

Surface Mount Super Fast Rectifiers

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Super fast recovery time for high efficiency
- Moisture sensitivity level: 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-214AB (SMC)

MECHANICAL DATA

Case: DO-214AB (SMC)

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - green compound (halogen-free)

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

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

Meet JESD 201 class 1A whisker test

with prefix "H" on packing code meet JESD 201 class 2 whisker test

Polarity: Indicated by cathode band

Weight: 0.21 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)										
PARAMETER	SYMBOL	ES 3A	ES 3B	ES 3C	ES 3D	ES 3F	ES 3G	ES 3H	ES 3J	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	500	600	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}	100								A
Maximum instantaneous forward voltage (Note 1) I _F = 3 A	V _F	0.95			1.3		1.7			V
Maximum reverse current @ rated VR T _J =25 °C T _J =100 °C	I _R	10 500								μA
Maximum reverse recovery time (Note 2)	T _{rr}	35								ns
Typical junction capacitance (Note 3)	C _j	45				30				pF
Typical thermal resistance	R _{θJL} R _{θJA}	12 47								°C/W
Operating junction temperature range	T _J	- 55 to +150								°C
Storage temperature range	T _{STG}	- 55 to +150								°C

Note 1: Pulse test with PW=300μs, 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.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
ES3x (Note 1)	Prefix "H"	R7	Suffix "G"	SMC	850 / 7" Plastic reel
		R6		SMC	3,000 / 13" Paper reel
		M6		SMC	3,000 / 13" Plastic reel

Note 1: "xx" defines voltage from 50V (ES3A) to 600V (ES3J)

EXAMPLE					
PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
ES3J R7	ES3J		R7		
ES3J R7G	ES3J		R7	G	Green compound
ES3JHR7	ES3J	H	R7		AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

