

Surface Mount Ultra Fast Rectifiers

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Ultra fast recovery time for high efficiency
- Moisture sensitivity: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition

MECHANICAL DATA

Case : DO-214AB(SMC)

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - halogen-free, RoHS compliant

Terminal : Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

Polarity : Indicated by cathode band

Weight : 0.2 gram (approximately)



DO-214AB(SMC)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)					
PARAMETER	SYMBOL	ESH3B	ESH3C	ESH3D	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	100	150	200	V
Maximum RMS voltage	V _{RMS}	70	105	140	V
Maximum DC blocking voltage	V _{DC}	100	150	200	V
Maximum average forward rectified current	I _{F(AV)}	3			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	125			A
Maximum instantaneous forward voltage (Note 1) @ 3 A	V _F	0.90			V
Maximum reverse current @ rated VR T _J =25 °C T _J =125 °C	I _R	5 150			uA
Maximum reverse recovery time (Note 2)	T _{rr}	20			nS
Typical junction capacitance (Note 3)	C _j	45			pF
Typical thermal resistance	R _{θJL} R _{θJA}	12 47			°C/W
Operating junction temperature range	T _J	- 55 to + 175			°C
Storage temperature range	T _{STG}	- 55 to + 175			°C

Note 1 : Pulse test with PW=300u sec, 1% duty cycle

Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

ORDERING INFORMATION				
PART NO.	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
ESH3x (Note 1)	R7	Suffix "G"	SMC	850 / 7" Plastic reel
	R6		SMC	3000 / 13" Paper reel
	M6		SMC	3000 / 13" Plastic reel

Note 1: "x" defines voltage from 100V (ESH3B) to 200V (ESH3D)

EXAMPLE				
PREFERRED P/N	PART NO.	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
ESH3D R7	ESH3D	R7		
ESH3D R7G	ESH3D	R7	G	Green compound

