

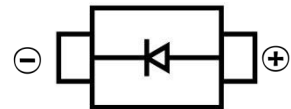
## SUPER FAST RECOVERY RECTIFIER DIODE

### FEATURES

- Glass passivated junction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- Super fast recovery time
- Surface Mount device



### SMC



### MECHANICAL DATA

- Case: SMC(DO-214AB)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.21 grams (approximate)

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

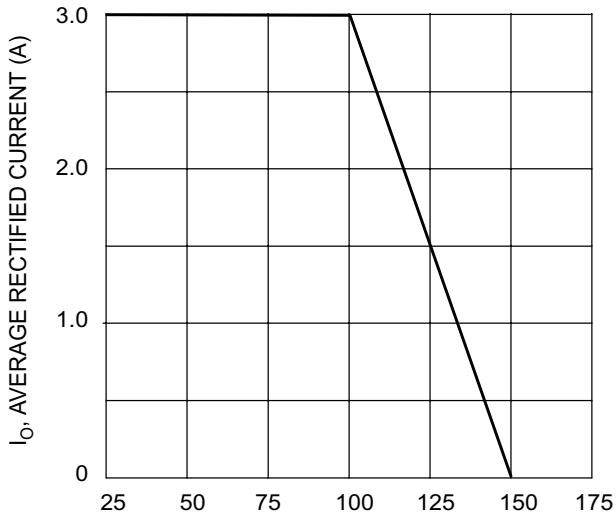
Parameter	Symbol	Value	Unit
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	400	V
DC Blocking Reverse Voltage	$V_R$	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	280	V
Maximum Average Forward Rectified Current	$I_F$	3	A
Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	$I_{FSM}$	100	A
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	20	$^\circ\text{C/W}$
Reverse Recovery Time(@ $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ , $I_{RR}=0.25\text{A}$ )	$t_{rr}$	35	nS
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)

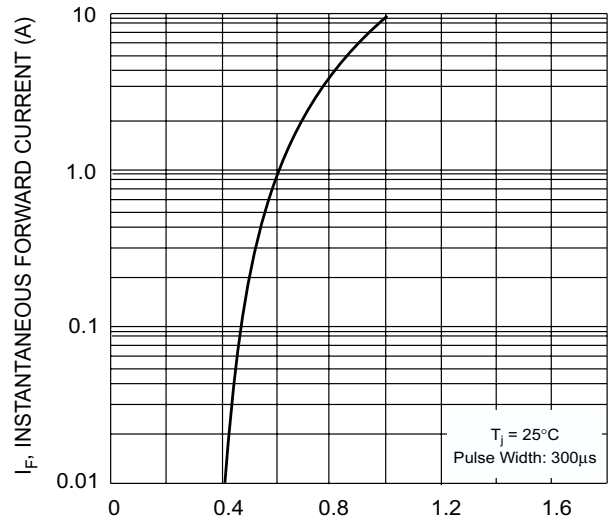
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Forward voltage	$V_F$			1.30	V	$I_F=3\text{A}$
Reverse current @ $T_A=25^\circ\text{C}$	$I_R$			10	$\mu\text{A}$	$V_R=400\text{V}$
Reverse current @ $T_A=125^\circ\text{C}$	$I_R$			500	$\mu\text{A}$	$V_R=400\text{V}$
Diode capacitance	$C_D$		40		pF	$V_R=4\text{V}, f=1\text{MHz}$