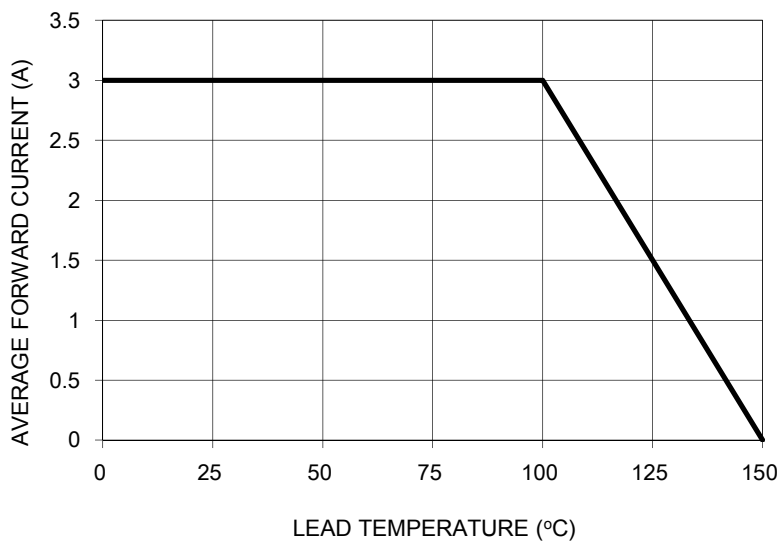


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

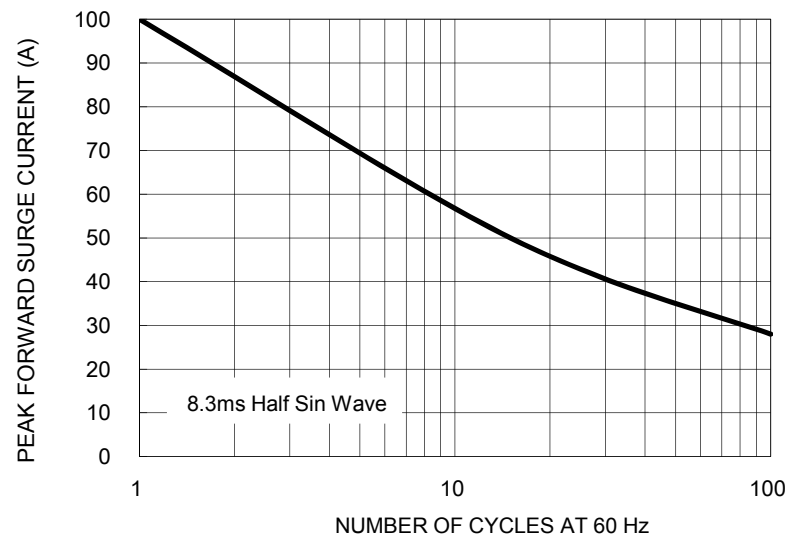


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

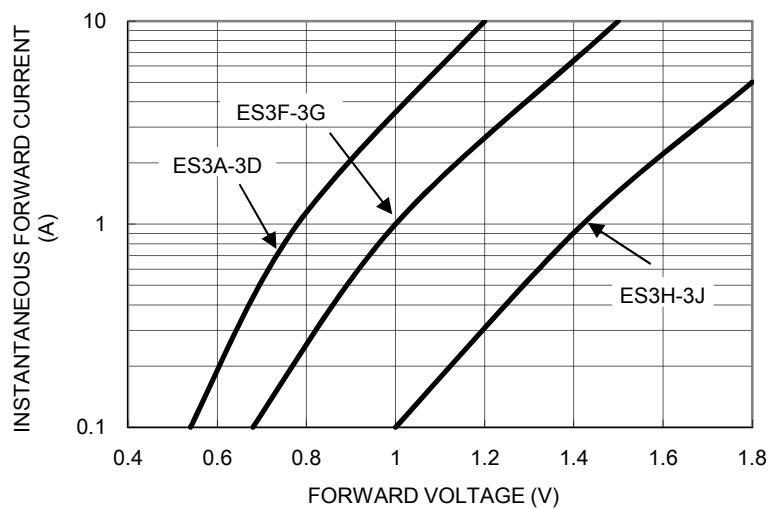


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

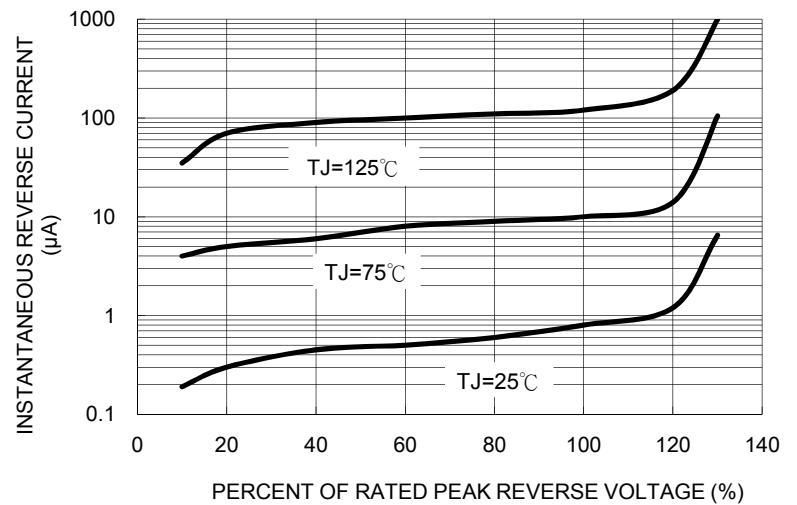


FIG. 5 TYPICAL JUNCTION CAPACITANCE

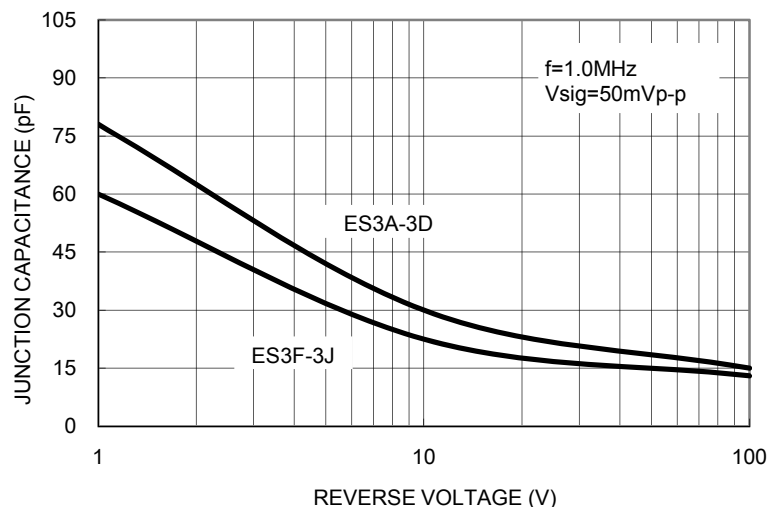


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

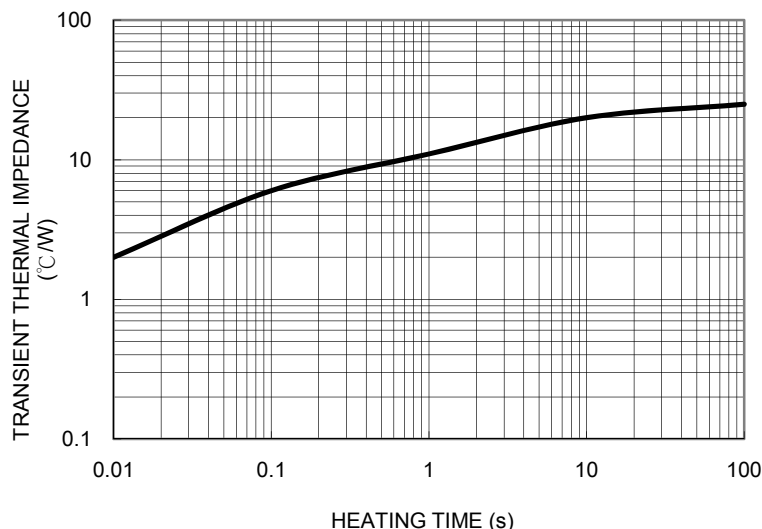
