

## 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


**DO-214AA(SMB)**

### MECHANICAL DATA

**Case :** DO-214AA(SMB)

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 :** 0.09 gram (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)					
PARAMETER	SYMBOL	ESH2B	ESH2C	ESH2D	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	100	150	200	V
Maximum RMS voltage	V <sub>RMS</sub>	70	105	140	V
Maximum DC blocking voltage	V <sub>DC</sub>	100	150	200	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	2			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	60			A
Maximum instantaneous forward voltage (Note 1) @ 2 A	V <sub>F</sub>	0.90			V
Maximum reverse current @ rated VR T <sub>J</sub> =25 °C T <sub>J</sub> =125 °C	I <sub>R</sub>	2 50			uA
Maximum reverse recovery time (Note 2)	T <sub>rr</sub>	20			nS
Typical junction capacitance (Note 3)	C <sub>j</sub>	25			pF
Typical thermal resistance	R <sub>θJL</sub> R <sub>θJA</sub>	20 75			°C/W
Operating junction temperature range	T <sub>J</sub>	- 55 to + 175			°C
Storage temperature range	T <sub>STG</sub>	- 55 to + 175			°C

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

Note 2: Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=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
ESH2x (Note 1)	R5	Suffix "G"	SMB	850 / 7" Plastic reel
	R4		SMB	3000 / 13" Paper reel
	M4		SMB	3000 / 13" Plastic reel

Note 1: "x" defines voltage from 100V (ESH2B) to 200V (ESH2D)

EXAMPLE				
PREFERRED P/N	PART NO.	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
ESH2D R5	ESH2D	R5		
ESH2D R5G	ESH2D	R5	G	Green compound

