

High Efficient Surface Mount Rectifiers

FEATURES

- Glass passivated junction chip.
- Ideal for automated placement
- Fast switching for high efficiency
- High surge current capability
- 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
- AEC-Q101 available


DO-214AC (SMA)

TYPICAL APPLICATION

The superior avalanche capability of BYG23M is specially suited for free-wheeling, clamping, snubbing, demagnetization in power supplies and other power switching applications.

MECHANICAL DATA

Case: DO-214AC (SMA)

Molding compound, UL flammability classification rating 94V-0

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

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

Meet JESD 201 class 2 whisker test

Polarity: Indicated by cathode band

Weight: 0.064 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	BYG23M	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	1000	V
Maximum RMS voltage	V _{RMS}	700	V
Maximum DC blocking voltage	V _{DC}	1000	V
Maximum average forward rectified current (@T _A =65°C)	I _{F(AV)}	1.5	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) @ 1 A	V _F	1.7	V
Maximum reverse current @ rated VR T _J =25°C T _J =100°C T _J =125°C	I _R	1 15 50	μA
Pulse energy in avalanche mode, non repetitive (Inductive load switch off) T _A =25°C, I _{(BR)R} =1.23A	E _{RSM}	30	mJ
Maximum reverse recovery time (Note 2)	t _{rr}	65	ns
Typical junction capacitance (Note 3)	C _J	15	pF
Typical thermal resistance	R _{θJA}	70	°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 4.0Volts.

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE (Note 1)	PACKING
BYG23M	R3	G	SMA	1,800 / 7" Plastic reel
	R2		SMA	7,500 / 13" Paper reel
	M2		SMA	7,500 / 13" Plastic reel
	F3		Folded SMA	1,800 / 7" Plastic reel
	F2		Folded SMA	7,500 / 13" Paper reel
	F4		Folded SMA	7,500 / 13" Plastic reel
	E3		Clip SMA	1,800 / 7" Plastic reel
	E2		Clip SMA	7,500 / 13" Plastic reel

Note 1: Package "SMA" and "Folded SMA" are AEC-Q101 qualified, Clip SMA doesn't.

EXAMPLE				
PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BYG23M R3	BYG23M	R3		AEC-Q101 qualified
BYG23M R3G	BYG23M	R3	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

($T_A=25^{\circ}\text{C}$ unless otherwise noted)

