



**FRONTIER  
ELECTRONICS CO., LTD.**

**EFM11M  
THRU  
EFM18M**

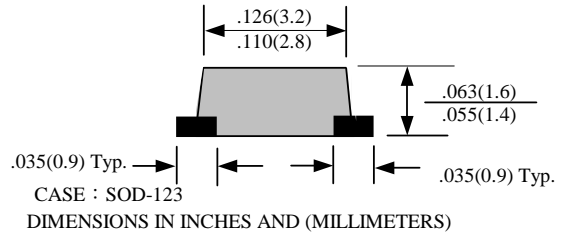
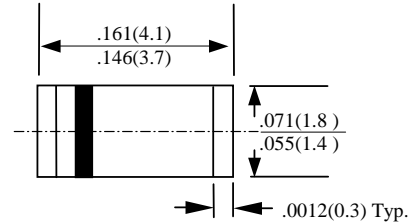
**1A SURFACE MOUNT FAST EFFICIENT RECOVERY RECTIFIERS**

**FEATURES**

- FOR SURFACE MOUNTED APPLICATIONS
- LOW PROFILE PACKAGE
- BUILT-IN STRAIN RELIEF
- EASY PICK AND PLACE
- PLASTIC MATERIAL USED CARRIES UNDERWRITERS  
LABORATORY CLASSIFICATION 94 V-0
- HIGH TEMPERATURE SOLDERING : 250°C/10 SECONDS AT  
TERMINALS

**MECHANICAL DATA**

- CASE : MOLDED PLASTIC
- TERMINALS : SOLDER PLATED
- POLARITY : INDICATED BY CATHODE BAND
- WEIGHT : 0.04 GRAMS



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%

RATINGS	SYMBOL	EFM11M	EFM12M	EFM14M	EFM15M	EFM16M	EFM18M	UNITS
MAXIMUM RECURRENT PEAK REVERSE VOLTAGE	$V_{RRM}$	50	100	200	300	400	600	V
MAXIMUM RMS VOLTAGE	$V_{RMS}$	35	70	140	210	280	420	V
MAXIMUM DC BLOCKING VOLTAGE	$V_{DC}$	50	100	200	300	400	600	V
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT AT $T_L=90^\circ\text{C}$	$I_O$	1.0						A
MAXIMUM OVERLOAD SURGE 8.3ms SINGLE HALF SINE-WAVE	$I_{FSM}$	30						A
TYPICAL JUNCTION CAPACITANCE (NOTE 1)	$C_J$	15			10			PF
TYPICAL THERMAL RESISTANCE (NOTE 2)	$R_{\theta JL}$	20						°C/W
STORAGE TEMPERATURE RANGE	$T_{STG}$	-55 TO + 150						°C
OPERATING TEMPERATURE RANGE	$T_{OP}$	-55 TO + 125						°C

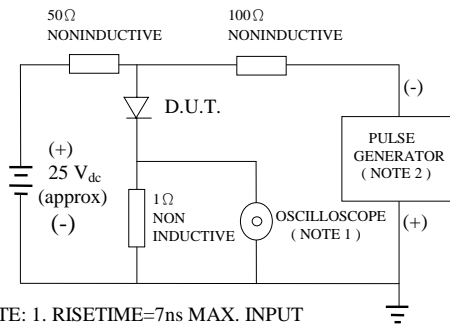
**ELECTRICAL CHARACTERISTICS ( $A_T T_A = 25^\circ\text{C}$  UNLESS OTHERWISE NOTED)**

CHARACTERISTICS	SYMBOL	EFM11M	EFM12M	EFM14M	EFM15M	EFM16M	EFM18M	UNITS
MAXIMUM FORWARD VOLTAGE AT 1.0A AND 25°C	$V_F$	0.98			1.25		1.75	V
MAXIMUM REVERSE CURRENT AT 25°C	$I_R$	10						μA
MAXIMUM REVERSE RECOVERY TIME (NOTE3)	$T_{RR}$	25						nS
MARKING		E1	E2	E4	E5	E6	E8	

