

Pb Free Plating Product

## FR10A thru FR10M



10.0 Ampere Surface Mount Round Lead Fast Recovery Rectifier Diodes

### Features

- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Ideal for automated placement
- ✧ Easy pick and place
- ✧ Fast recovery time for high efficiency
- ✧ Plastic material used carries Underwriters Laboratory Classification 94V-0

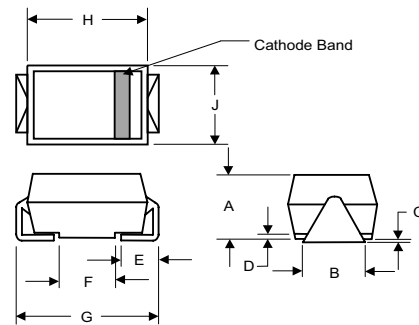


### Mechanical Data

- ✧ Cases: HSMC(Round Lead)/SME Pkg
- ✧ Terminals: Pure tin plated, lead free.
- ✧ Polarity: Indicated by cathode band
- ✧ Packing: Tape&Reel
- ✧ Weight: 0.093 gram approximately

### OUTLINE

Unit:inch(millimeter)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.200	0.214	5.08	5.43	
B	0.177	0.203	4.70	5.30	
C	0.002	0.005	0.05	0.13	
D	—	0.02	—	0.51	
E	0.047	0.056	1.20	1.42	
F	0.168	0.179	4.27	4.55	
G	0.309	0.322	7.85	8.18	
H	0.239	0.243	6.08	6.18	
J	0.234	0.240	5.95	6.10	

**HSMC/SMC-W/SMCE**

## Maximum Ratings and Electrical Characteristics

Rating at 25 ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	FS10A	FS10B	FS10D	FS10G	FS10J	FS10K	FS10M	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current See Fig. 1	$I_{(AV)}$	10.0							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )	$I_{FSM}$	300							A
Maximum Instantaneous Forward Voltage @ 8.0A	$V_F$	1.3							V
Maximum DC Reverse Current @ $T_A=25^{\circ}C$ at Rated DC Blocking Voltage @ $T_A=100^{\circ}C$	$I_R$	10 50							uA uA
Maximum Reverse Recovery Time ( Note 1 )	$T_{rr}$	150			250	500		nS	
Typical Junction Capacitance ( Note 2 )	$C_j$	45			30		pF		
Maximum Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	75 20							/W
Operating Temperature Range	$T_J$	-55 to +150							
Storage Temperature Range	$T_{STG}$	-55 to +150							

- Notes:
1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$
  2. Measured at 1 MHz and Applied  $V_R=4.0$  Volts
  3. Units Mounted on P.C.B. 0.4" x 0.4" (10mm x 10mm) Pad Areas

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

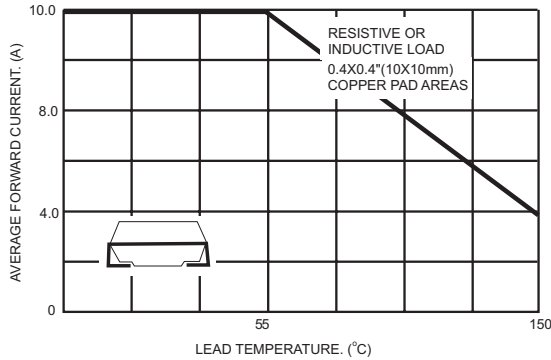


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

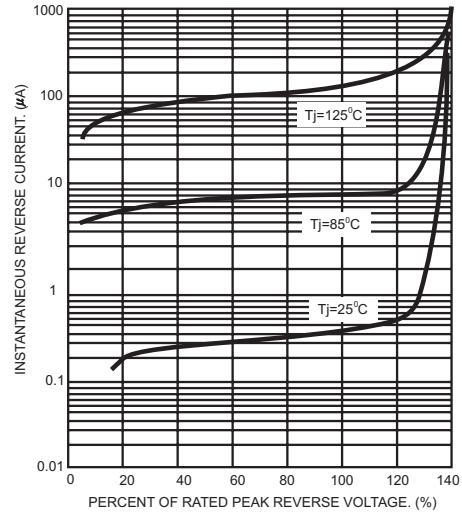


FIG. 3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

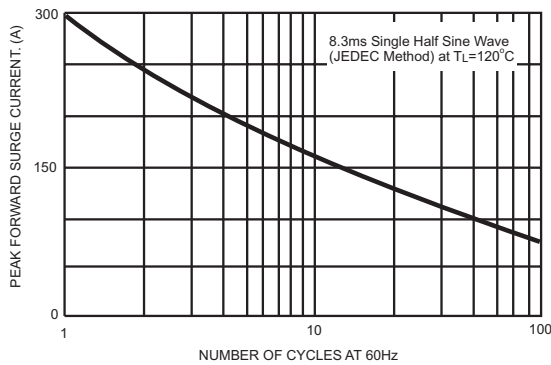


FIG. 5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

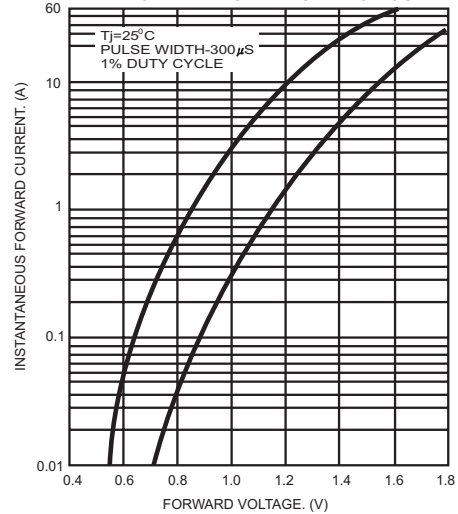


FIG. 4- TYPICAL JUNCTION CAPACITANCE

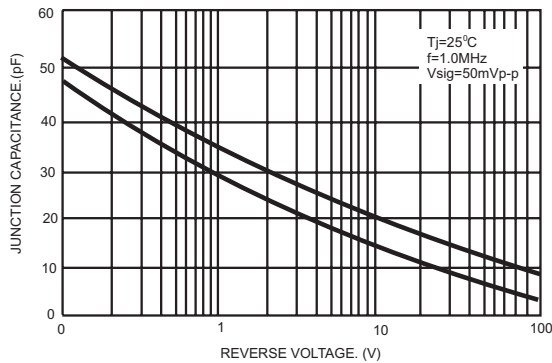
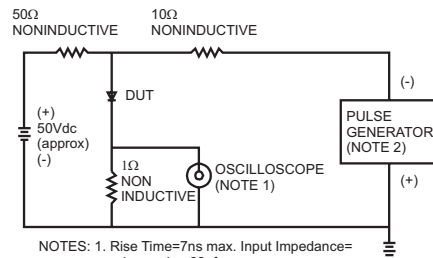


FIG. 6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance= 50 ohms