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

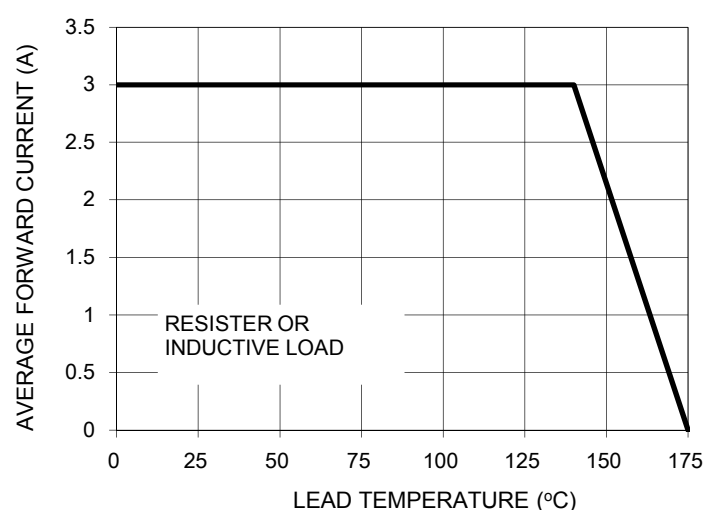


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

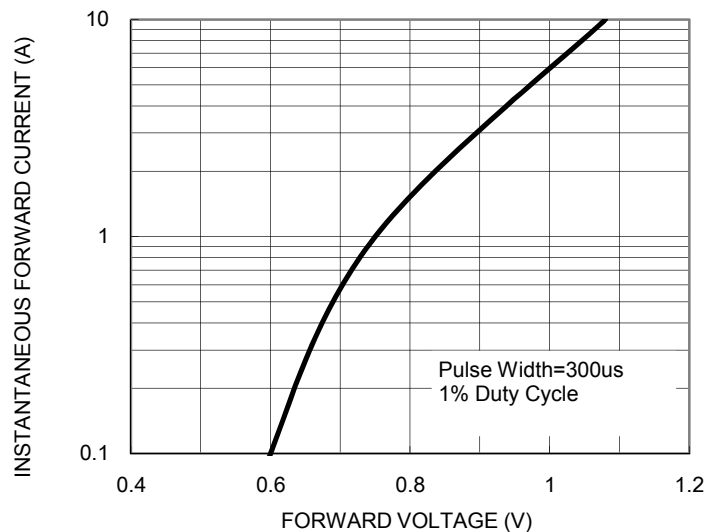


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

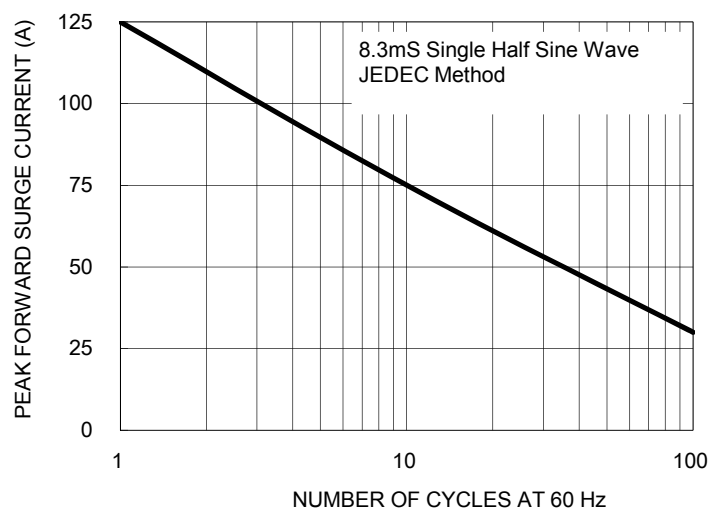


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

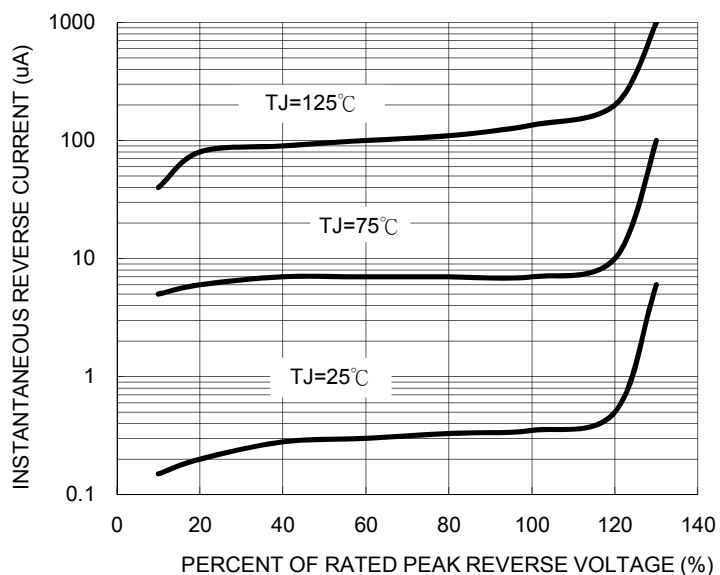


FIG. 5 TYPICAL JUNCTION CAPACITANCE

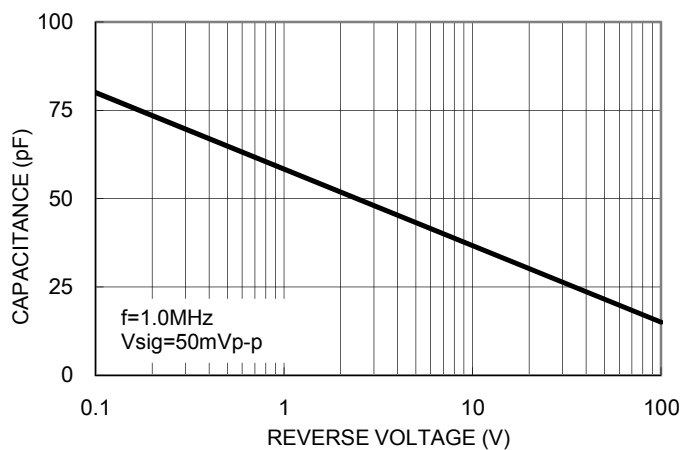
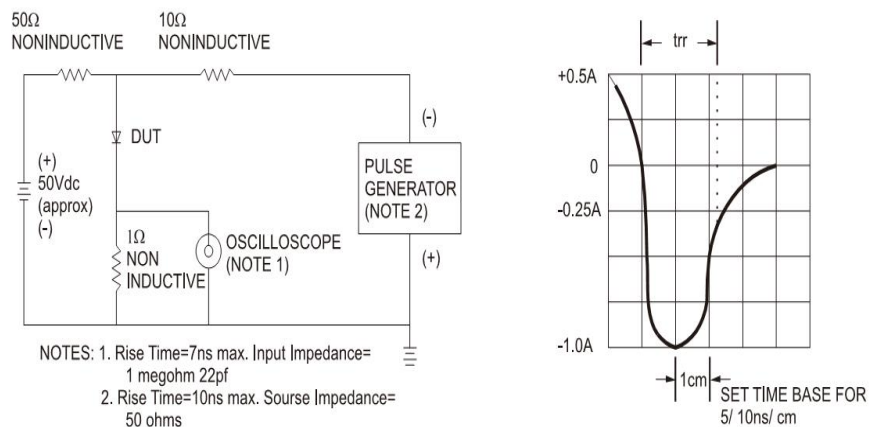
