

**SURFACE MOUNT GLASS PASSIVATED  
SUPER FAST SILICON RECTIFIER  
VOLTAGE RANGE 50 to 600 Volts CURRENT 3.0 Ampere**

**FEATURES**

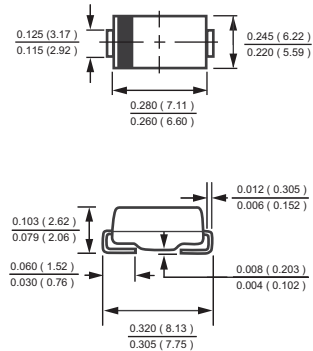
- \* Glass passivated device
- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Metallurgically bonded construction
- \* Mounting position: Any
- \* Weight: 0.24 gram
- \* P/N suffix V means AEC-Q101 qualified
- \* P/N suffix V means Halogen-free

**MECHANICAL DATA**

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



**DO-214AB**



Dimensions in inches and (millimeters)

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
Resistive or inductive load.

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

RATINGS	SYMBOL	EFM301	EFM302	EFM303	EFM304	EFM305	EFM306	EFM307	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	I <sub>O</sub>	3.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	125							Amps
Typical Current Square Time	I <sup>2</sup> T	64.8							A <sup>2</sup> S
Typical Thermal Resistance (Note 4)	R <sub>θJA</sub>	47			50				°C/W
	R <sub>θJL</sub>	12			15				
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	50			30				pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150							°C

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

CHARACTERISTICS	SYMBOL	EFM301	EFM202	EFM303	EFM304	EFM305	EFM306	EFM307	UNITS
Maximum Instantaneous Forward Voltage at 3.0ADC	V <sub>F</sub>	0.95			1.25		1.50		Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	I <sub>R</sub>	@T <sub>A</sub> = 25°C							μAmps
		@T <sub>A</sub> = 150°C							mAmps
Maximum Reverse Recovery Time (Note 1)	t <sub>rr</sub>	35						50	nSec

- NOTES : 1. Reverse Recovery Test Conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = -1.0A, I<sub>RR</sub> = -0.25A  
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts  
 3. "Fully ROHS compliant", "100% Sn plating (Pb-free)".  
 4. Thermal Resistance : Mounted on PCB.

