

■ **FEATURES**

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

■ **TYPICAL APPLICATIONS**

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.

■ **MECHANICAL DATA**

- **Package:** SMAF  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ **MAXIMUM RATINGS** ( $T_a=25^{\circ}\text{C}$  Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	E1AFS	E1BFS	E1CFS	E1DFS	E1FFS	E1GFS	E1HFS	E1JFS
Device marking code			E1AFS	E1BFS	E1CFS	E1DFS	E1FFS	E1GFS	E1HFS	E1JFS
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	V	50	100	150	200	300	400	500	600
Maximum RMS Voltage	$V_{RMS}$	V	35	70	105	140	210	280	350	420
Maximum DC blocking Voltage	$V_{DC}$	V	50	100	150	200	300	400	500	600
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	$I_o$	A	1.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_j=25^{\circ}\text{C}$	$I_{FSM}$	A	30							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, $T_j=25^{\circ}\text{C}$			60							
Current squared time @1ms≤t≤8.3ms $T_j=25^{\circ}\text{C}$ , Rating of per diode	$I^2t$	A <sup>2</sup> s	3.735							
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	$C_j$	pF	15				10		7	
Storage temperature	$T_{stg}$	°C	-55 ~ +150							
Junction temperature	$T_j$	°C	-55 ~ +150							

■ **ELECTRICAL CHARACTERISTICS** ( $T_a=25^{\circ}\text{C}$  Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	E1AFS	E1BFS	E1CFS	E1DFS	E1FFS	E1GFS	E1HFS	E1JFS
Maximum instantaneous forward voltage drop per diode	$V_F$	V	$I_{FM}=1.0A$	1.0				1.3		1.7	
Maximum reverse recovery time	$t_r$	ns	$I_F=0.5A, I_R=1.0A, I_r=0.25A$	35							
Maximum DC reverse current at rated DC blocking voltage per diode	$I_R$	μA	$T_j=25^{\circ}\text{C}$	5.0							
			$T_j=125^{\circ}\text{C}$	100							

■ **THERMAL CHARACTERISTICS** ( $T_a=25^{\circ}\text{C}$  Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	E1AFS	E1BFS	E1CFS	E1DFS	E1FFS	E1GFS	E1HFS	E1JFS
Typical thermal resistance	R $\theta$ J-A	$^{\circ}\text{C}/\text{W}$	65 <sup>1)</sup>							
	R $\theta$ J-L		25 <sup>1)</sup>							
	R $\theta$ J-C		20 <sup>1)</sup>							

Note:

