

SMCG Plastic-Encapsulate Diodes

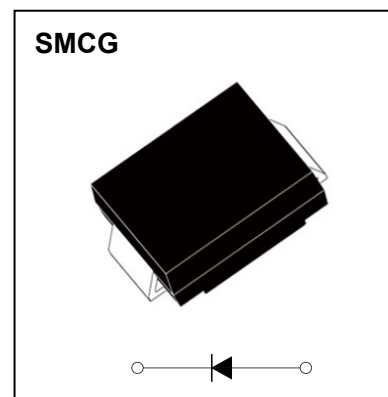
High Efficient Rectifier

Features

- I_O 3A
- VRRM 50V-1000V
- Low forward voltage drop
- High surge current capability
- Glass passivated chip junction

Mechanical 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	Conditions	US							
				3A	3B	3D	3F	3G	3J	3K	3M
Repetitive Peak Reverse Voltage	V_{RRM}	V		50	100	200	300	400	600	800	1000
Maximum RMS Voltage	V_{RMS}	V		35	70	140	210	280	420	560	700
Maximum DC blocking Voltage	V_{DC}	V		50	100	200	300	400	600	800	1000
Average Forward Current	$I_{F(AV)}$	A	60Hz Half-sine wave, Resistance load, $T_L=85^{\circ}C$	3.0							
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		US						
					3A	3B	3D	3F	3G	3J	3K
Peak Forward Voltage	V _{FM}	V	I _{FM} =3.0A		1.0			1.3		1.7	
Peak Reverse Current	I _{RRM1}	μA	V _{RM} =V _{RRM}	T _a =25℃	5						
	T _a =125℃			100							
Reverse Recovery time	t _{tr}	ns	I _F =0.5A I _R =1A I _{RR} =0.25A		50				75		
Thermal Resistance(Typical)	R _{θJ-A}	℃/W	Between junction and ambient		47						
	Between junction and terminal		13								
	Between junction and case		12								
Juction Capacitance (Typical)	CJ	pF	Measured at 1.0MHz and applied reverse voltage of 4.0 volts.		53			35		22	

