

1.5A, 200V - 600V High Efficient Surface Mount Rectifiers

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Fast switching for high efficiency
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21







DO-214AC (SMA)

MECHANICAL DATA

Case: DO-214AC (SMA) Molding compound: UL flammability classification rating 94V-0 Part No. with suffix "H" means AEC-Q101 qualified Packing code with suffix "G" means green compound (halogen-free) Moisture sensitivity level: level 1, per J-STD-020 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	BYG20D	BYG20G	BYG20J	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)}	1.5		А	
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load		I _{FSM}	30		A	
Maximum instantaneous forward voltage $I_F = 1.0A$ (Note 1) $I_F = 1.5A$		V _F	1.3 1.4		V	
Maximum reverse current @ rated V_R T _J =25°C T _J =100°C		I _R	1 10		μA	
Pulse energy in avalanche mode, non repetitive (Inductive load switch off), L=120mH		E _{RSM}	20		mJ	
Maximum reverse recovery time (Note 2)		t _{rr}	75		ns	
Typical thermal resistance (Note 3)		R _{θJL}	25		°C/W	
		R _{θJA}	100			
Operating junction temperature range	TJ	- 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: $I_{\text{F}}\text{=}0.5\text{A},\,I_{\text{R}}\text{=}1.0\text{A},\,I_{\text{RR}}\text{=}0.25\text{A}$

Note 3: Mount on PC board with 5mm x 5mm copper pads as heatsink.



BYG20D - BYG20J

Taiwan Semiconductor

PART NO. SUFFIX	PART NO.	PACKING	PACKING CODE	PACKAGE	PACKING	
	SUFFIX	CODE	SUFFIX	PACKAGE	PACKING	
BYG20x H (Note 1)	R3		SMA	1,800 / 7" Plastic reel		
		R2	G	SMA	7,500 / 13" Paper reel	
		M2		SMA	7,500 / 13" Plastic reel	
	F3	G	Folded SMA	1,800 / 7" Plastic reel		
		F2		Folded SMA	7,500 / 13" Paper reel	
		F4		Folded SMA	7,500 / 13" Plastic reel	

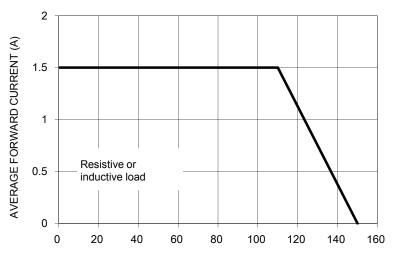
Note 1: "x" defines voltage from 200V (BYG20D) to 600V (BYG20J)

EXAMPLE					
EXAMPLE PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BYG20DHR3G	BYG20D	н	R3	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)



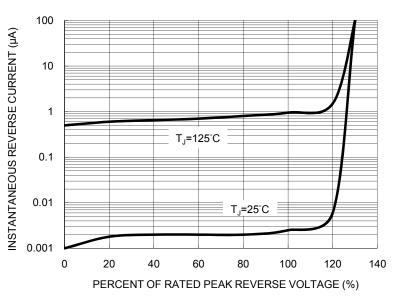


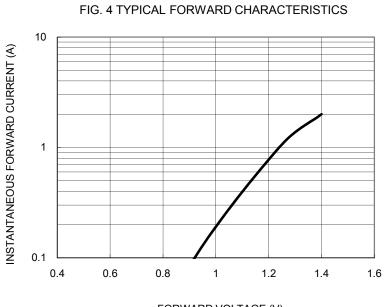
LEAD TEMPERATURE (°C)

FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

NUMBER OF CYCLES AT 60 Hz

FIG. 2 TYPICAL REVERSE CHARACTERISTICS





FORWARD VOLTAGE (V)

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Version: E15



CAPACITANCE (pF)

175 150 125 100 75

FIG. 5 TYPICAL JUNCTION CAPACITANCE

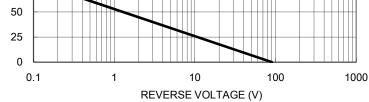
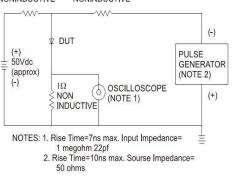
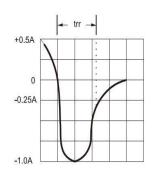


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

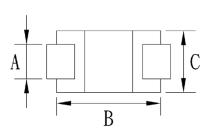
50Ω 10Ω NONINDUCTIVE NONINDUCTIVE

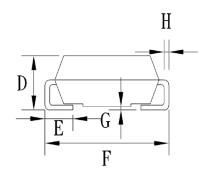




PACKAGE OUTLINE DIMENSIONS

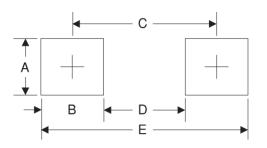
DO-214AC (SMA)





Unit (mm) Unit (inch) DIM. Min Max Min Max А 1.27 1.58 0.050 0.062 В 4.06 4.60 0.160 0.181 С 2.29 2.83 0.090 0.111 D 1.99 2.50 0.078 0.098 Е 0.90 0.035 0.056 1.41 F 4.95 5.33 0.195 0.210 G 0.10 0.20 0.004 0.008 Н 0.15 0.31 0.006 0.012

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)		
- Cymson	,	. ,		
A	1.68	0.066		
В	1.52	0.060		
С	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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