

SMCG Plastic-Encapsulate Diodes

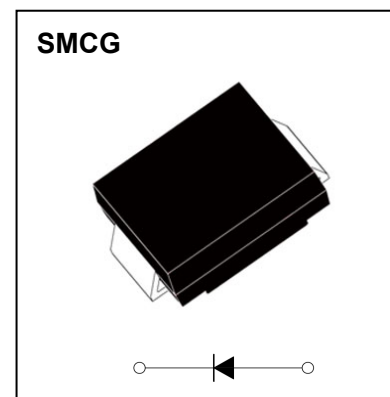
Super Fast Recovery Rectifier Diode

Features

- I_O 5A
- V_{RRM} 1000V
- Low forward voltage drop
- High surge current capability
- Glass passivated chip junction

Mechical Data

- Case: JEDEC DO-214AB molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Color band denotes cathode end



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Test Conditions	ES5M
Repetitive Peak Reverse Voltage	V_{RRM}	V		1000
Maximum RMS Voltage	V_{RMS}	V		700
Maximum DC blocking Voltage	V_{DC}	V		1000
Average Forward Current	$I_{F(AV)}$	A	60HZ Half-sine wave, Resistance load	5.0
Surge(Non-repetitive)Forward Current	I_{FSM}	A	60Hz Half-sine wave ,1 cycle , $T_a=25^{\circ}C$	100
Junction Temperature	T_J	$^{\circ}C$		-55~+150
Storage Temperature	T_{STG}	$^{\circ}C$		-55 ~ +150

Electrical Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

Item	Symbol	Unit	Test Condition		ES5M
Peak Forward Voltage	V_F	V	$I_F=5.0A$		3.2
Maximum reverse recovery time	t_{rr}	ns	$I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$		35
Peak Reverse Current	I_{RRM1}	μA	$V_{RM}=V_{RRM}$	$T_a=25^{\circ}C$	5
	I_{RRM2}			$T_a=125^{\circ}C$	150
Thermal Resistance(Typical)	$R_{\theta J-A}$	$^{\circ}C/W$	Between junction and ambient		95
	$R_{\theta J-L}$		Between junction and terminal		4
Juction Capacitance (Typical)	C_J	pF	Measured at 1.0MHz and applied reverse voltage of 4.0 volts.		43

Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on 1" x 1"(25.4mm x 25.4mm) FR4 PCB, double sided copper, with minimum pad layout

