

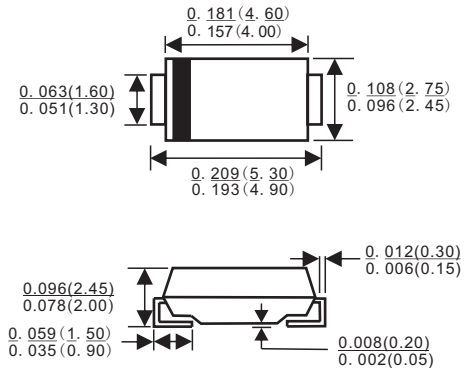
## FEATURES

- ✧ Low profile package
- ✧ Ideal for automated placement
- ✧ Controlled avalanche characteristics
- ✧ Glass passivated junction
- ✧ Low reverse current
- ✧ High surge current capability
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- ✧ Solder dip 260 °C, 40 s
- ✧ Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

## MECHANICAL DATA

- ✧ **Case:** DO-214AC (SMA)
- ✧ Epoxy meets UL 94 V-0 flammability rating
- ✧ **Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102  
E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC-Q101 qualified), meets JESD 201 class 2 whisker test

## SMA/DO-214AC



Dimensions in inches and (millimeters)

<b>MAXIMUM RATINGS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	BYG10D	BYG10G	BYG10J	BYG10K	BYG10M	BYG10Y	UNIT
Device marking code		BYG10D	BYG10G	BYG10J	BYG10K	BYG10M	BYG10Y	
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	1600	V
Average forward current	$I_{F(AV)}$	1.5						A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30						A
Pulse energy in avalanche mode, non repetitive (inductive load switch off) $I_{(BR)R} = 1\text{ A}$ , $T_J = 25\text{ }^\circ\text{C}$ (for BYG10D-BYG10M)	$E_R$	20						mJ
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150						$^\circ\text{C}$

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	BYG10D	BYG10G	BYG10J	BYG10K	BYG10M	BYG10Y	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	$I_F = 1\text{ A}$ $I_F = 1.5\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F$				1.1 1.15			V
Maximum DC reverse current	$V_R = V_{RRM}$	$T_J = 25\text{ }^\circ\text{C}$ $T_J = 100\text{ }^\circ\text{C}$	$I_R$				1 10			$\mu\text{A}$
Maximum reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$		$t_{rr}$				4			$\mu\text{s}$

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	BYG10D	BYG10G	BYG10J	BYG10K	BYG10M	BYG10Y	UNIT	
Typical thermal resistance, junction to lead	$R_{\theta JL}$							25	$^\circ\text{C/W}$
Typical thermal resistance, junction to ambient	$R_{\theta JA}$							150 <sup>(1)</sup> 125 <sup>(2)</sup> 100 <sup>(3)</sup>	$^\circ\text{C/W}$

**Notes:**

- (1) Mounted on epoxy-glass hard tissue
- (2) Mounted on epoxy-glass hard tissue, 50 mm<sup>2</sup> 35  $\mu\text{m}$  Cu
- (3) Mounted on Al-oxide-ceramic ( $\text{Al}_2\text{O}_3$ ), 50 mm<sup>2</sup> 35  $\mu\text{m}$  Cu

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BYG10D-E3/TR	0.064	TR	1800	7" diameter plastic tape and reel
BYG10D-E3/TR3	0.064	TR3	7500	13" diameter plastic tape and reel
BYG10DHE3/TR <sup>(1)</sup>	0.064	TR	1800	7" diameter plastic tape and reel
BYG10DHE3/TR3 <sup>(1)</sup>	0.064	TR3	7500	13" diameter plastic tape and reel