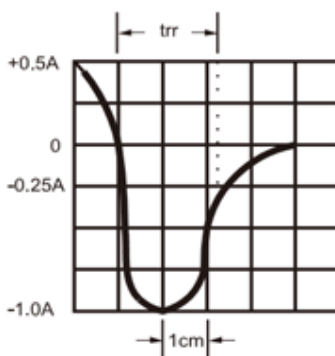
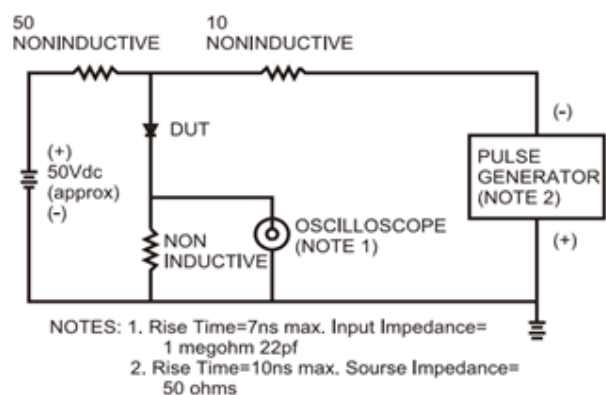
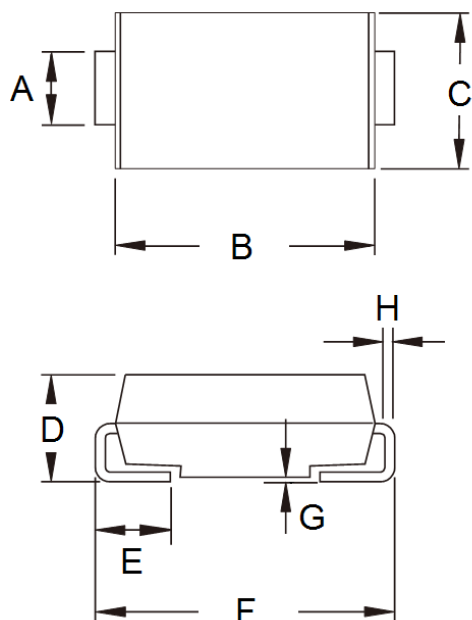


FIG.7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

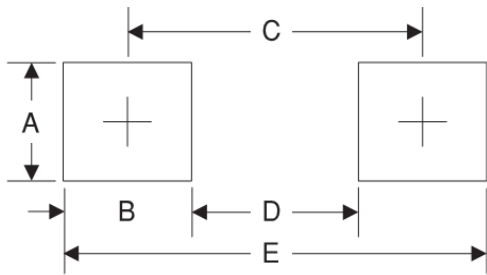


PACKAGE OUTLINE DIMENSIONS



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)	Unit (inch)
A	3.3	0.130
B	2.5	0.098
C	6.8	0.268
D	4.4	0.173
E	9.4	0.370

MARKING DIAGRAM



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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.