



# FS1A THRU FS1M

## 1.0 AMP FAST RECOVERY SILICON RECTIFIER



### FEATURES

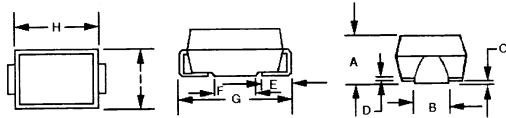
- \* For surface mount applications
- \* Extremely low thermal resistance
- \* Easy pick and place
- \* High temp soldering: 250°C for 10 seconds at terminals
- \* Superfast recovery times for high efficiency

### MECHANICAL DATA

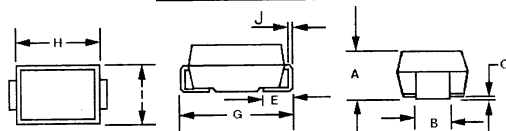
- \* Case: Molded plastic
- \* Terminals: Solder plated
- \* Polarity: Indicated by cathode band
- \* Standard packaging: 12mm tape (ELA STD RS - 481)
- \* Weight: 0.091 gram (SMA/DO-214AC \*)  
0.064 gram ((SMA/DO-214AC)

VOLTAGE RANGE  
50 to 1000 Volts

### SMA/DO-214AC \*



### SMA/DO-214AC



### DIMENSIONS

	SMA/DO - 214AC *		SMA/DO - 214AC	
	inches	mm	inches	mm
A	.078 to .115(L)	1.98 to 2.29(L)	.078 to .090	1.98 to 2.29
A	.110 to .117(H)	2.80 to 2.98(H)		
B	.067 to .088	1.7 to 2.24	0.052 to .058	1.32 to 1.47
C	.008MAX	0.20MAX	.008MAX	.20MAX
D	.02MAX	.51MAX		
E	.030 to .060	.76 to 1.52	.030 to .050	.76 to 1.27
F	.067 to .094	1.65 to 2.39		
G	.204 to .220	5.21 to 5.59	.194 to .208	4.93 to 5.28
H	.160 to .179	4.06 to 4.55	.157 to .177	3.99 to 4.50
I	.101 to .112	2.56 to 2.85	.100 to .110	2.54 to 2.79
J			.006 to .012	.152 to .305

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum thermal resistance; 15°C/W Junction to lead  
Rating at 25°C ambient temperature unless otherwise specified.

TYPE NUMBER	SYMBOLS	FS1A	FS1B	FS1D	FS1G	FS1J	FS1K	FS1M	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 $T_L = 75^\circ\text{C}$	$I_{F(AV)}$					1.0				A
Peak Forward Surge Current, (8.3 ms half sine)	$I_{FSM}$					30				A
Maximum Instantaneous Forward Voltage @ 1.0A (Note 1)	$V_F$					1.3				V
Maximum D. C Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated D. C. Blocking Voltage @ $T_A = 125^\circ\text{C}$	$I_R$					5 200				$\mu\text{A}$
Maximum Reverse Recovery time (Note 2)	$T_{rr}$	150				250	500			nS
Typical Junction Capacitance (Note 3)	$C_J$					10				pF
Operating and Storage Temperature Range	$T_J, T_{STG}$					- 50 to + 150			$^\circ\text{C}$	

- NOTES: 1. Pulse test: Pulse width 300 $\mu\text{sec}$ , 1% duty cycle.  
2. Reverse Recovery Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .  
3. Measured at 1 MHz and applied  $V_R = 4.0$  volts D. C.

## RATINGS AND CHARACTERISTIC CURVES (FS1A THRU FS1M)

Figure 1 – Typical Forward Characteristics

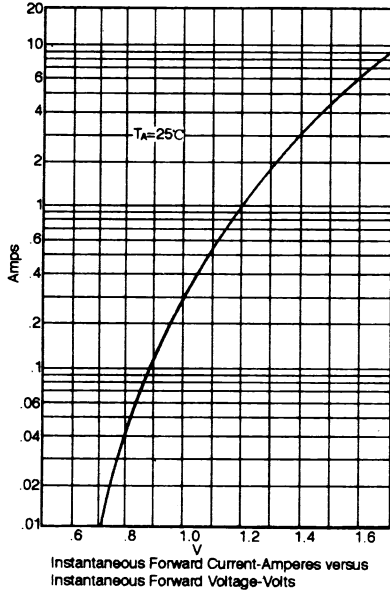


Figure 2 – Forward Current Derating Curve

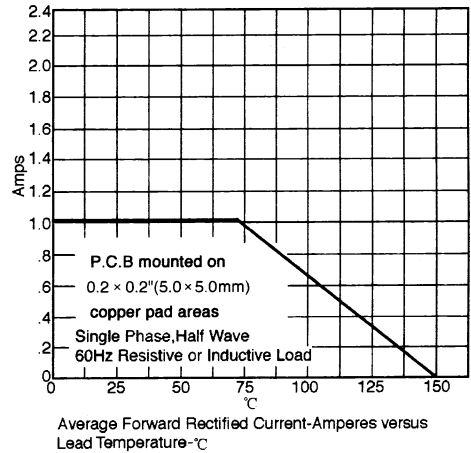
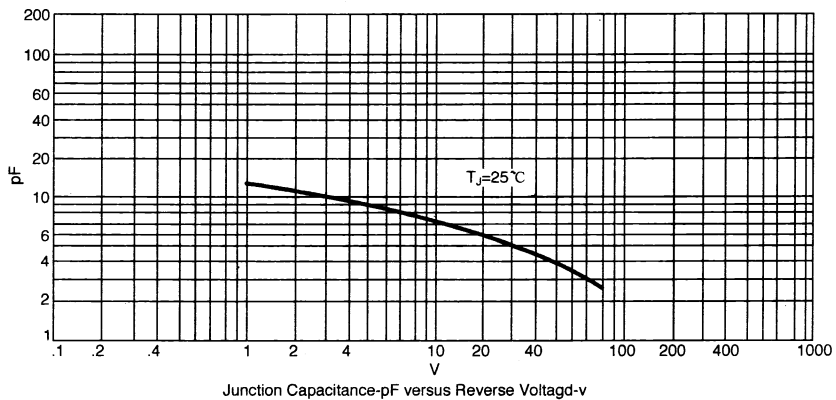


