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)

Pb-Free

RoHS COMPLIANT

TYPICAL APPLICATION

The superior avalanche capability of BYG23M is specially suited for free-wheeling, clamping, snubbering, 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 CHARACTERSTICS (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℃, $I_{(BR)R}$ =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	$R_{\theta JA}$	70	^{O}C/W
Operating junction temperature range	T_J	- 55 to +150	^{O}C
Storage temperature range	T_{STG}	- 55 to +150	^{O}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°C unless otherwise noted)

FIG.1 MAXIMUM AVERAGE FORWARD CURRENT DERATING

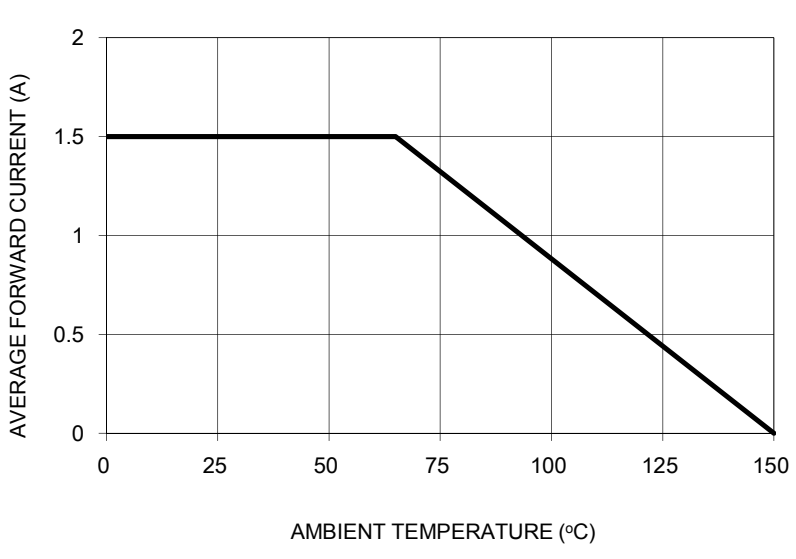