FIG. 1 MAXIMUM AVERAGE FORWARD CURRENT DERATING

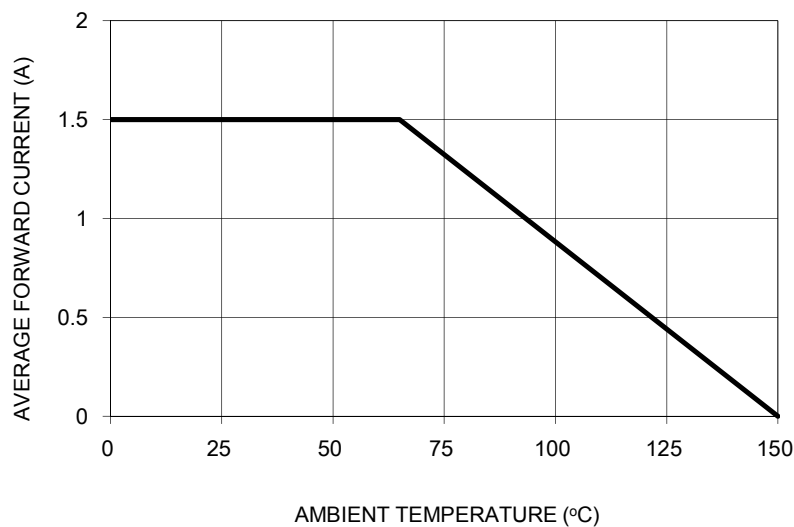


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

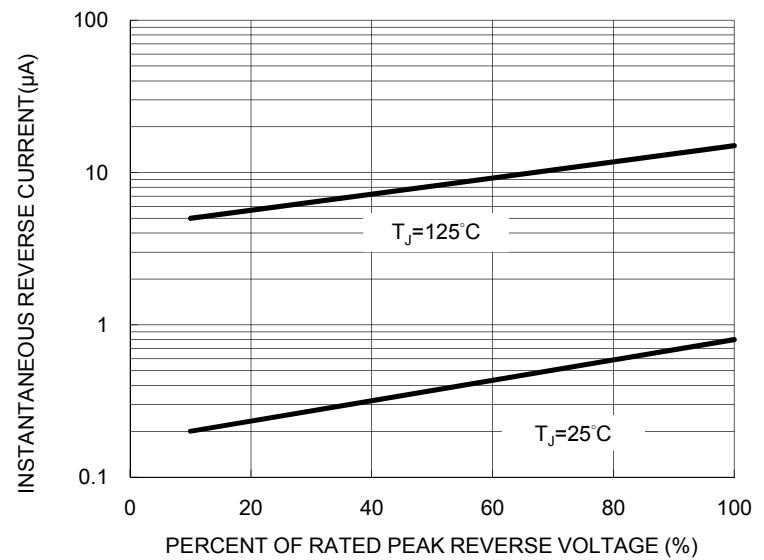


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

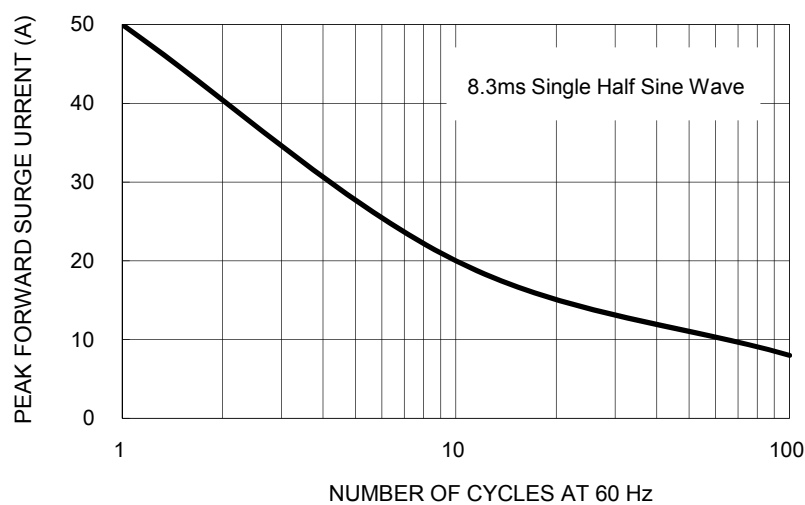


FIG. 4 TYPICAL JUNCTION CAPACITANCE

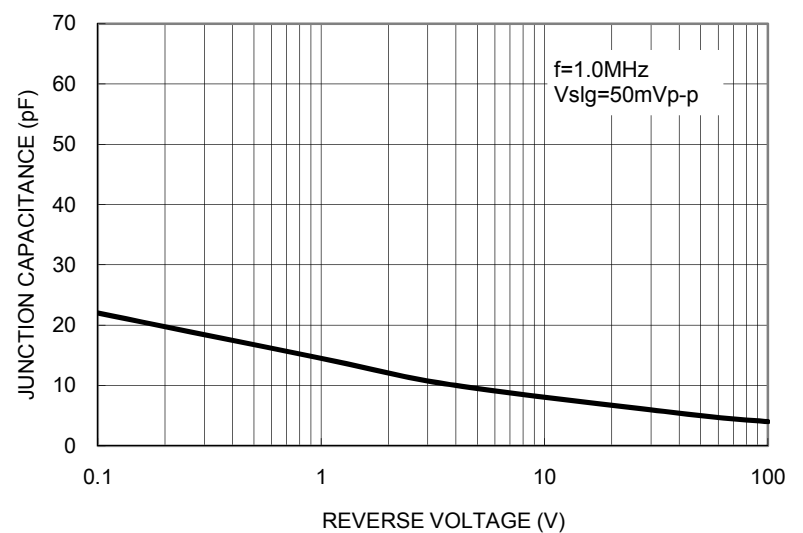


FIG. 5 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

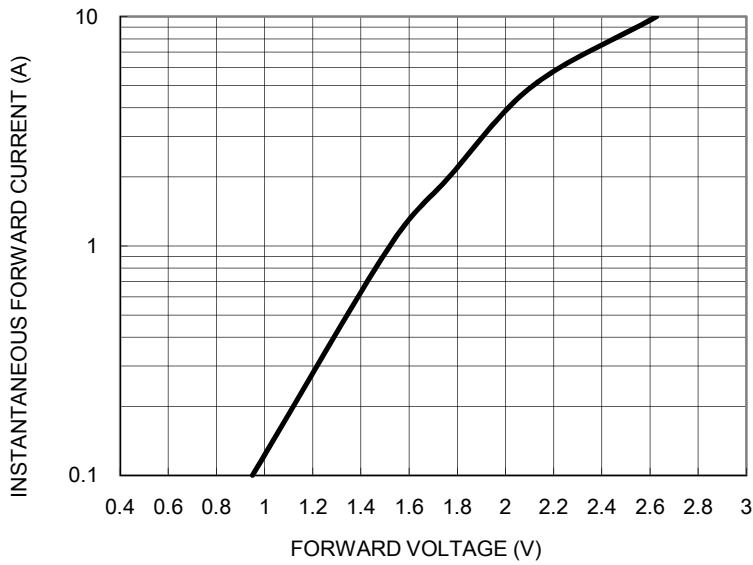
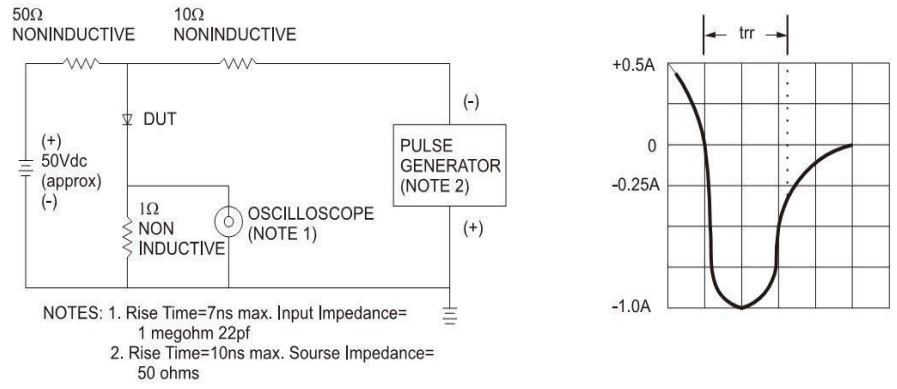
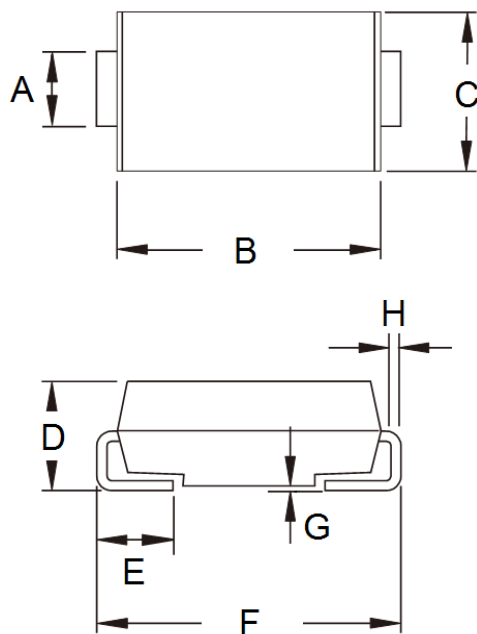


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



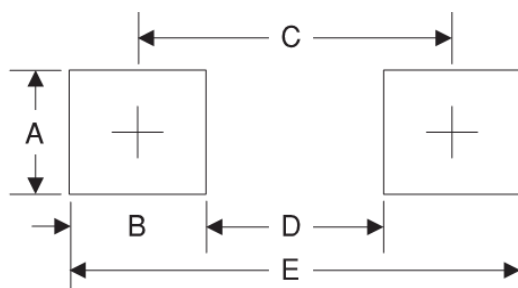
PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.27	1.58	0.050	0.062
B	4.06	4.60	0.160	0.181
C	2.29	2.83	0.090	0.111
D	1.99	2.50	0.078	0.098
E	0.90	1.41	0.035	0.056
F	4.95	5.33	0.195	0.210
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	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

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 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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Taiwan Semiconductor:

[BYG23M](#) [BYG23M E3G](#) [BYG23M E2](#) [BYG23M E2G](#) [BYG23M E3](#) [BYG23MHM2G](#) [BYG23M R3G](#) [BYG23M M2G](#)
[BYG23MHR3G](#)