**SUPER FAST RECOVERY RECTIFIER DIODE**

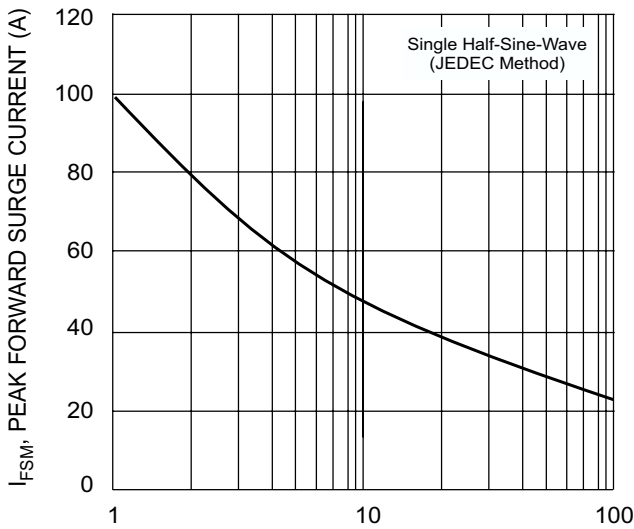
**Typical Characteristics**



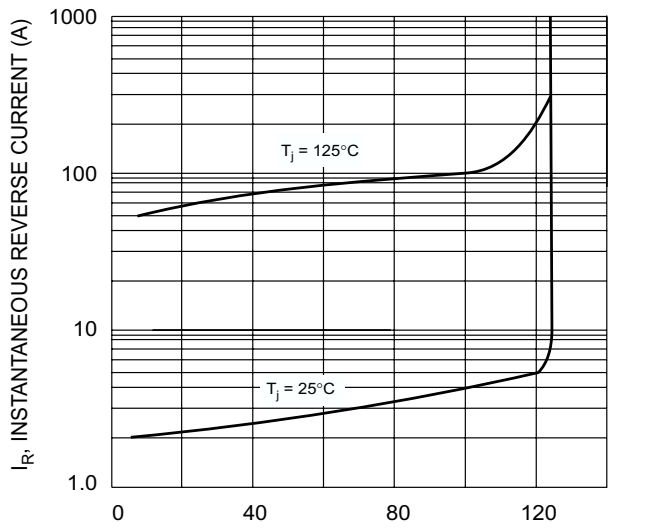
$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



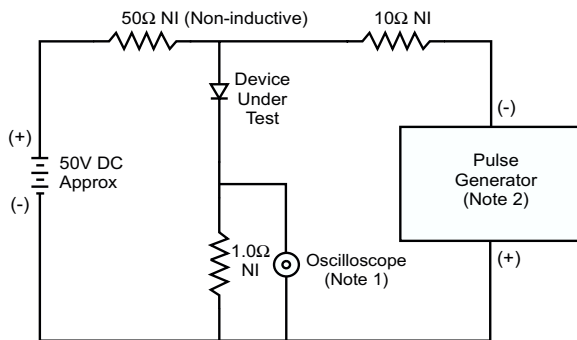
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



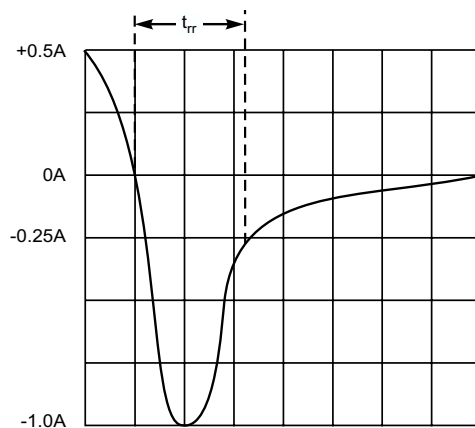
NUMBER OF CYCLES AT 60Hz  
Fig. 3 Surge Current Derating Curve



PERCENT OF RATED PEAK REVERSE VOLTAGE (%)  
Fig. 4 Typical Reverse Characteristics



Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50Ω.

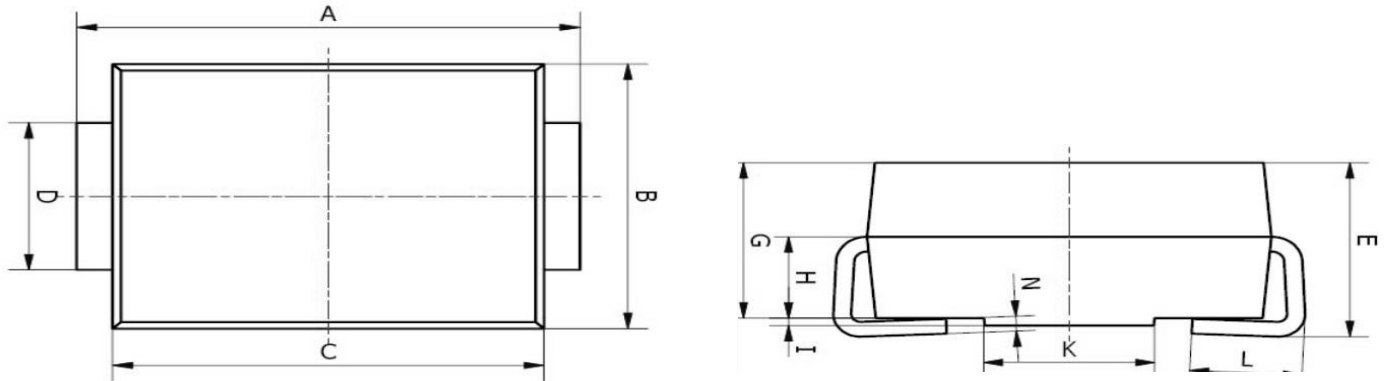


Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

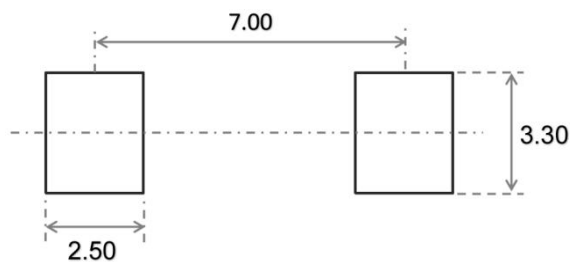
**SUPER FAST RECOVERY RECTIFIER DIODE**

**SMC Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	7.75	8.13	0.305	0.320
B	5.59	6.22	0.220	0.245
C	6.60	7.11	0.260	0.280
D	2.75	3.25	0.108	0.128
E	2.25	2.82	0.089	0.111
G	2.00	2.62	0.079	0.103
H	1.26	1.56	0.050	0.061
I	0.05	0.15	0.002	0.006
K	4.30	6.00	0.169	0.236
L	1.25	1.75	0.049	0.069
N	0.10	0.30	0.004	0.012

