Excellent Integrated System Limited

Stocking Distributor

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Vishay Semiconductor/Diodes Division
BYG24D-E3/TR3

For any questions, you can email us directly:
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BYG24D-E3/HE3, BYG24G-E3/HE3, BYG24J-E3/HE3

Fast Avalanche SMD Rectifier

DO-214AC (SMA)

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated junction
- Low reverse current
- Soft recovery characteristics
- Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.5 A
V_{RRM}	200 V, 400 V, 600 V
I_{FSM}	30 A
I_R	1.0 µA
V_F	1.25 V
t_{rr}	140 ns
E_R	20 mJ
T_J max.	150 °C
Package	DO-214AC (SMA)
Diode variation	Single die

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive, and telecommunication.

MECHANICAL DATA

Case: DO-214AC (SMA)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	BYG24D	BYG24G	BYG24J	UNIT
Device marking code		BYG24D	BYG24G	BYG24J	
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	V
Average forward current at T_A = 65 °C	$I_{F(AV)}$	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 A, T_J = 25 °C	E_R	20			mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150			°C

BYG24D-E3/HE3, BYG24G-E3/HE3, BYG24J-E3/HE3

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	BYG24D	BYG24G	BYG24J	UNIT
Minimum breakdown voltage	I_R = 100 µA		V_{BR}	200	400	600	V
Maximum instantaneous forward voltage	I_F = 1 A	T_J = 25 °C	V_F (1)	1.15			V
	I_F = 1.5 A			1.25			
Maximum reverse current	$V_R = V_{RRM}$	T_J = 25 °C	I_R	1			µA
		T_J = 100 °C		10			
Maximum reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	140			ns

Note

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	BYG24D	BYG24G	BYG24J	UNIT
Junction to case	$R_{\theta JC}$	25			°C/W
Maximum thermal resistance, junction to ambient	$R_{\theta JA}$ (1)	150			°C/W
	$R_{\theta JA}$ (2)	125			

Notes

(1) Mounted on epoxy-glass hard tissue 35 µm x 17 mm^2 cooper area per electrode
(2) Mounted on epoxy-glass hard tissue 35 µm x 50 mm^2 cooper area per electrode

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BYG24D-E3/TR	0.064	TR	1800	7" diameter plastic tape and reel
BYG24D-E3/TR3	0.064	TR3	7500	13" diameter plastic tape and reel
BYG24DHE3/TR (1)	0.064	TR	1800	7" diameter plastic tape and reel
BYG24DHE3/TR3 (1)	0.064	TR3	7500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