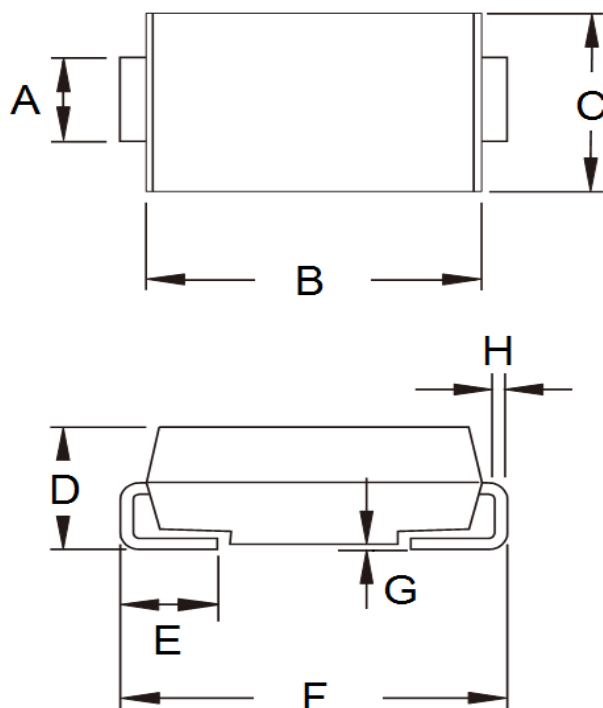


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

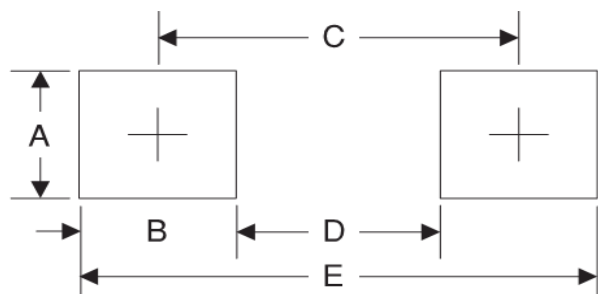


PACKAGE OUTLINE DIMENSIONS



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.00	2.62	0.079	0.103
E	1.00	1.60	0.039	0.063
F	7.75	8.13	0.305	0.320
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012

SUGGESTED PAD LAYOUT



Symbol	Unit(mm)
A	3.3
B	2.5
C	6.8
D	4.4
E	9.4

MARKING DIAGRAM



P/N = Specific Device Code
G = Green Compound
YW = Date Code
F = Factory Code