

## ESM101 THRU ESM107

### SURFACE MOUNT GLASS PASSIVATED SUPER FAST SILICON RECTIFIER VOLTAGE RANGE 50 to 600 Volts CURRENT 1.0 Ampere

#### **FEATURES**

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

#### **MECHANICAL DATA**

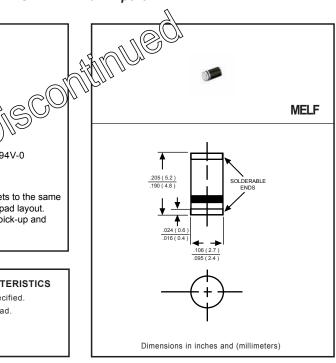
\* Epoxy : Device has UL flammability classification 94V-0

#### **DISCONTINUED-**

"This series is replaced by the EFM10X series that meets to the same fit and function parameters and share the same solder pad layout. The EFM10X series is preferred for error-free vacuum pick-up and PCB assembly."

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25  $^{\circ}$ 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 (@ TA=25 °C unless otherwise noted)

RATINGS	SYMBOL	ESM101	ESM102	ESM103	ESM104	ESM105	ESM106	ESM107	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	300	400	600	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	105	140	210	280	420	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	150	200	300	400	600	Volts
Maximum Average Forward Rectified Current at T <sub>A</sub> = 55°C	Io	1.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	IFSM	30							Amps
Typical Junction Capacitance (Note 2)	Сл	15 10						pF	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150							٥C

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

CHARACTERISTICS		SYMBOL	ESM101 E	ESM102 ES	SM103	ESM104	ESM105	ESM106	ESM107	UNITS
Maximum Instantaneous Forward Voltage at 1.0A DC		VF	0.95			1.25		1.50	Volts	
Maximum DC Reverse Current at Rated DC Blocking Voltage	@T <sub>A</sub> = 25°C	- IR	5.0							
	@T <sub>A</sub> = 100°C		100							uAmps
Maximum Reverse Recovery Time (Note 1)		trr			3	35			50	nSec

NOTES : 1. Reverse Recovery Test Conditions: IF = 0.5A, IR = -1.0A, IRR = -0.25A

- 2. Measured at 1  $\mbox{MHz}$  and applied reverse voltage of 4.0 volts
- 3. "Fully ROHS compliant", "100% Sn plating (Pb-free)".

2007-4

### RATING AND CHARACTERISTICS CURVES (ESM101 THRU ESM107)

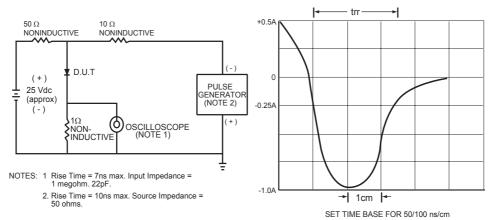
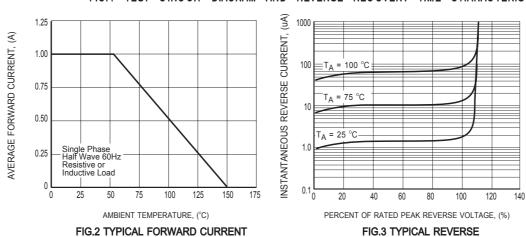


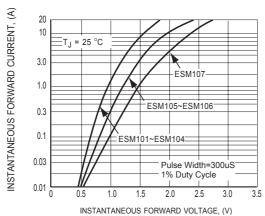
FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



**DERATING CURVE** 

**CHARACTERISTICS** 

## RATING AND CHARACTERISTICS CURVES (ESM101 THRU ESM107)



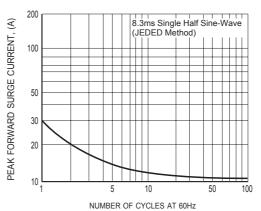
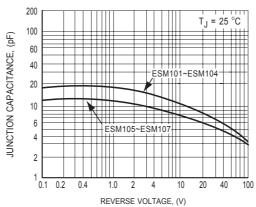


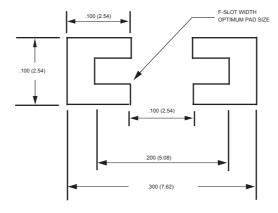
FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT





# **Mounting Pad Layout**



Dimensions in inches and (millimeters)