Figure 3 – Typical Junction Capacitance



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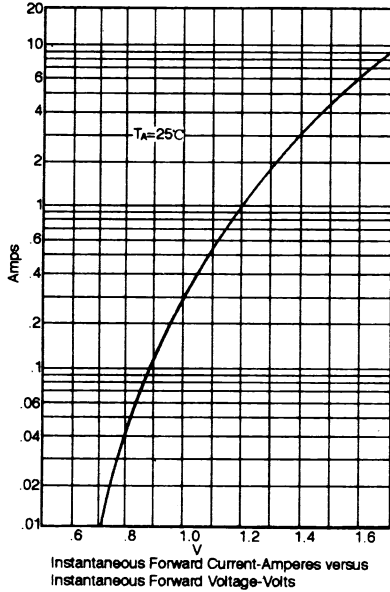


Figure 2 – Forward Current Derating Curve

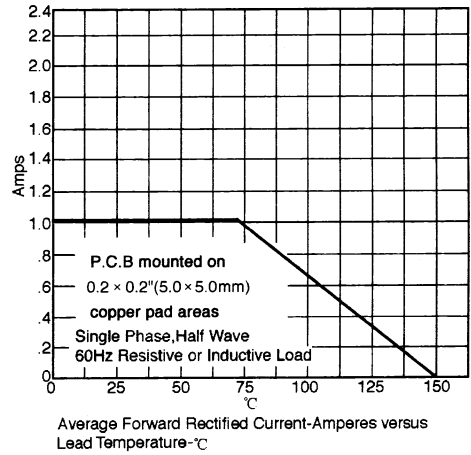
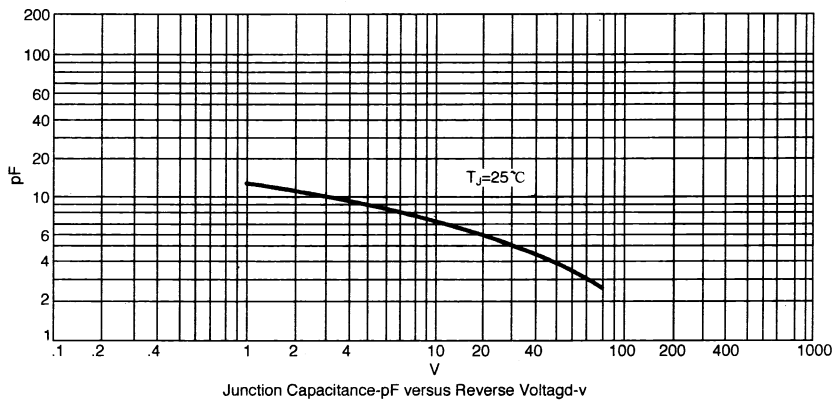


Figure 3 – Typical Junction Capacitance



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Figure 4 – Maximum Non-repetitive forward Surge Current

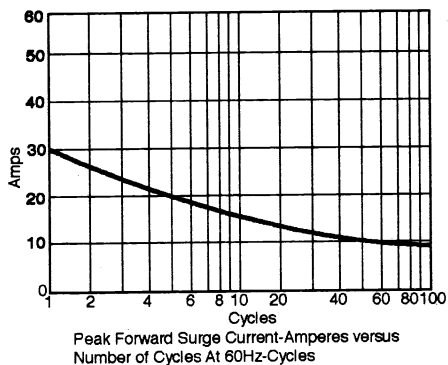
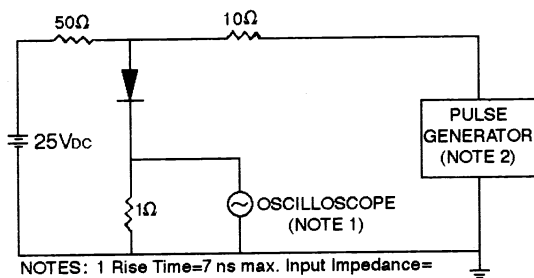
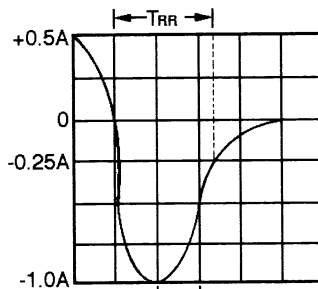


Figure 5 – Reverse Recovery Time Characteristic And Test Circuit Diagram



- NOTES: 1 Rise Time=7 ns max. Input Impedance= 1 megohm 22pF  
 2 Rise Time=10ns max. Source Impedance= 50 ohms  
 3 Resistors are non-inductive



SET TIME BASE FOR 50/200ns/cm

### SUGGESTED SOLDER PAD LAYOUT