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

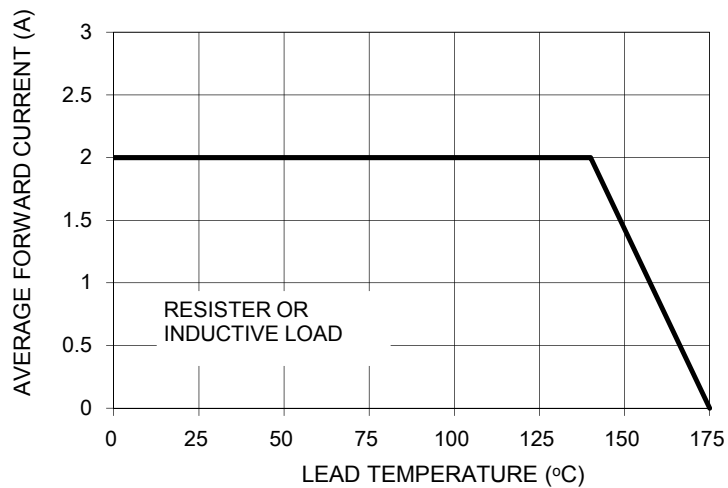


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

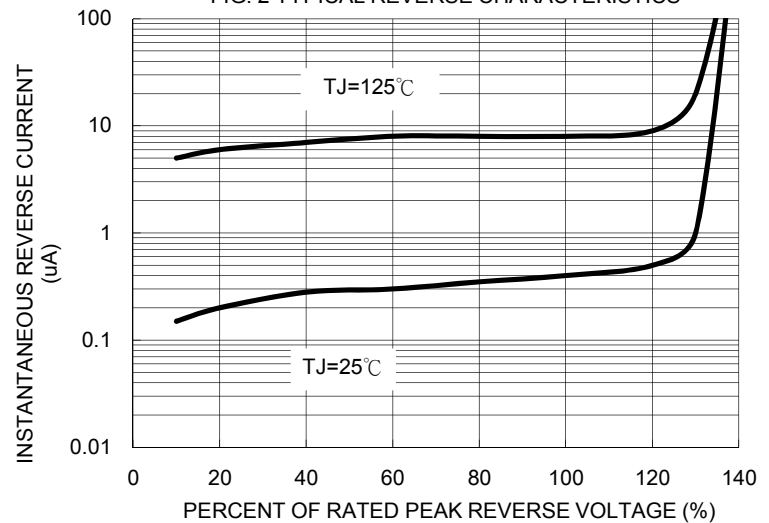


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

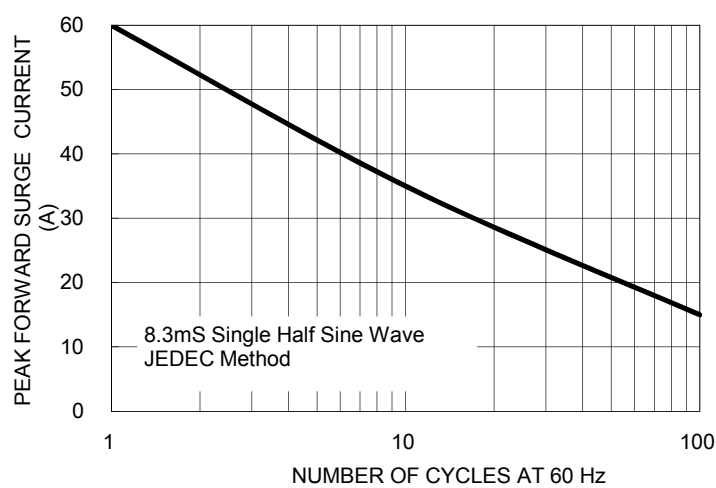


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

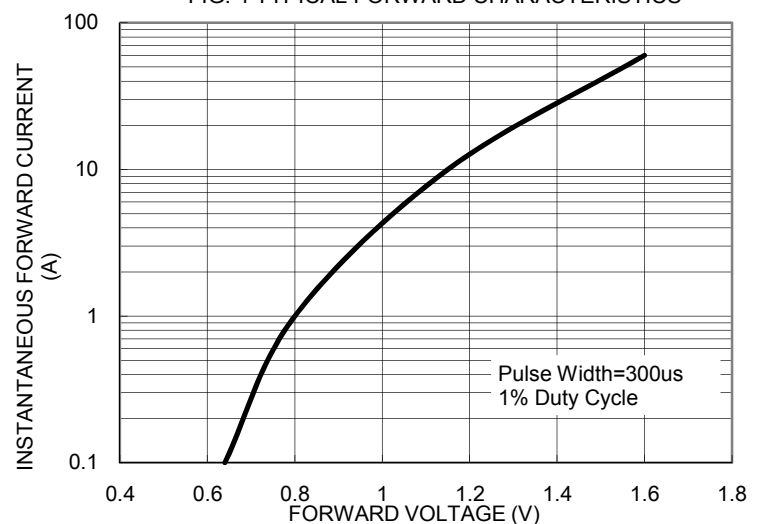


FIG. 5 TYPICAL JUNCTION CAPACITANCE

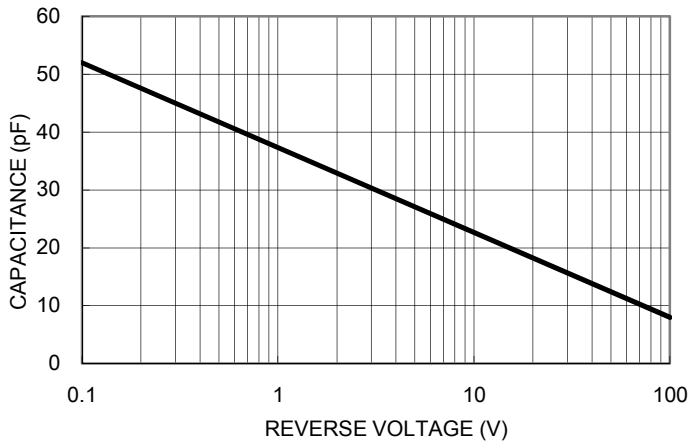
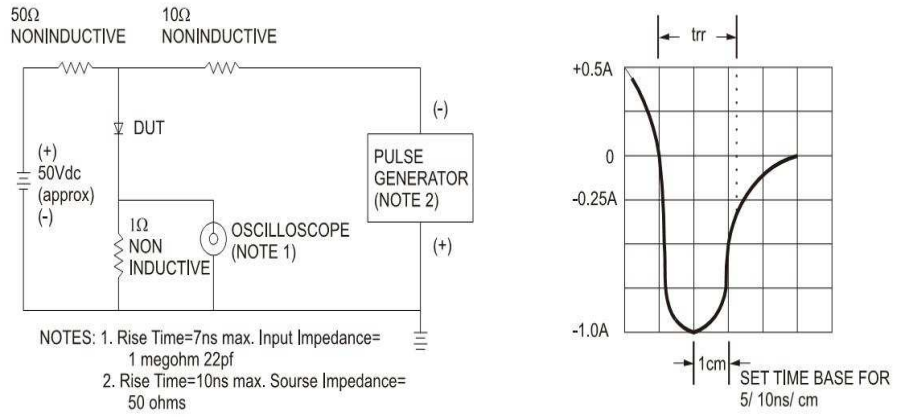
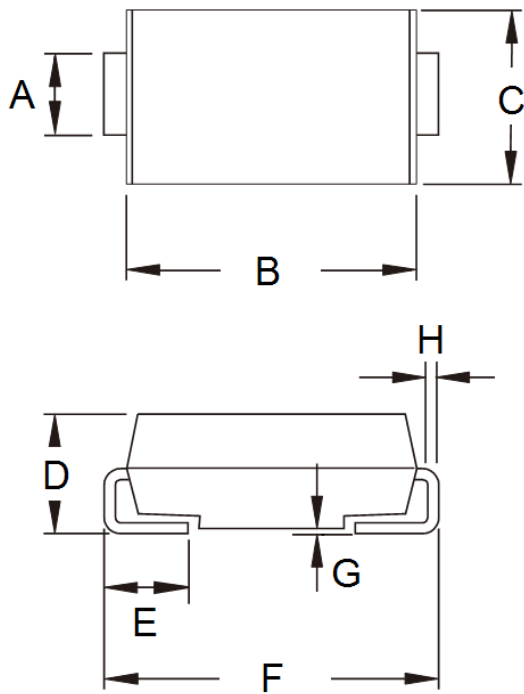


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

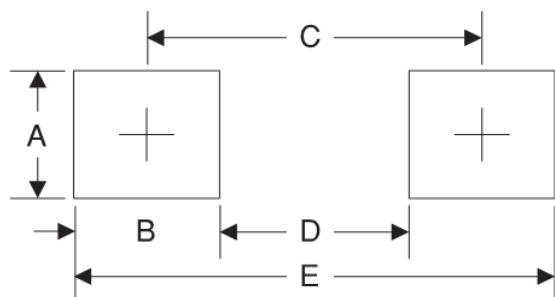


**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.95	2.10	0.077	0.083
B	4.25	4.75	0.167	0.187
C	3.48	3.73	0.137	0.147
D	1.99	2.61	0.078	0.103
E	0.90	1.41	0.035	0.056
F	5.10	5.30	0.201	0.209
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	2.3
B	2.5
C	4.3
D	1.8
E	6.8

**MARKING DIAGRAM**



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