## RATING AND CHARACTERISTICS CURVES ( EFM301 THRU EFM307 )

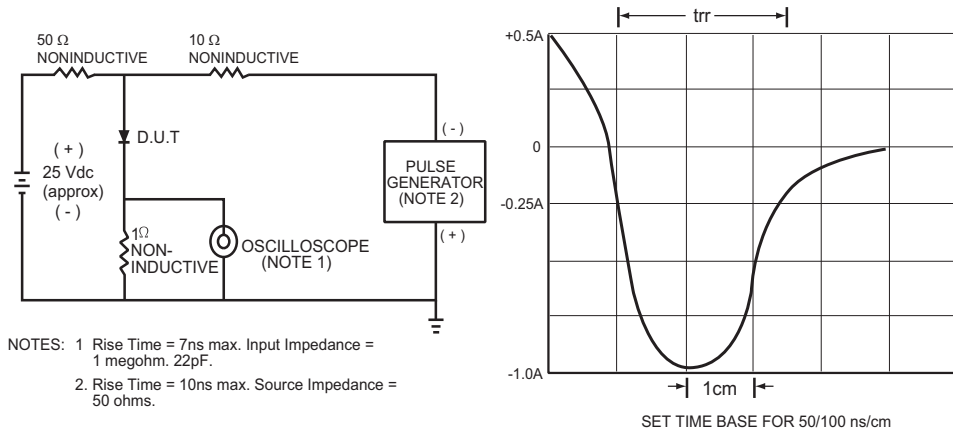


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

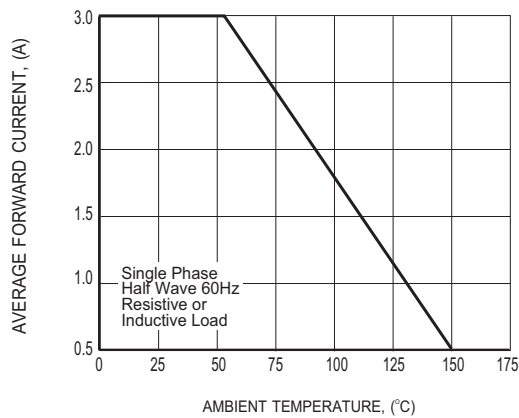


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

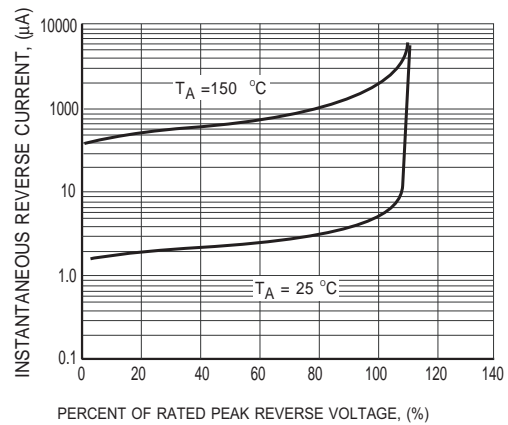


FIG.3 MAXIMUM REVERSE CHARACTERISTICS

## RATING AND CHARACTERISTICS CURVES ( EFM301 THRU EFM307 )

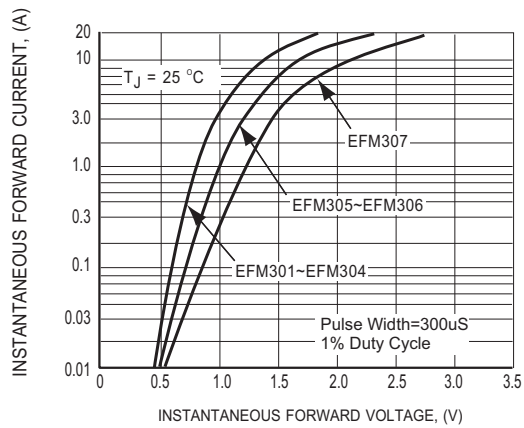


FIG.4 MAXIMUM INSTANTANEOUS FORWARD CHARACTERISTICS

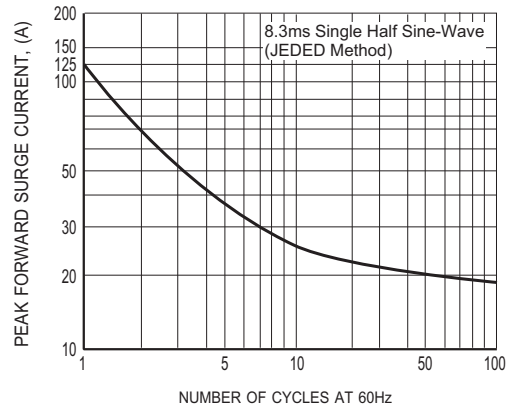


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

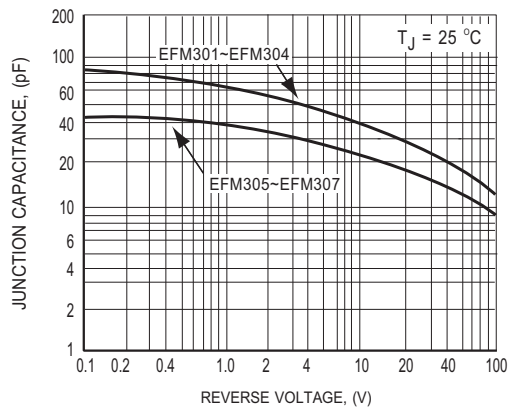
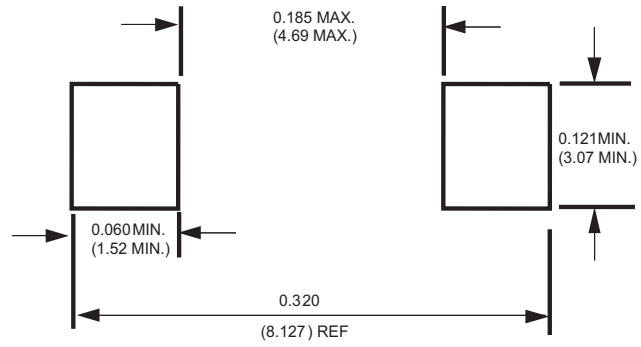


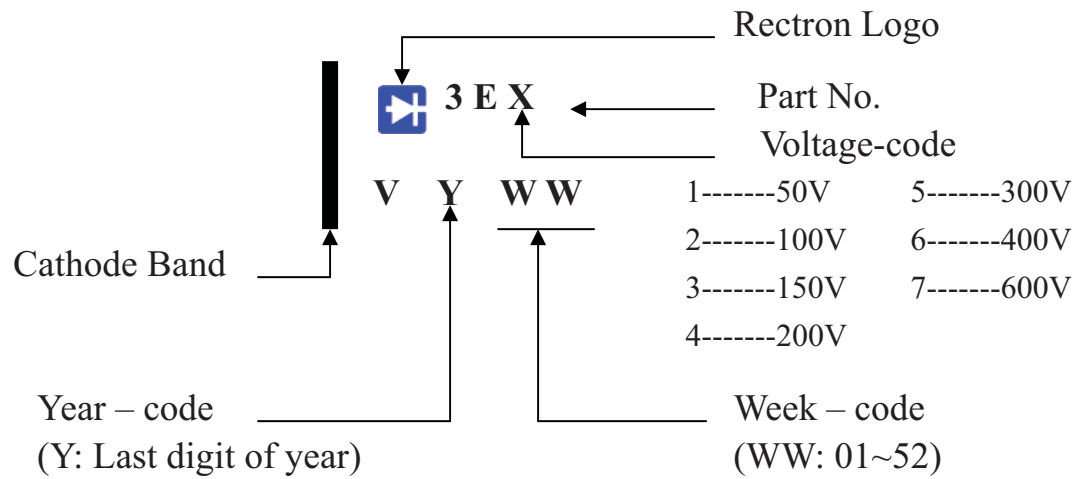
FIG.6 TYPICAL JUNCTION CAPACITANCE

## Mounting Pad Layout



Dimensions in inches and (millimeters)

## Marking Description



## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

### REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMC	-T	500	1,500	---	---	178	390*205*310	12,000	6.65
SMC	-W	3,000	3,000	---	---	330	360*355*360	24,000	11.50