

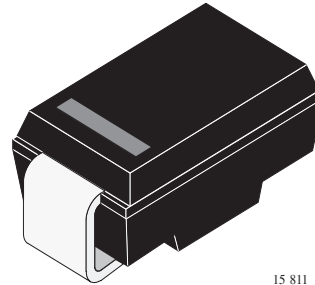
# Ultrafast Avalanche SMD Rectifier

## 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



15 811

## Order Information

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

## Absolute Maximum Ratings

$T_j = 25\text{ }^\circ\text{C}$ , 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	$t_p = 10\text{ ms}$ , half sinewave		$I_{FSM}$	30	A
Average forward current	$T_{amb} = 65\text{ }^\circ\text{C}$		$I_{FAV}$	1.5	A
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 150	$^\circ\text{C}$
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R} = 1\text{ A}$		$E_R$	20	mJ

## Maximum Thermal Resistance

$T_j = 25\text{ }^\circ\text{C}$ , 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 <sup>2</sup> 35 $\mu\text{m}$ Cu		$R_{thJA}$	150	K/W
	mounted on epoxy-glass hard tissue, 50 mm <sup>2</sup> 35 $\mu\text{m}$ Cu		$R_{thJA}$	125	K/W
	mounted on Al-oxid-ceramic ( $\text{Al}_2\text{O}_3$ ), 50 mm <sup>2</sup> 35 $\mu\text{m}$ Cu		$R_{thJA}$	100	K/W

## Electrical Characteristics

$T_j = 25\text{ }^\circ\text{C}$ , unless otherwise specified

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

Charateristics ( $T_j = 25^\circ\text{C}$  unless otherwise specified)

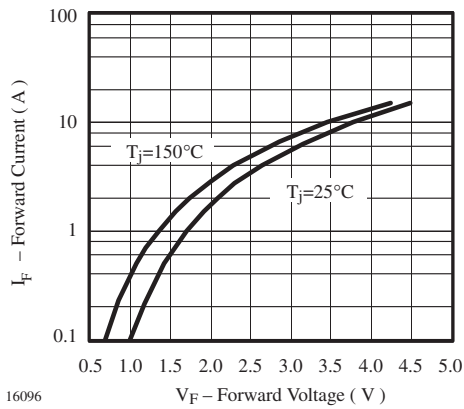


Figure 1. Max. Forward Current vs. Forward Voltage

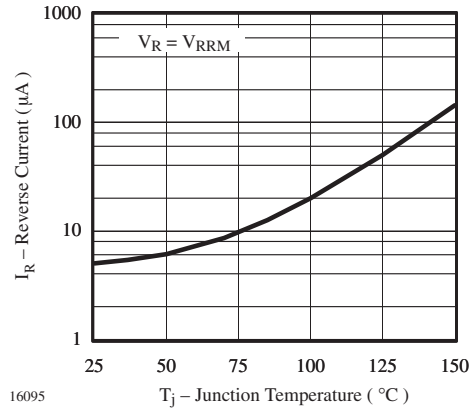


Figure 4. Max. Reverse Current vs. Junction Temperature

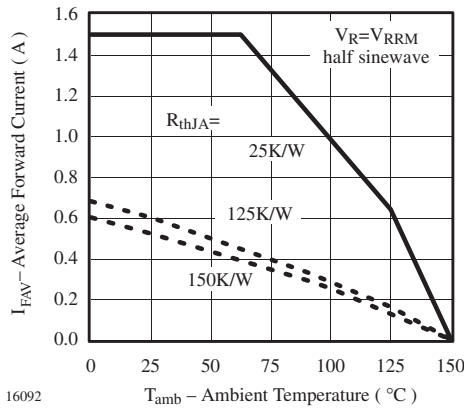


Figure 2. Max. Average Forward Current vs. Ambient Temperature

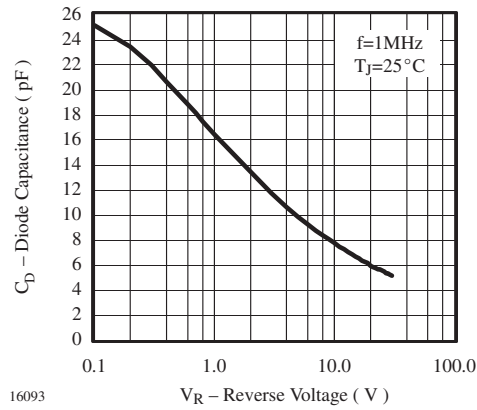


Figure 5. Typ. Diode Capacitance vs. Reverse Voltage

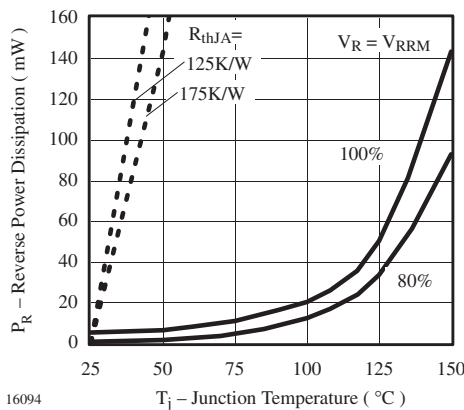
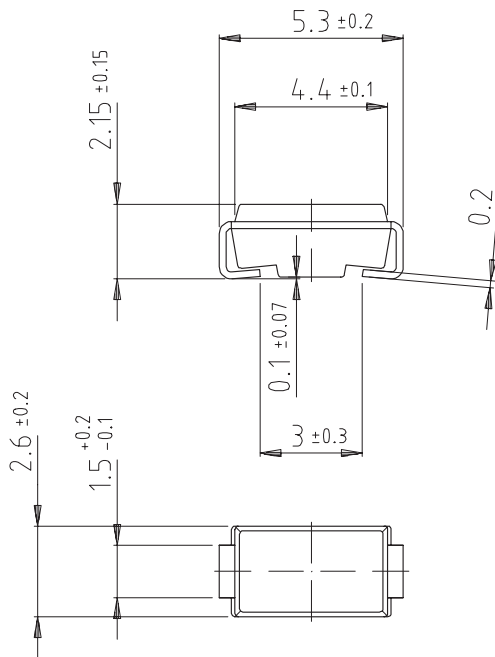
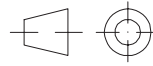


Figure 3. Max. Reverse Power Dissipation vs. Junction Temperature

## Dimensions in mm



Plastic case JEDEC DO 214  
similar to SMA  
Cathode indicated by a band



technical drawings  
according to DIN  
specifications

14275



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