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

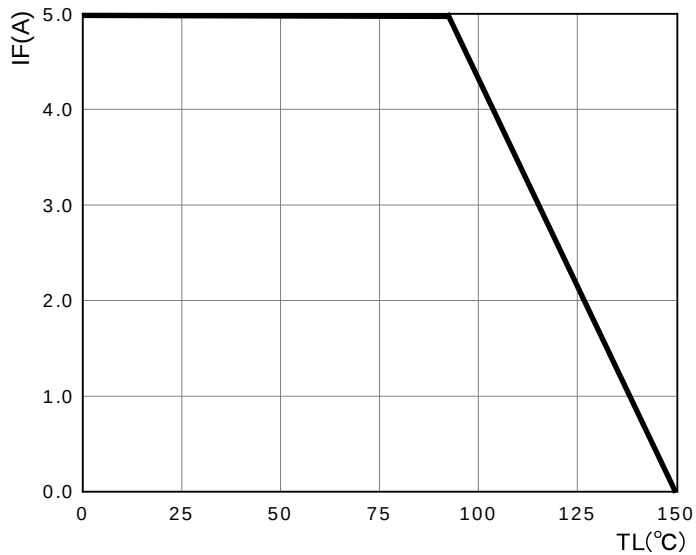


FIG 2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

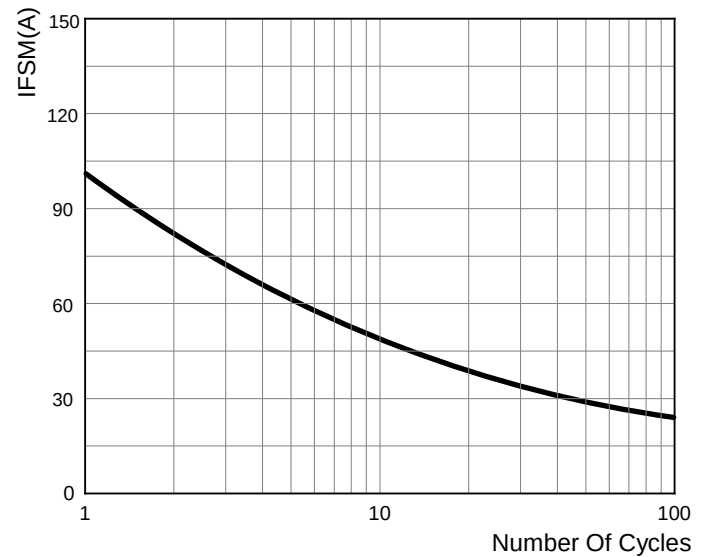


FIG.3 : TYPICAL FORWARD CHARACTERISTICS

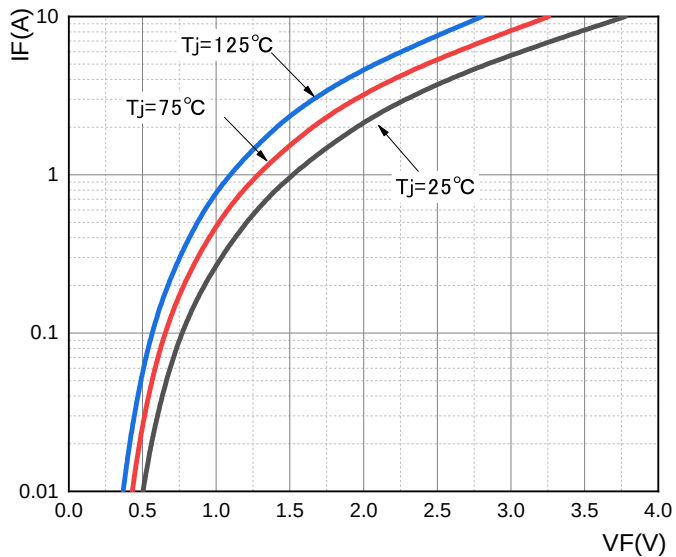
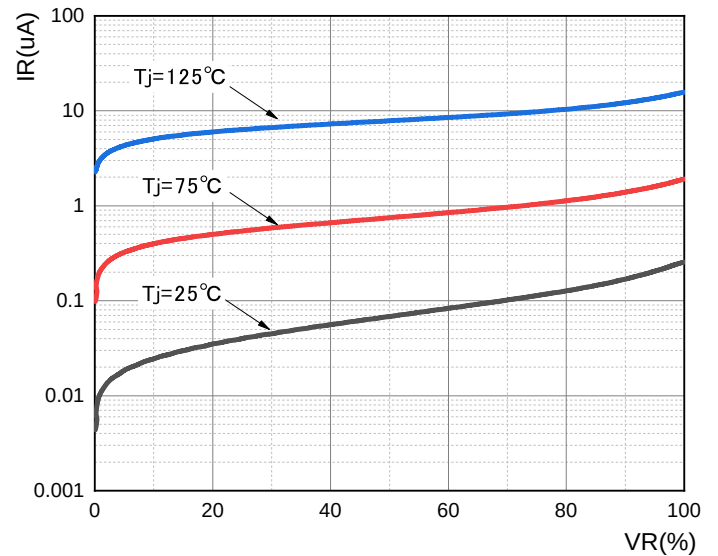
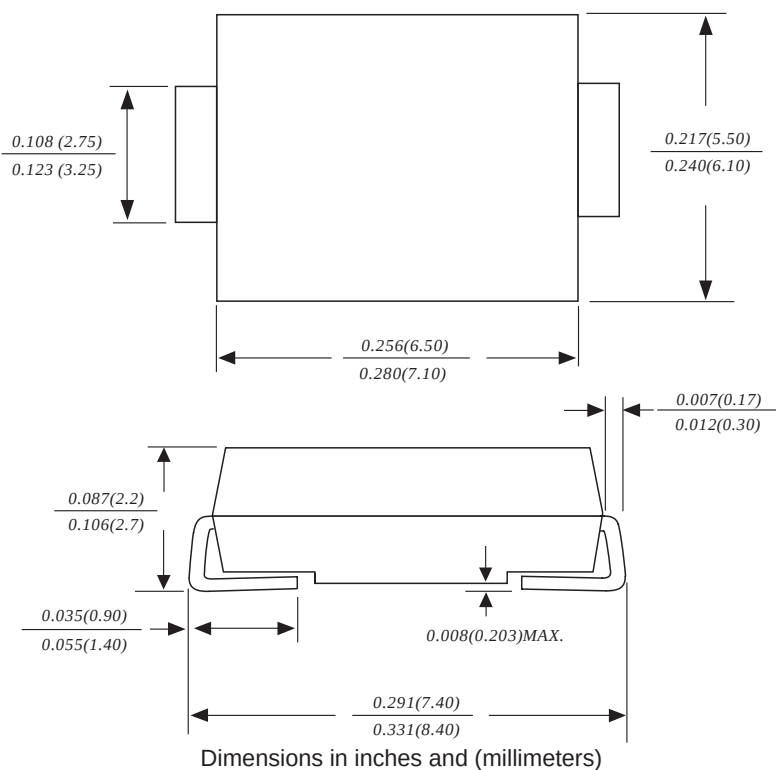


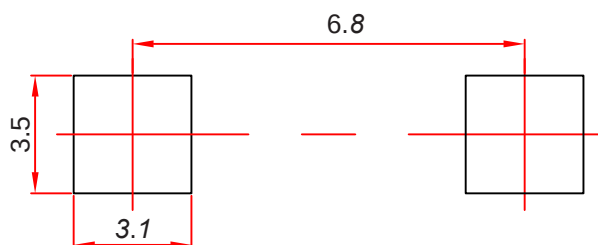
FIG.4 TYPICAL REVERSE CHARACTERISTICS



SMCG Package Outline Dimensions



SMCG Suggested Pad Layout



Note:

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

Ordering Information

Part Number	Package	Shipping Quantity
ES5M	SMCG	3000/tape&Reel

Marking Diagram



Reel Taping Specifications For Surface Mount Devices–SMCG

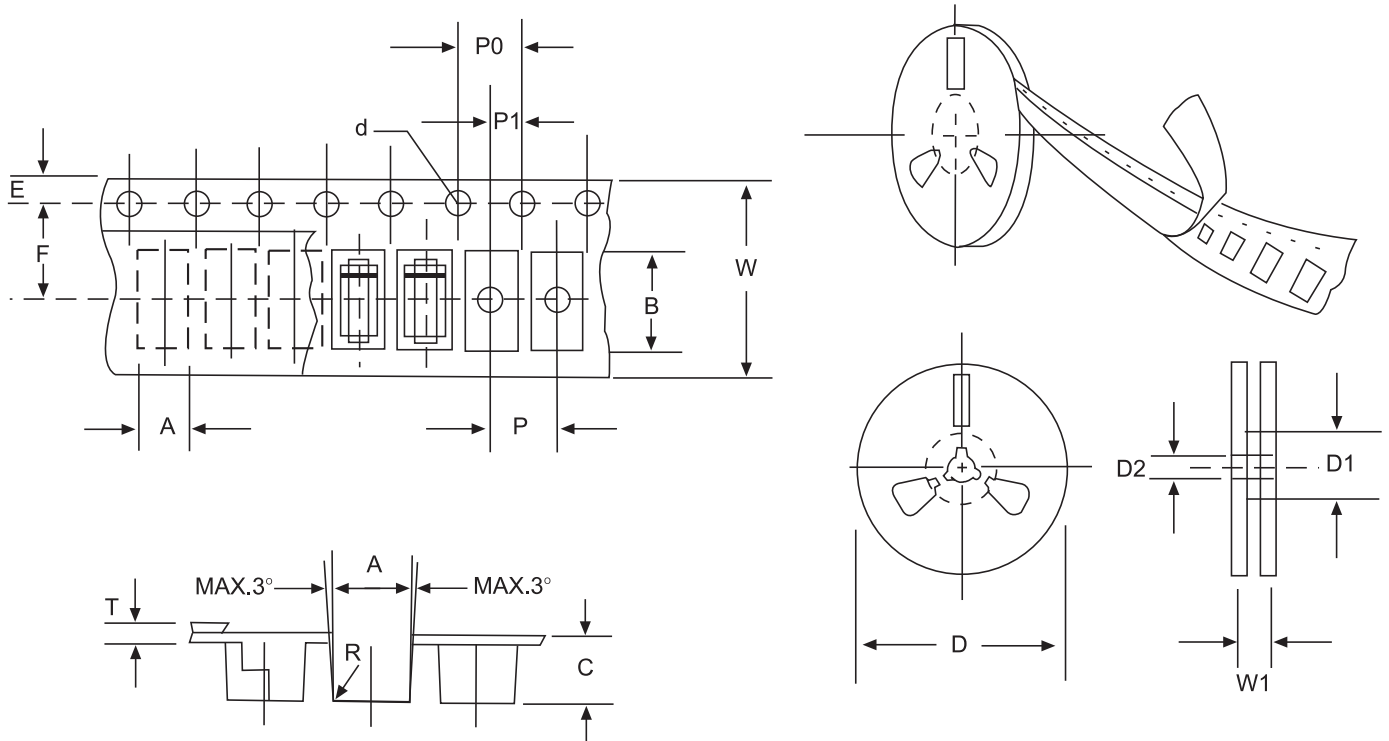


FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

ITEM	SYMBOL	SMCG mm(inch)
Carrier width	A	6.05±0.1(0.238±0.004)
Carrier length	B	8.31±0.1(0.327±0.004)
Carrier depth	C	2.70±0.1(0.106±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.002)
Reel outside diameter	D	330±2.0(13±0.079)
Reel inner diameter	D1	75 ±1.0 (2.95 ±0.039)
Feed hole diameter	D2	13±0.5(0.512±0.020)
Sprocket hole position	E	1.75±0.1(0.069±0.004)
Punch hole position	F	7.65±0.05(0.301±0.002)
Punch hole pitch	P	8.0±0.1(0.315±0.004)
Sprocket hole pitch	P0	4.0±0.1(0.157±0.004)
Embossment center	P1	2.0±0.1(0.079±0.004)
Total tape thickness	T	0.3±0.1(0.012±0.004)
Tape width	W	16.0±0.2(0.630±0.008)
Reel width	W1	24.0±2.0(0.945±0.079)

NOTE: Devices are packed in accordance with EIA standard RS-481-A and specification given above.