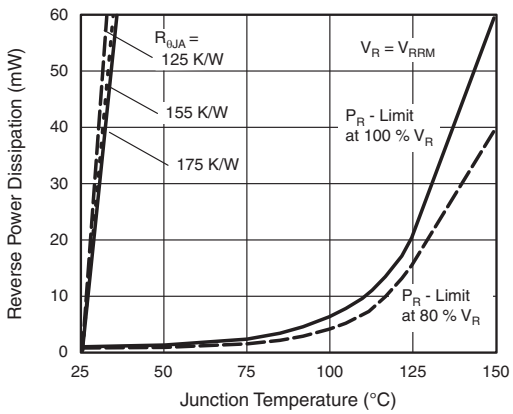


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

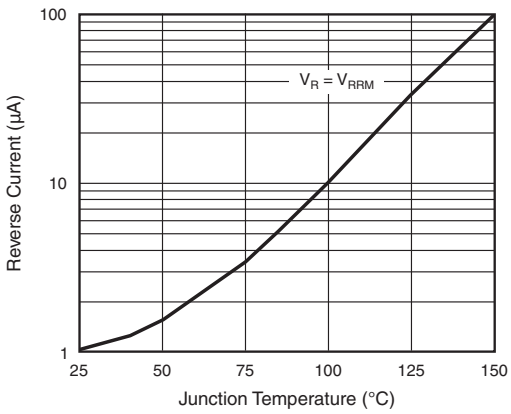


Fig. 2 - Reverse Current vs. Junction Temperature

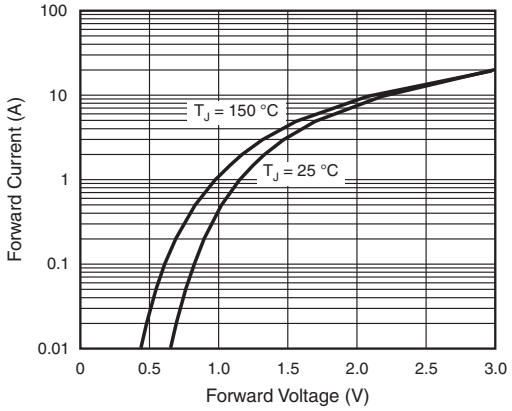


Fig. 3 - Forward Current vs. Forward Voltage

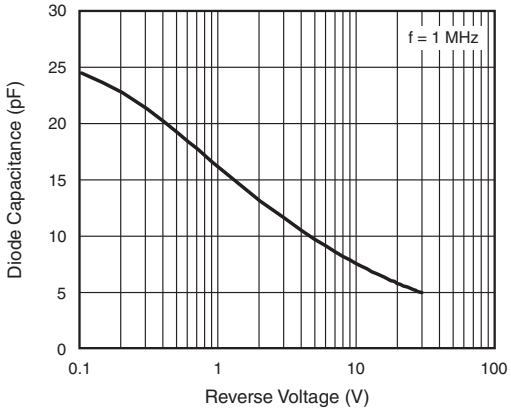


Fig. 5 - Diode Capacitance vs. Reverse Voltage

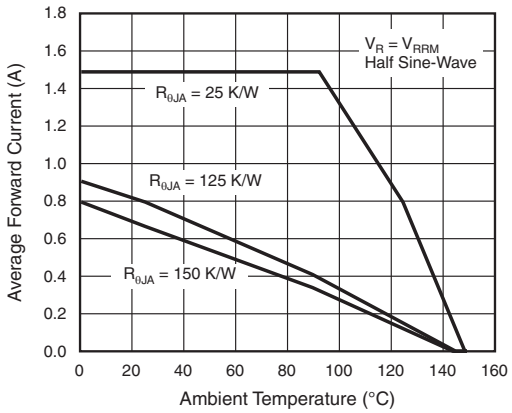
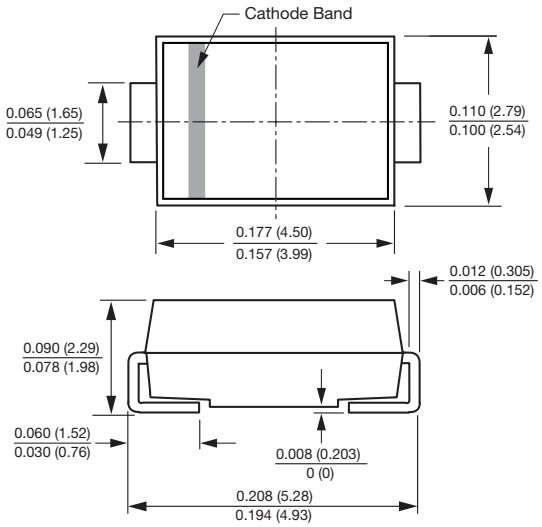


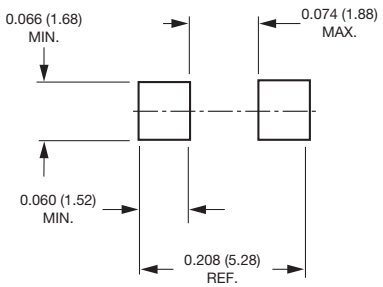
Fig. 4 - Average Forward Current vs. Ambient Temperature

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout



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