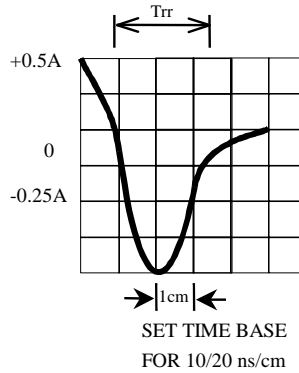
- NOTE : 1. MEASURED AT 1 MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 VOLTS  
2. THERMAL RESISTANCE FROM JUNCTION TO AMBIENT AND JUNCTION TO LEAD P.C.B. MOUNTED ON  
0.3×0.3"(8.0×8.0mm) COPPER PAD AREAS  
3. REVERSE RECOVERY TEST CONDITIONS:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$

# RATINGS AND CHARACTERISTIC CURVE EFM11M THRU EFM18M

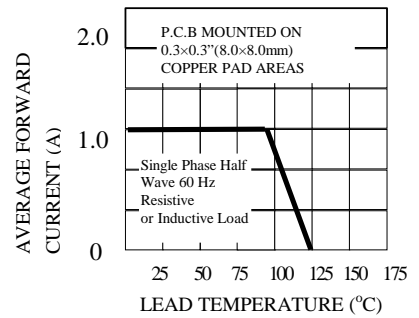
**FIG. 1-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



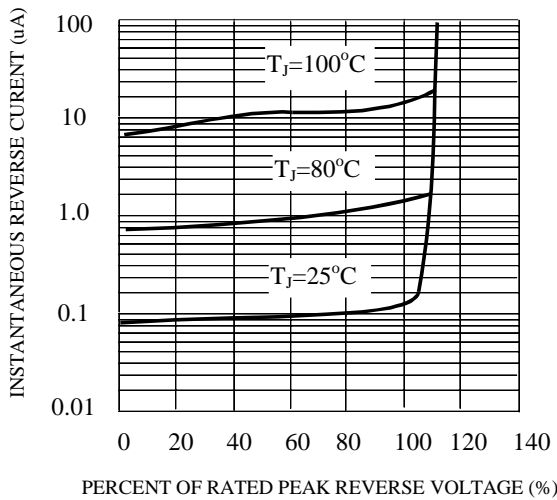
NOTE: 1. RISE TIME=7ns MAX. INPUT IMPEDANCE=1 MEGOHM 22PF  
 2. RISE TIME =10ns MAX. SOURCE IMPEDANCE=50OHMS



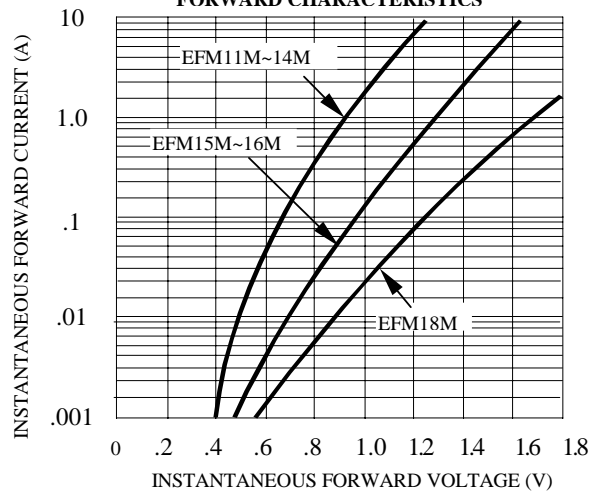
**FIG. 2-TYPICAL FORWARD CURRENT DERATING CURVE**



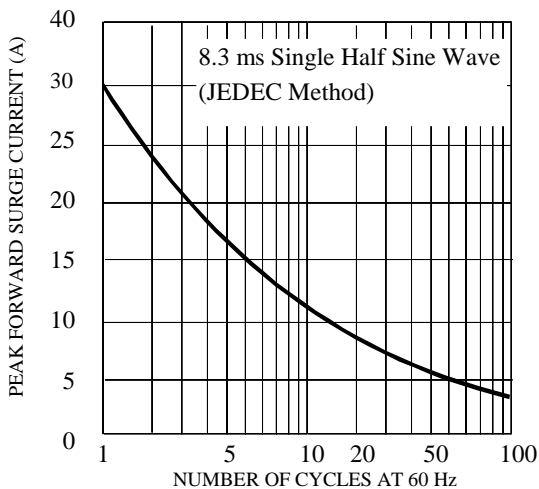
**FIG. 3-TYPICAL REVERSE CHARACTERISTICS**



**FIG. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG. 5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG. 6-TYPICAL JUNCTION CAPACITANCE**

