

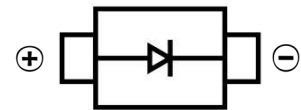
## SUPER FAST RECOVERY RECTIFIER DIODE

### FEATURES

- Glass Passivated Die Construction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- Super fast recovery time
- Surface Mount device



### SMA



### MECHANICAL DATA

- Case: SMA(DO-214AC)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.065 grams (approximate)

### MAXIMUM RATINGS AND CHARACTERISTICS( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	ES2A	ES2B	ES2D	ES2G	ES2J	ES2K	ES2M	Unit
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
DC Blocking Reverse Voltage	$V_R$	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Maximum Average Forward Rectified Current	$I_F$	2							A
Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	$I_{FSM}$	50							A
Reverse Recovery Time (@ $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ , $I_{RR}=0.25\text{A}$ )	$t_{rr}$	50			60		100	nS	
Thermal Resistance From Junction To Lead	$R_{\theta JL}$	20							$^\circ\text{C/W}$
Junction Temperature	$T_J$	-55 ~+150							$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~+150							$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	ES2A	ES2B	ES2D	ES2G	ES2J	ES2K	ES2M	Unit	Conditions
Maximum Forward voltage	$V_F$	0.975			1.35		1.60	V	$I_F=2\text{A}$	
Maximum Reverse current	$I_R$	5							$\mu\text{A}$	$V=V_R@T_A=25^\circ\text{C}$
Maximum Reverse current	$I_R$	150							$\mu\text{A}$	$V=V_R@T_A=100^\circ\text{C}$
Type Diode capacitance	$C_D$	25							pF	$V_R=4V_{DC}, f=1\text{MHz}$