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

■ **CHARACTERISTICS (TYPICAL)**

FIG1: Io-TL Curve

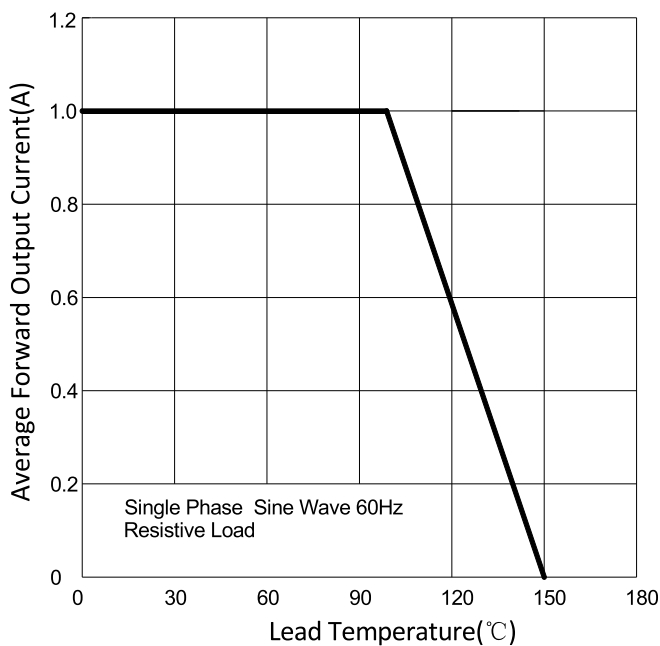


FIG2: Surge Forward Current Capability

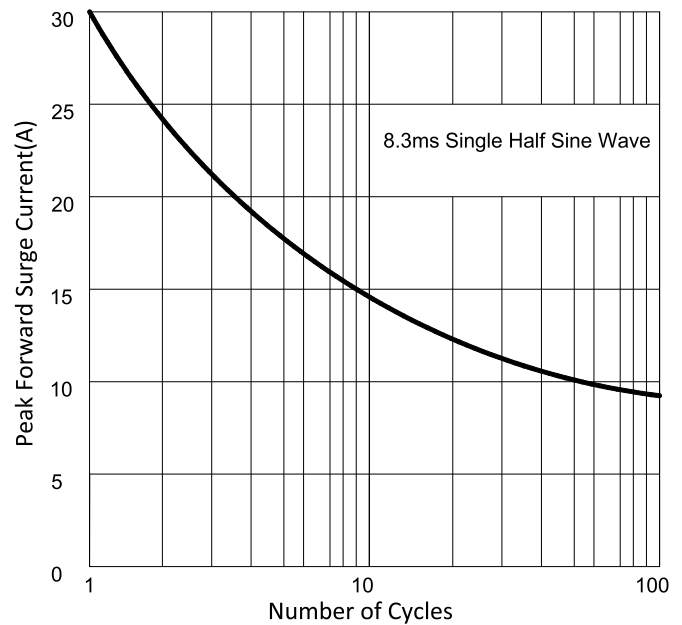


FIG3: Typical Forward Voltage

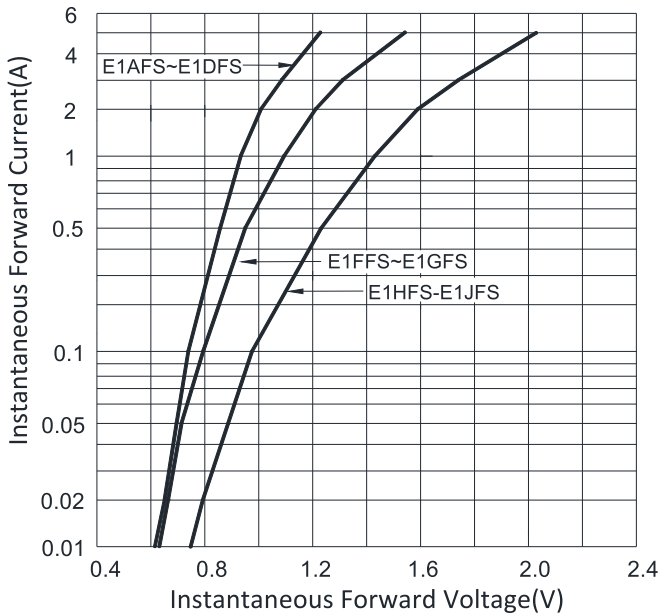


FIG4: Typical Reverse Characteristics

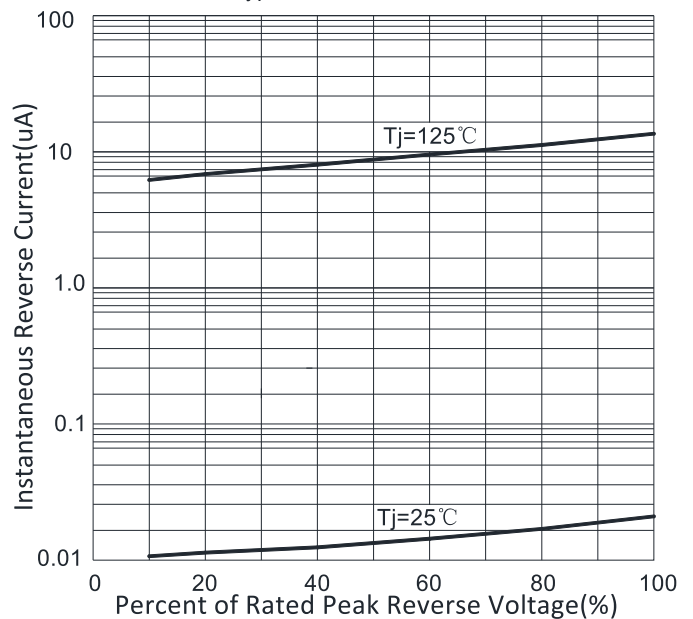
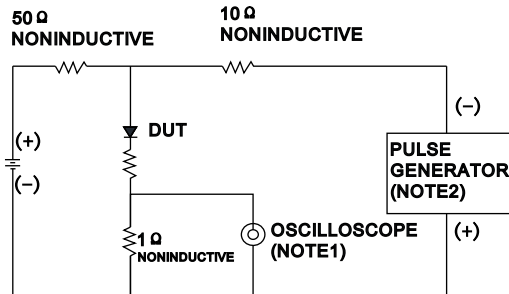
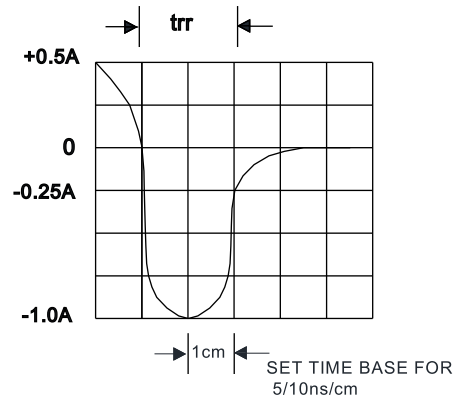