**SMC Suggested Pad Layout**



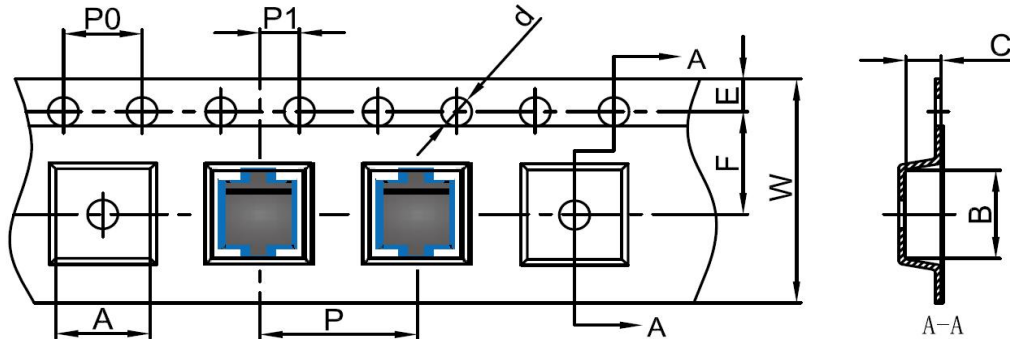
**Note:**

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**

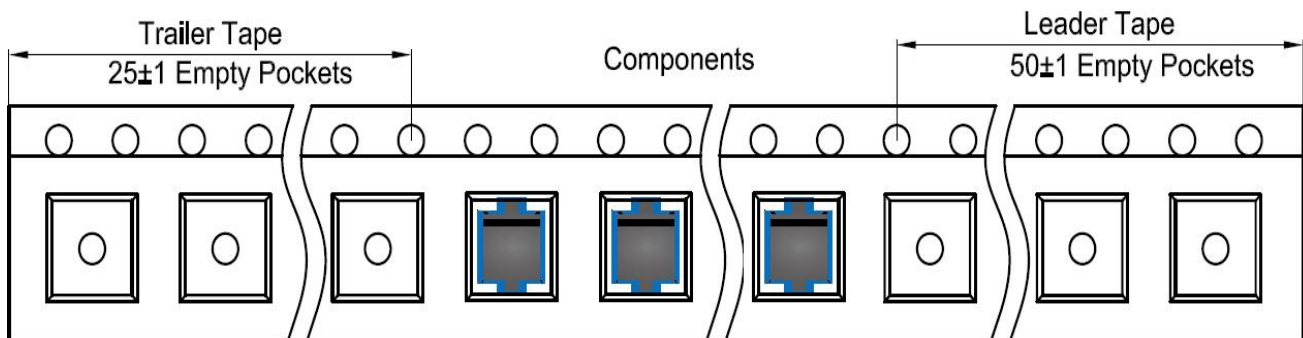
**SMC Tape and Reel**

**SMC Embossed Carrier Tape**

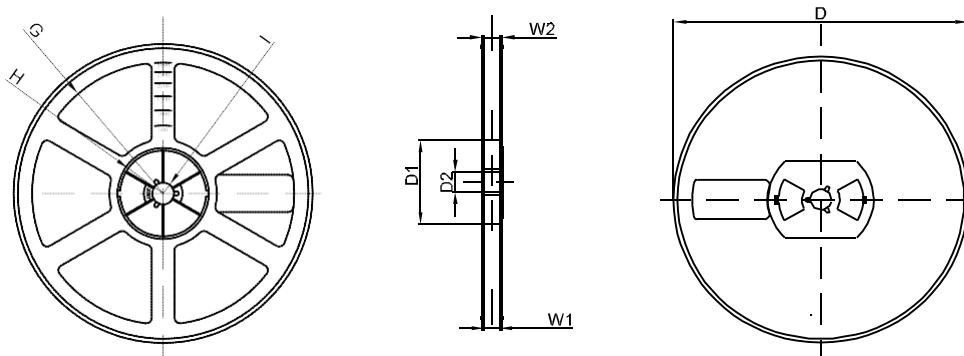


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMC	6.3	8.25	2.90	Ø1.55	1.75	7.50	4.00	8.00	2.00	16.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

**SMC Tape Leader and Trailer**



**SMC Reel**



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330	100	21	R165	R50	R6.50	16.4	21.00
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1