**Note:**

(1) AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

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

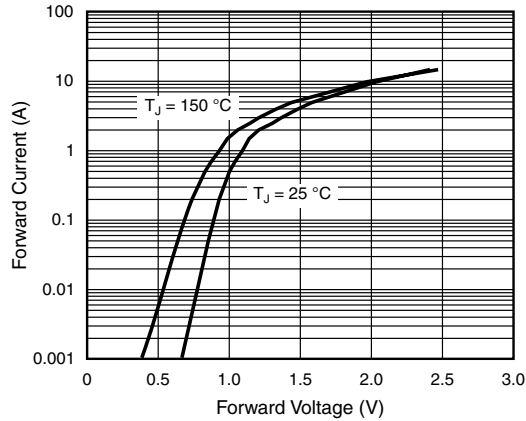


Figure 1. Forward Current vs. Forward Voltage

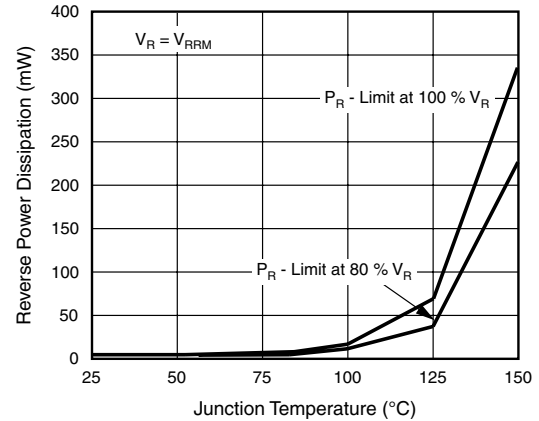


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature

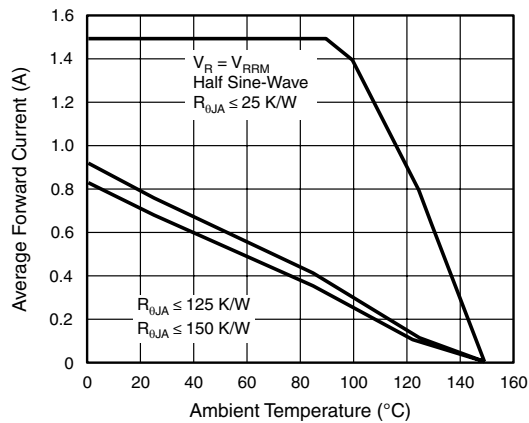


Figure 2. Max. Average Forward Current vs. Ambient Temperature

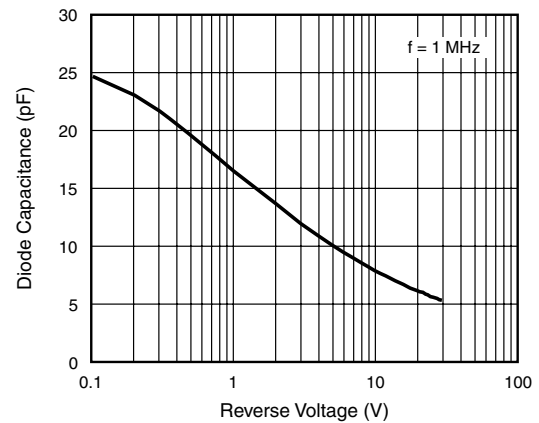


Figure 5. Diode Capacitance vs. Reverse Voltage

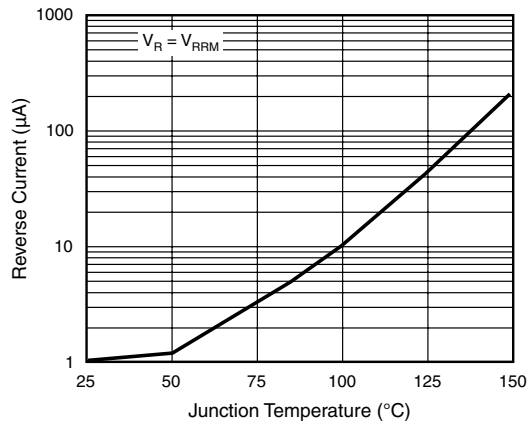


Figure 3. Reverse Current vs. Junction Temperature

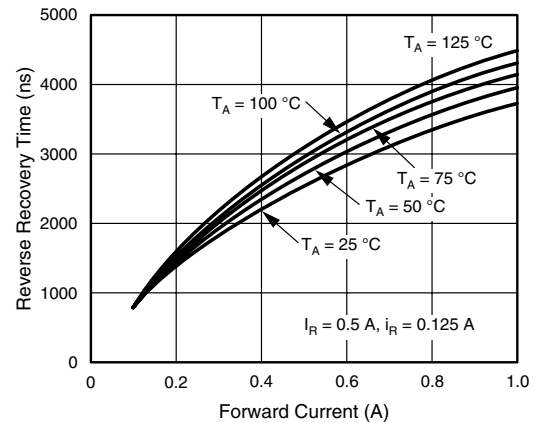


Figure 6. Reverse Recovery Time vs. Forward Current

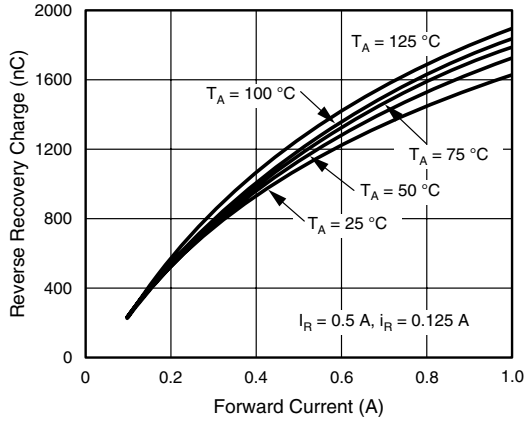


Figure 7. Reverse Recovery Charge vs. Forward Current

PACKAGE	SPQ/PCS	CARTON SPQ/PCS	CARTON SIZE/CM	CARTON GW/KG	CARTON NW/KG
SMA	5000/REEL	80000	36X30.6X31	12.00	11.00

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