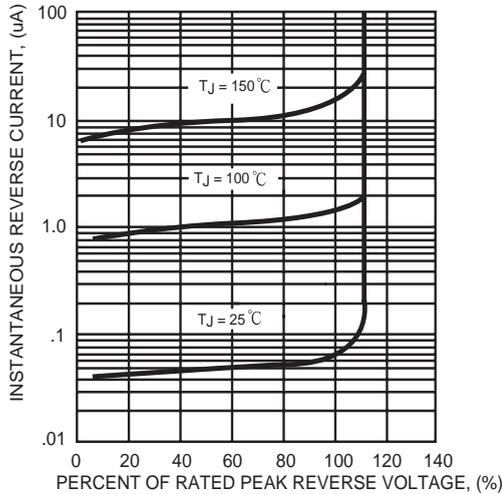


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

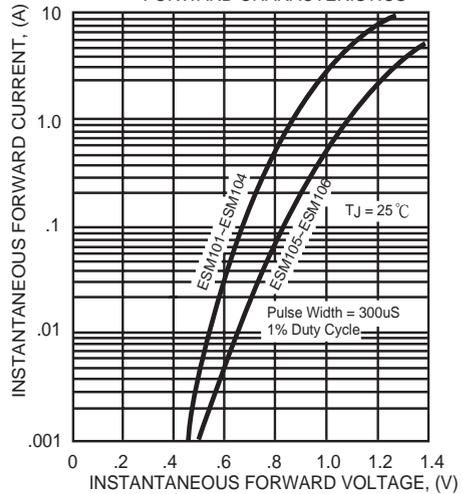


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

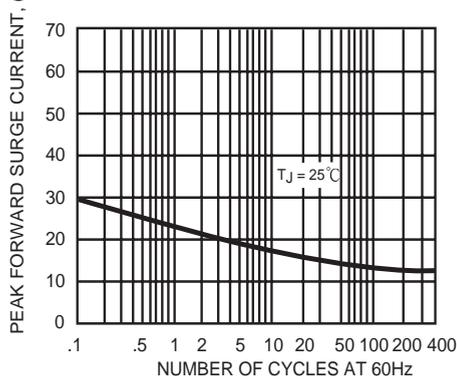


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