\*Pulse test: Pulse width 200  $\mu\text{s}$  , Duty cycle 2%

**SUPER FAST RECOVERY RECTIFIER DIODE**

**Typical Characteristics**

Figure 1 Typical Forward Characteristics

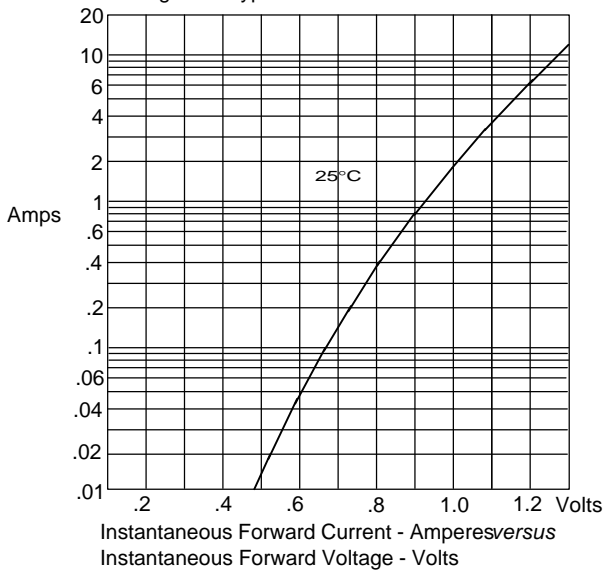


Figure 2 Forward Derating Curve

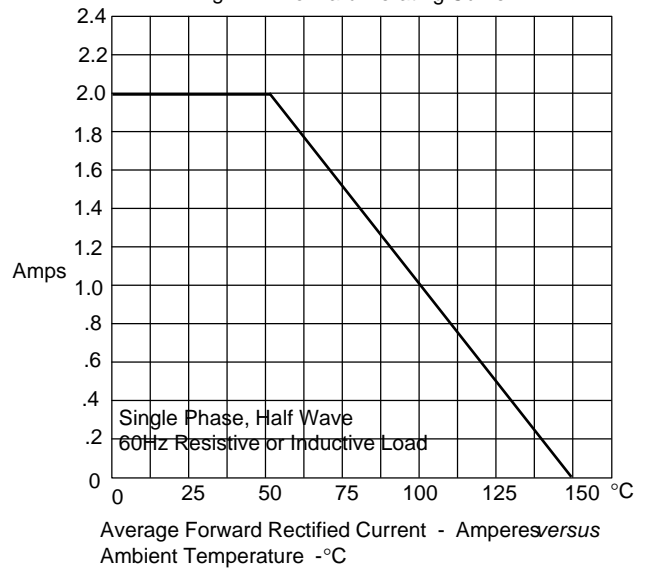


Figure 3 Junction Capacitance

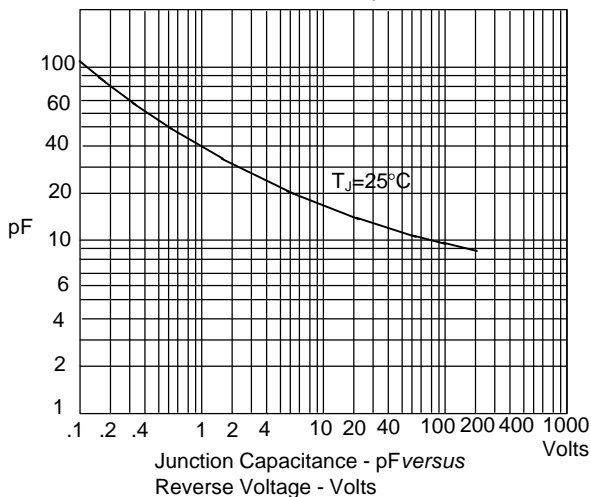


Figure 4 Peak Forward Surge Current

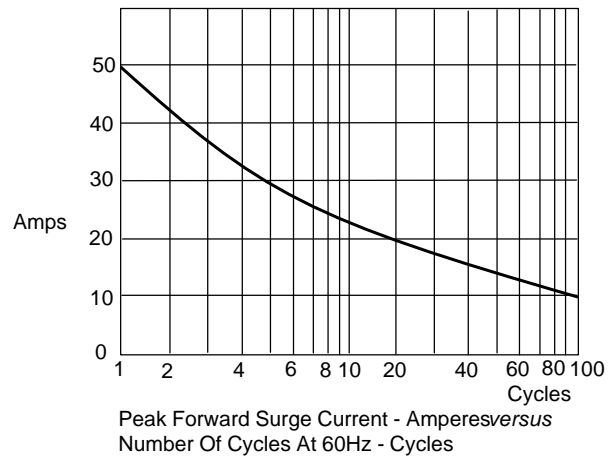
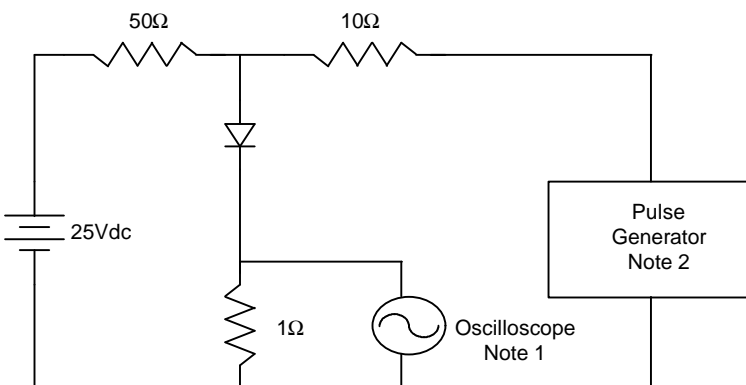


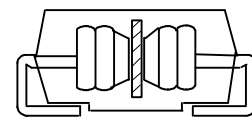
Figure 6 Reverse Recovery Time Characteristic And Test Circuit Diagram



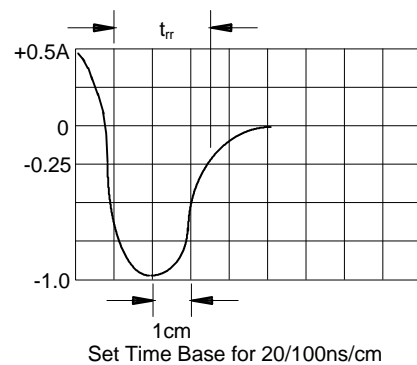
Notes:

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

Figure 5 New SMB Assembly

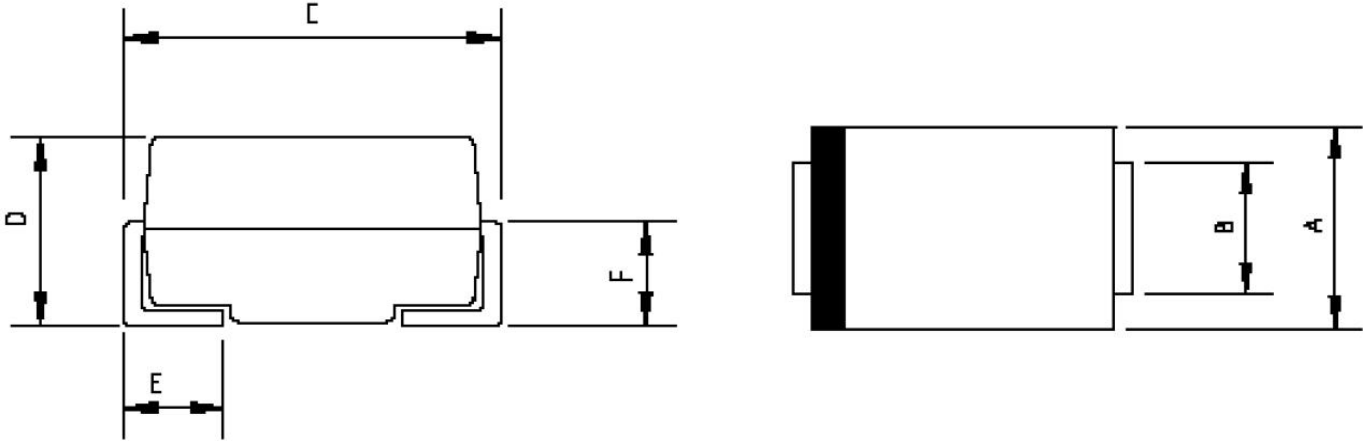


Round Lead Process



**SUPER FAST RECOVERY RECTIFIER DIODE**

**SMA Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.80	0.086	0.110
B	1.30	1.70	0.051	0.067
C	4.70	5.30	0.185	0.209
D	1.70	2.55	0.067	0.100
E	0.90	1.50	0.035	0.059
F	0.90	1.50	0.035	0.059

