

2A, 200V - 600V Surface Mount Super Fast Rectifiers

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



MECHANICAL DATA

Case: SMBF

Molding compound: UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Packing code with suffix "G" means green compound (halogen-free)

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

Meet JESD 201 class 1A whisker test

Polarity: Indicated by cathode band

Weight: 0.101g (approximately)

SMBF

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)					
PARAMETER	SYMBOL	ES2DF	ES2GF	ES2JF	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	200	400	600	V
Maximum RMS voltage	V _{RMS}	140	280	420	V
Maximum DC blocking voltage	V _{DC}	200	400	600	V
Maximum average forward rectified current	I _{F(AV)}	2			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	50			A
Maximum instantaneous forward voltage (Note 1) @ 2 A	V _F	1.00	1.30	1.70	V
Maximum reverse current @ rated V _R	I _R	10			μA
		350			
Typical junction capacitance (Note 2)	C _J	10			pF
Maximum reverse recovery time (Note 3)	t _{rr}	35			ns
Typical thermal resistance	R _{θJL}	20			°C/W
	R _{θJA}	75			
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: Measured at 1 MHz and applied VR=4.0 V

Note 3: Test conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
ES2xF (Note 1, 2)	R4	G	SMBF	5,000 / 13" Paper reel

Note 1: "x" defines voltage from 200V (ES2DF) to 600V (ES2JF)

Note 2: Whole series with green compound

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
ES2DF R4G	ES2DF	R4	G	Green compound

RATINGS AND CHARACTERISTICS CURVES (T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