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



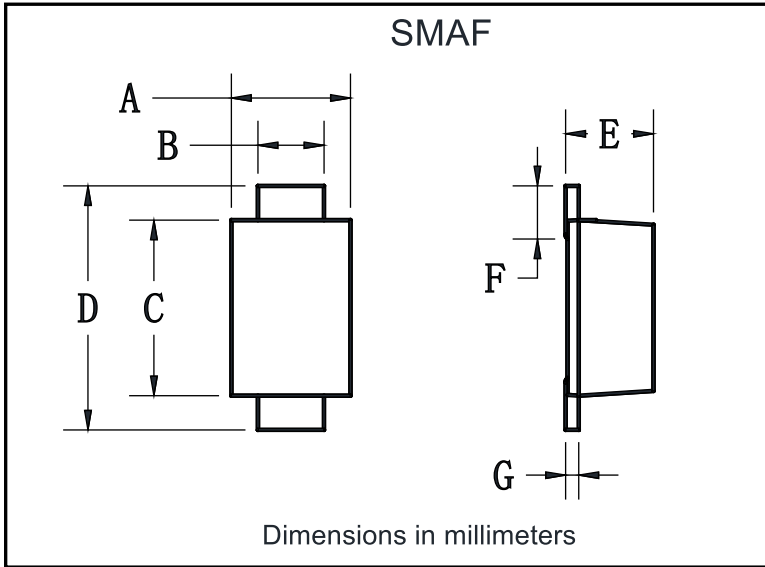
**NOTES:**  
 1. Rise Time=7ns max .Input Impedance=1M  $\Omega$  22pf  
 2. Rise Time=10ns max. Source Impedance=50  $\Omega$



■ **PACKAGING INFORMATION**

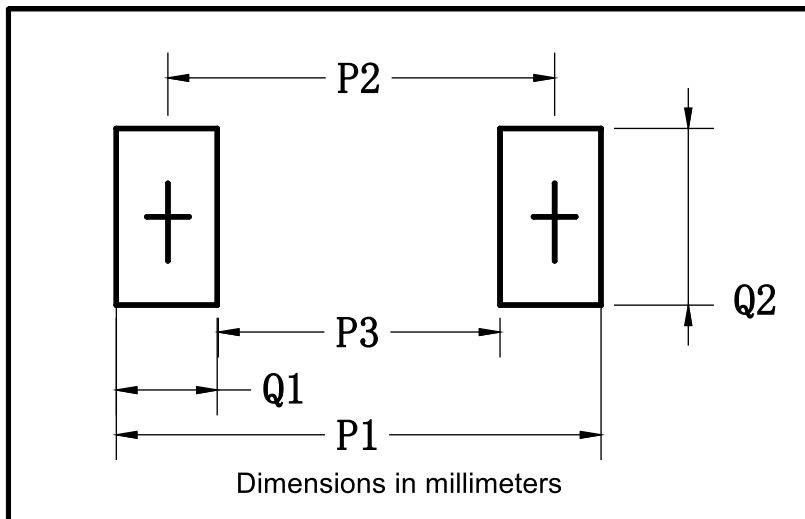
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
E1AFS-E1JFS	F1	Approximate 0.034	3000	24000	96000	7" reel
E1AFS-E1JFS	F2	Approximate 0.034	10000	20000	160000	13" reel
E1AFS-E1JFS	F3	Approximate 0.034	10000	20000	120000	13" reel
E1AFS-E1JFS	F4	Approximate 0.034	7500	15000	120000	13" reel

■ **OUTLINE DIMENSIONS**



SMAF		
Dim	Min	Max
A	2.40	2.80
B	1.35	1.45
C	3.40	3.60
D	4.40	4.80
E	1.05	1.25
F	0.50	1.00
G	0.15	0.22

■ **SUGGESTED PAD LAYOUT**



SMAF	
Dim	Millimeters
P1	6.50
P2	4.00
P3	1.50
Q1	2.50
Q2	1.70