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

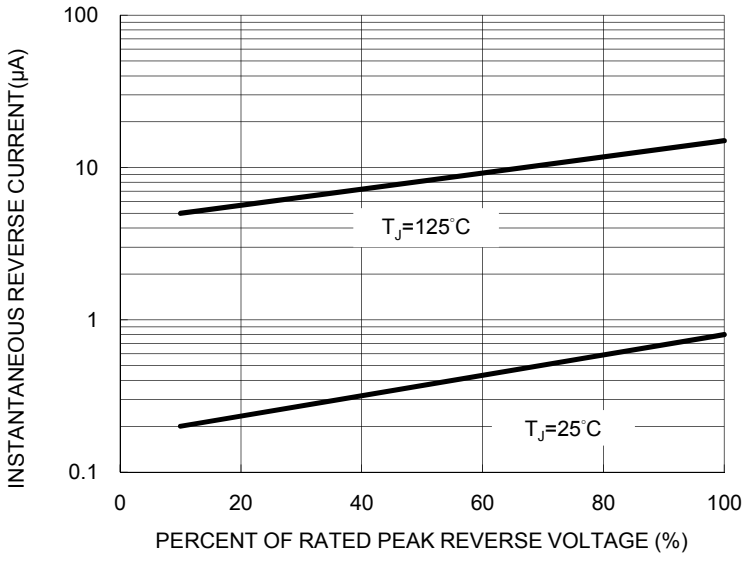


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

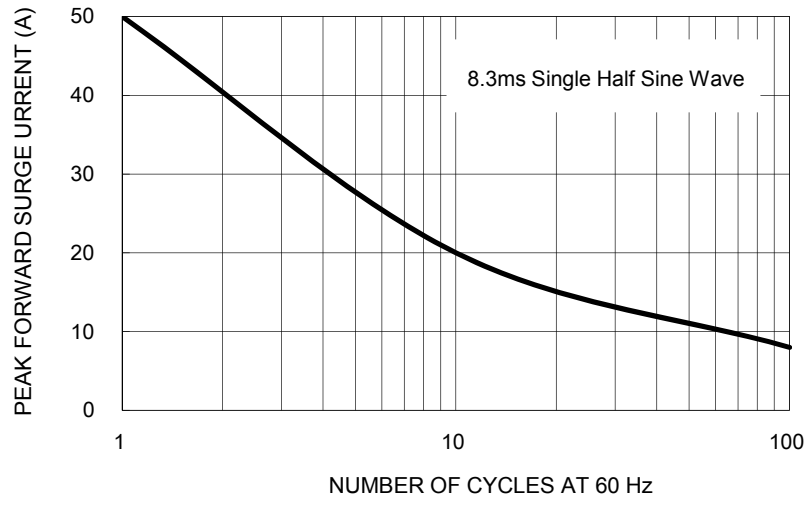


FIG. 4 TYPICAL JUNCTION CAPACITANCE

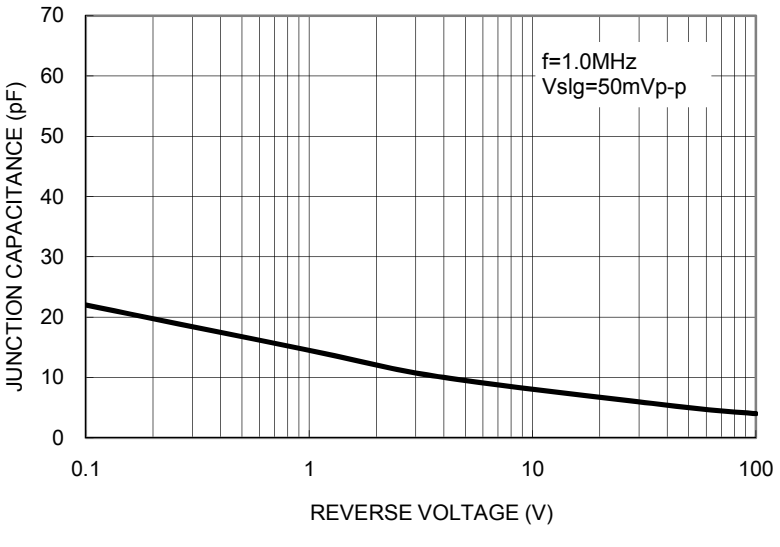


FIG. 5 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

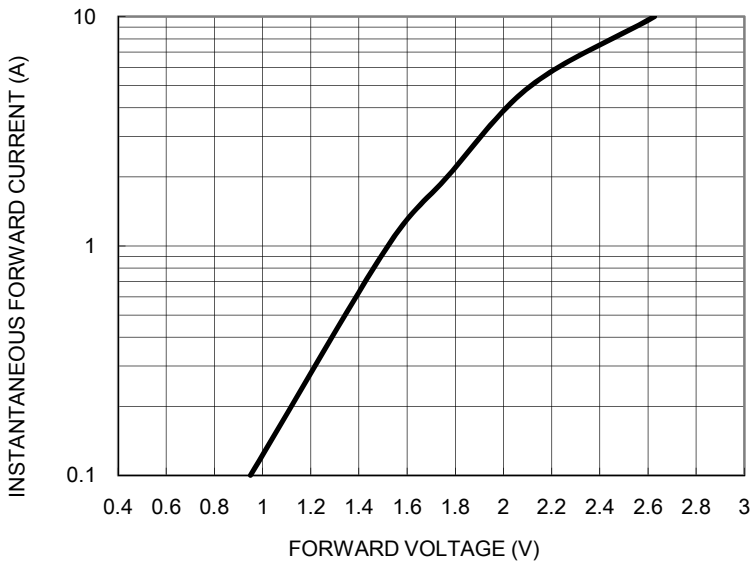
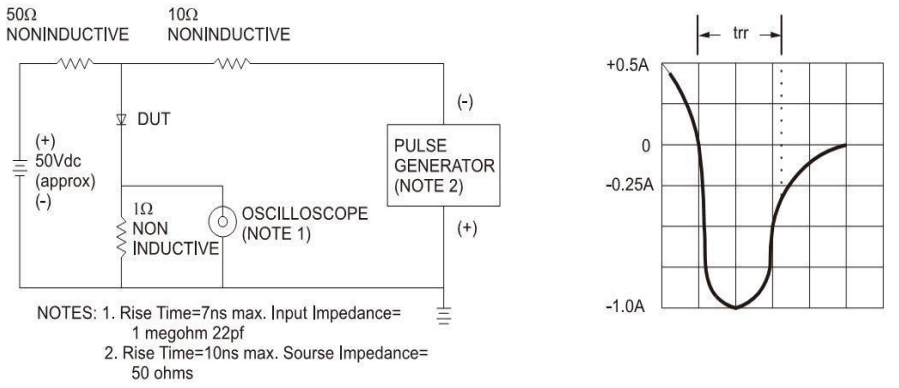
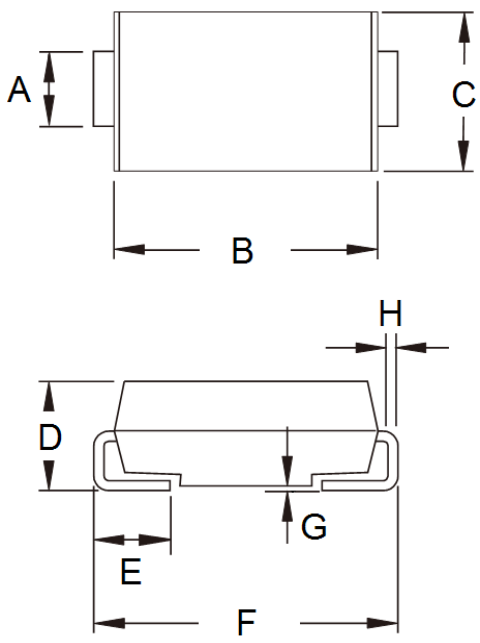


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



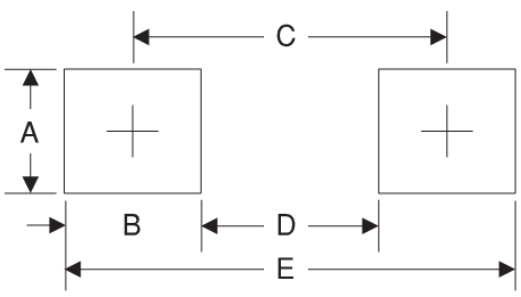
PACKAGE OUTLINE DIMENSIONS

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

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