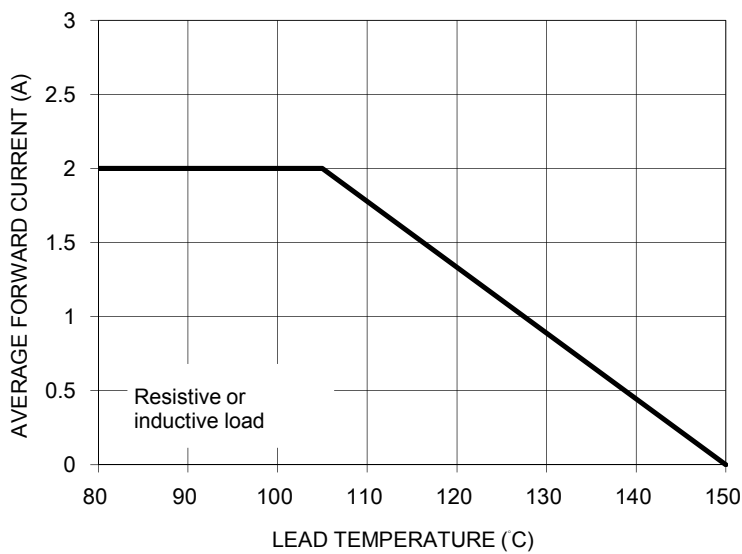


FIG. 2 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

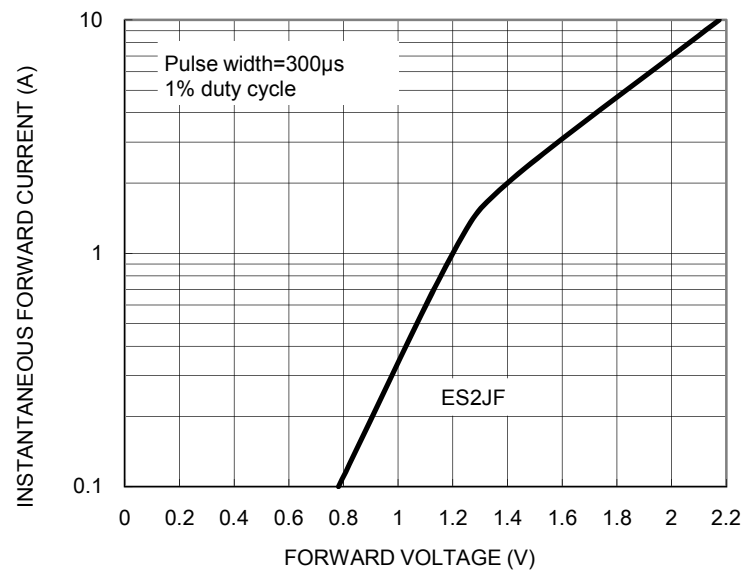


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

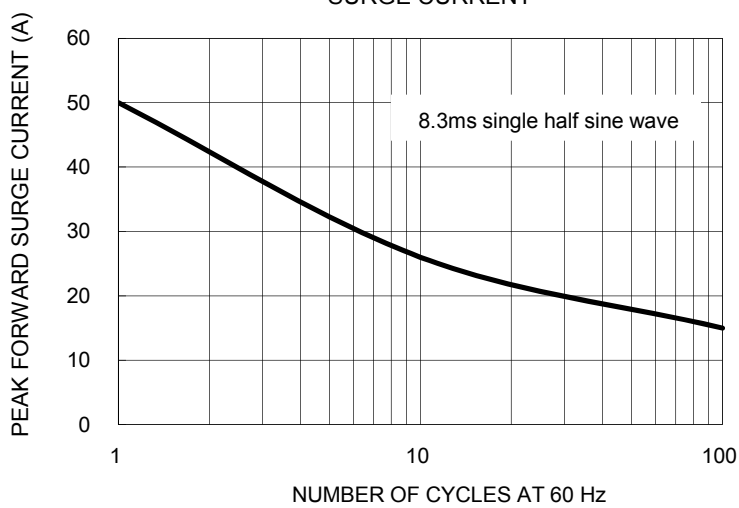


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

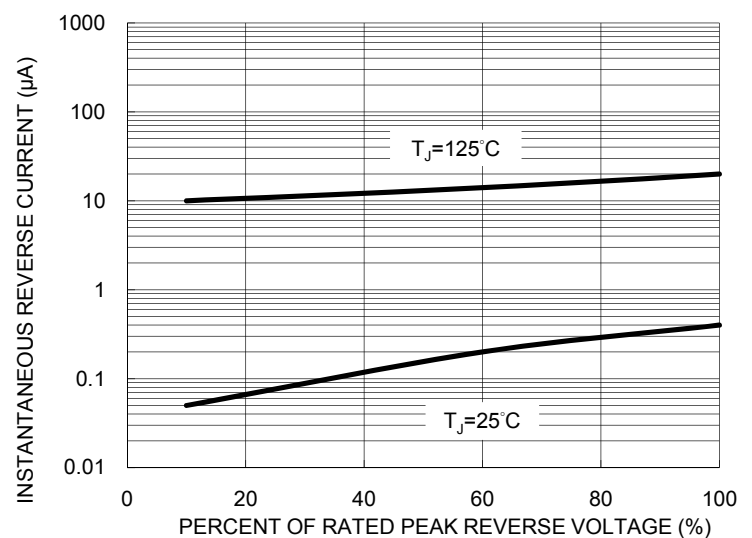


FIG. 5 TYPICAL JUNCTION CAPACITANCE

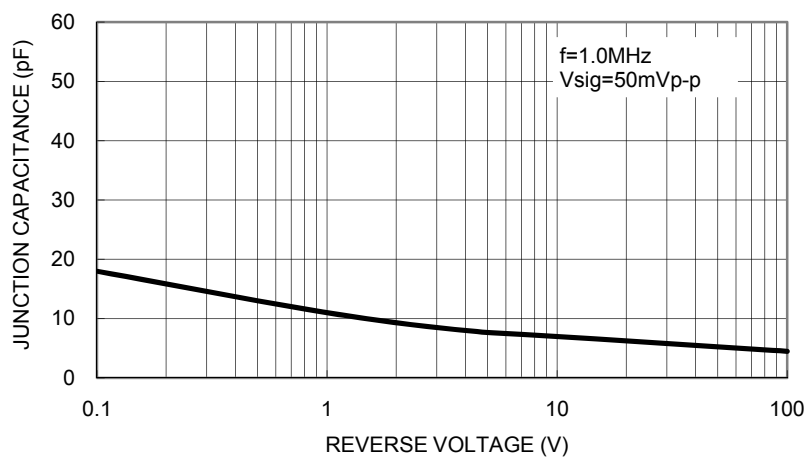
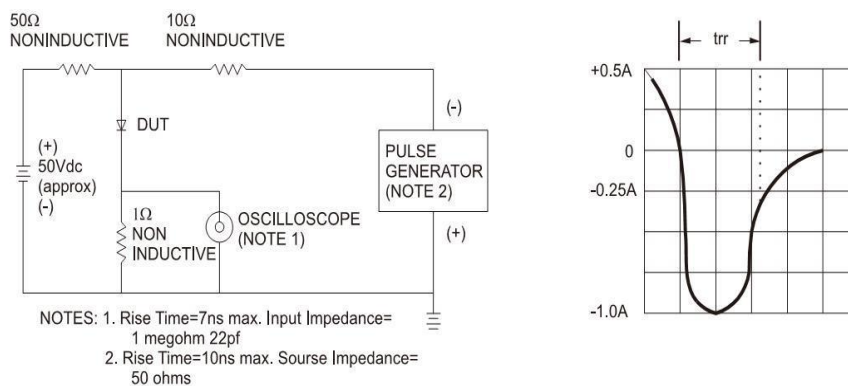
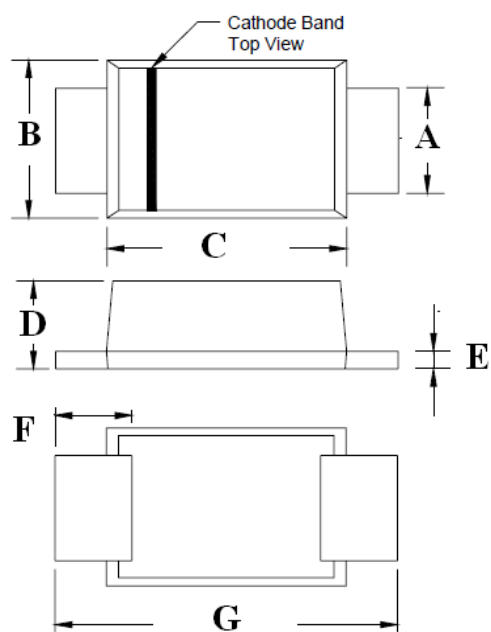


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



PACKAGE OUTLINE DIMENSIONS

SMBF



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.90	2.61	0.075	0.103
B	3.50	3.70	0.138	0.146
C	4.20	4.75	0.165	0.187
D	0.90	1.30	0.035	0.051
E	0.18	0.26	0.007	0.010
F	1.00		0.039	
G	5.10	5.50	0.201	0.217

MARKING DIAGRAM



- P/N = Specific Device Code
- G = Green compound Code
- 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 or 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.