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

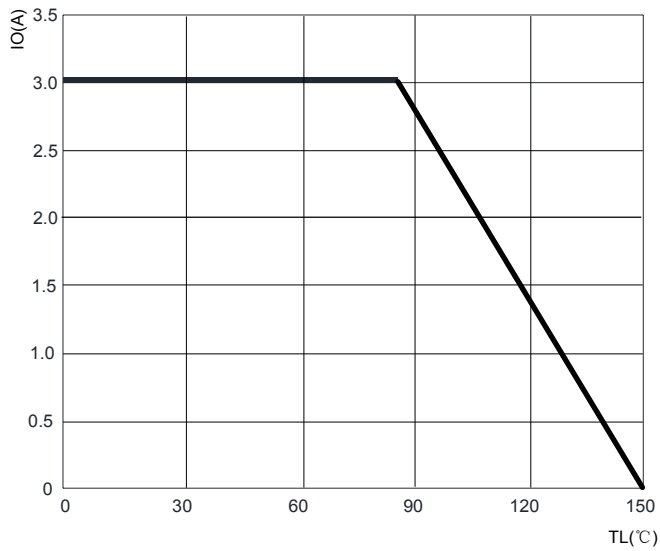


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

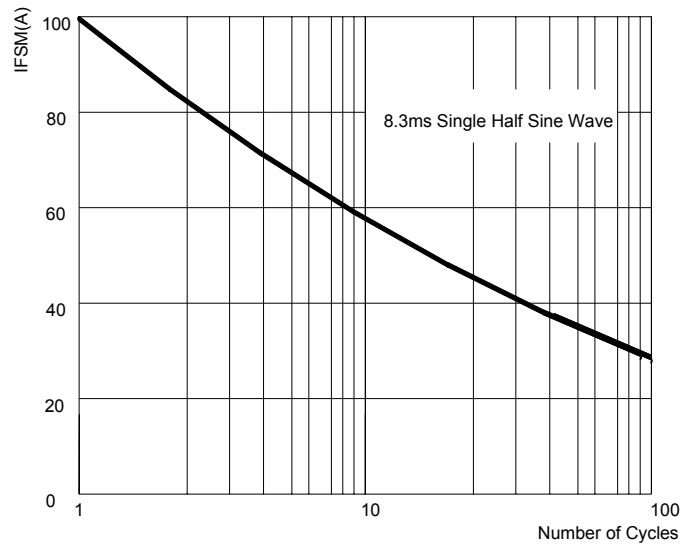


FIG.3: TYPICAL FORWARD CHARACTERISTICS

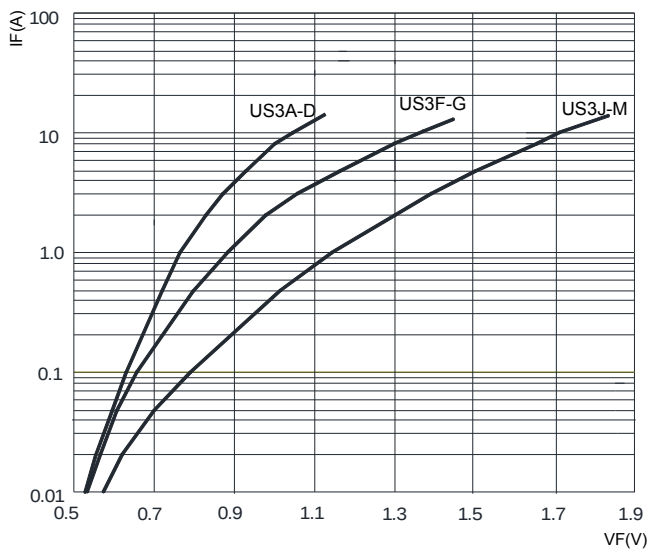


FIG.4: TYPICAL REVERSE CHARACTERISTICS

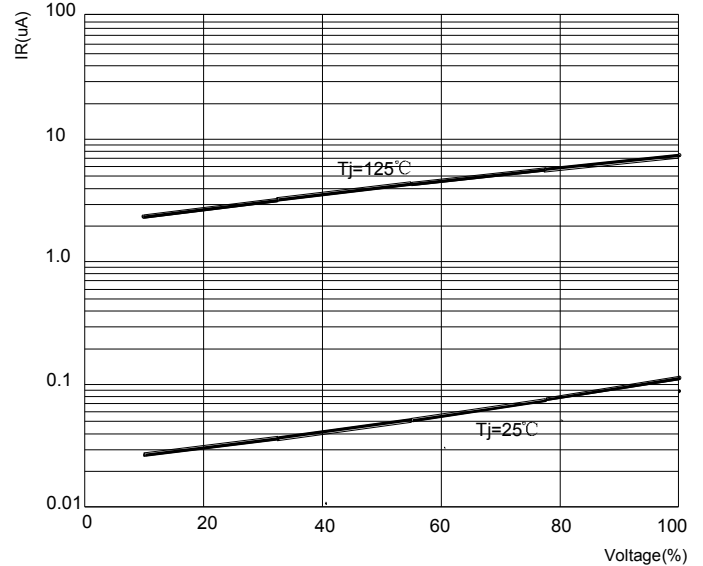
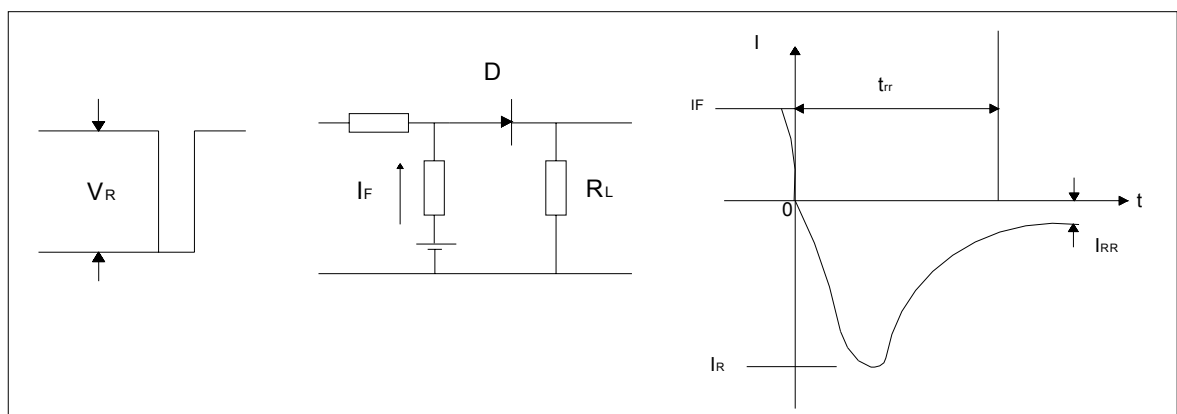