**SMA Suggested Pad Layout**



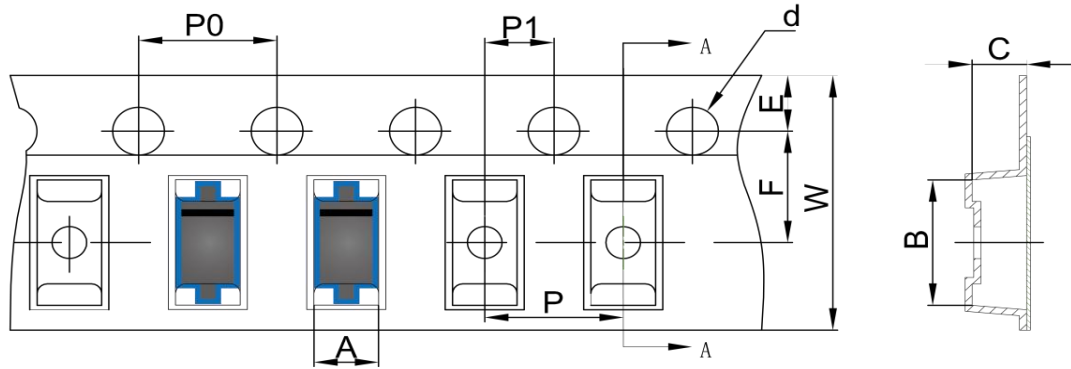
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

**SUPER FAST RECOVERY RECTIFIER DIODE**

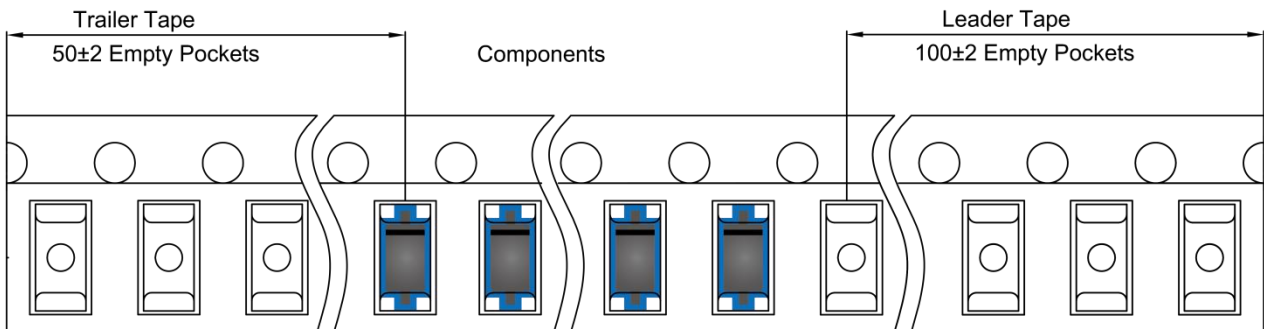
**SMA Tape and Reel**

**SMA Embossed Carrier Tape**

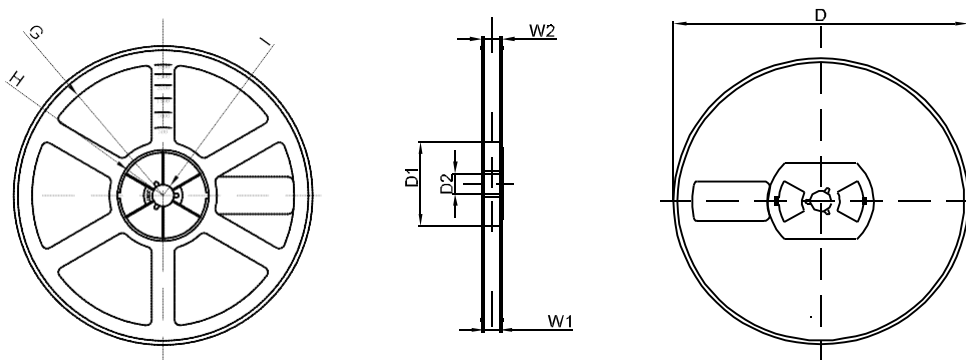


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMA	2.89	5.35	2.68	Ø1.50	1.75	5.50	4.00	4.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

**SMA Tape Leader and Trailer**



**SMA Reel**



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1

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