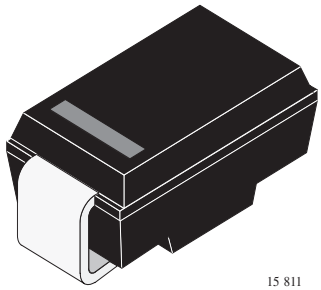
Ultrafast Avalanche SMD Rectifier

Features

- Glass passivated junction
- Low reverse current
- High reverse voltage
- Fast reverse recovery time
- Wave and reflow solderable



Applications

Freewheeling diodes in SMPS and converters
Snubber diodes

Order Information

Part Number	Part Differentiation
BYG23M	V_R = 1000 V @ I_{FAV} = 1.5 A

Absolute Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Value	Unit
Reverse voltage = Repetitive peak reverse voltage			$V_R = V_{RRM}$	1000	V
Peak forward surge current	t_p = 10 ms, half sinewave		I_{FSM}	30	A
Average forward current	T_{amb} = 65 °C		I_{FAV}	1.5	A
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 150	°C
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}$ = 1 A		E_R	20	mJ

Maximum Thermal Resistance

T_j = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Value	Unit
Junction case			R_{thJC}	25	K/W
Junction ambient	mounted on epoxy-glass hard tissue, 17 mm^2 35 µm Cu		R_{thJA}	150	K/W
	mounted on epoxy-glass hard tissue, 50 mm^2 35 µm Cu		R_{thJA}	125	K/W
	mounted on Al-oxid-ceramic (Al_2O_3), 50 mm^2 35 µm Cu		R_{thJA}	100	K/W

Electrical Characteristics

T_j = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Min	Typ.	Max	Unit
Forward voltage	I_F = 1.0 A		V_F			1.7	V
	I_F = 1.0 A, T_J = 150 °C		V_F			1.35	V
Reverse current	$V_R = V_{RRM}$		I_R			5	µA
	$V_R = V_{RRM}$, T_j = 125 °C		I_R			50	µA
Breakdown voltage	I_R = 100 µA		$V_{(BR)R}$	1000			V
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A		t_{rr}			75	ns

Charateristics (T_j = 25°C unless otherwise specified)

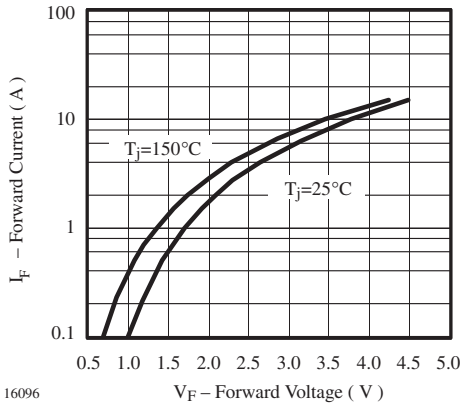


Figure 1. Max. Forward Current vs. Forward Voltage

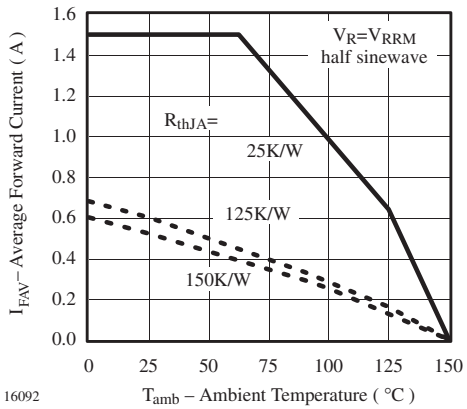


Figure 2. Max. Average Forward Current vs. Ambient Temperature

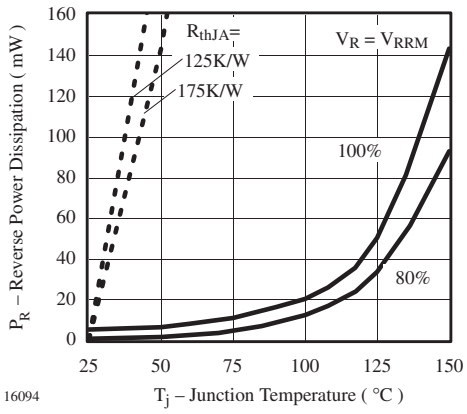


Figure 3. Max. Reverse Power Dissipation vs. Junction Temperature

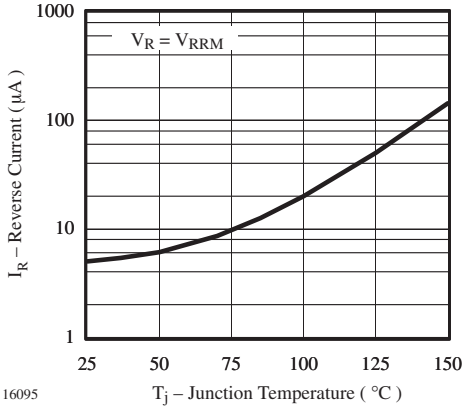


Figure 4. Max. Reverse Current vs. Junction Temperature

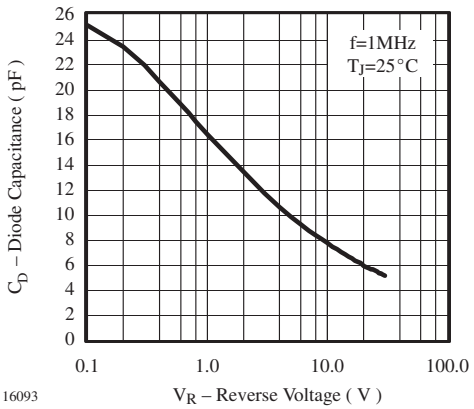


Figure 5. Typ. Diode Capacitance vs. Reverse Voltage

Dimensions in mm