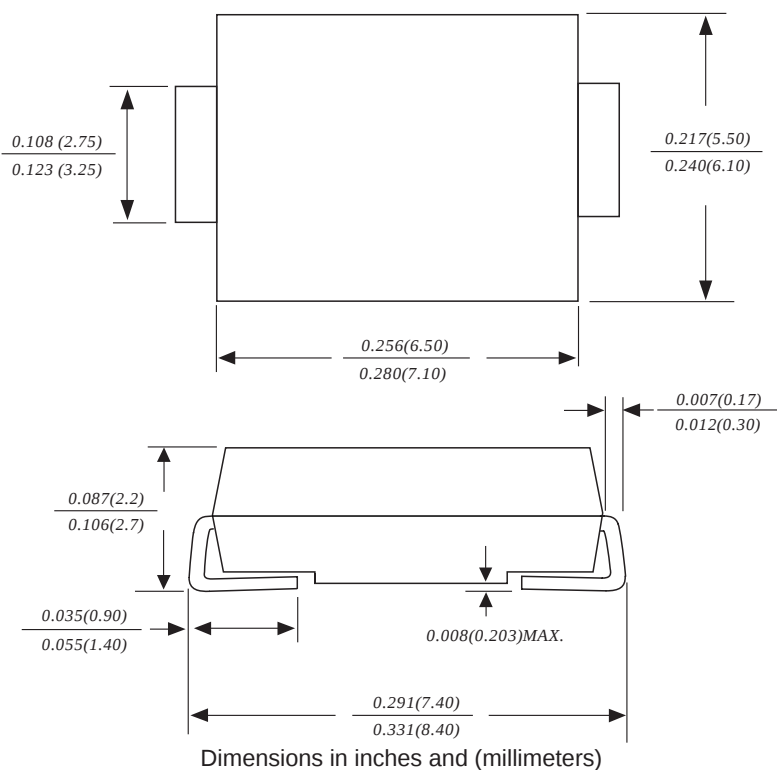


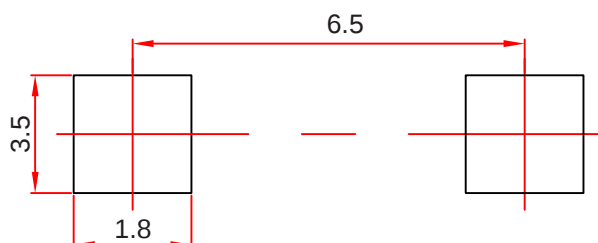
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



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
US3A-US3M	SMCG	3000/tape&Reel

Marking Diagram



X: From A To M

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 packde in accordance with EIA standard RS-481-A and specification given above.