

# Standard Avalanche SMD Rectifier

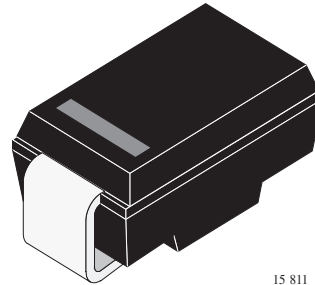
## Features

- Controlled avalanche characteristics
- Glass passivated junction
- Low reverse current
- High surge current capability
- Wave and reflow solderable

## Applications

Surface mounting

General purpose rectifier



15 811

## Order Information

Part Number	Part Differentiation
BYG10D	$V_R = 200 \text{ V @ } I_{FAV} = 1.5 \text{ A}$
BYG10G	$V_R = 400 \text{ V @ } I_{FAV} = 1.5 \text{ A}$
BYG10J	$V_R = 600 \text{ V @ } I_{FAV} = 1.5 \text{ A}$
BYG10K	$V_R = 800 \text{ V @ } I_{FAV} = 1.5 \text{ A}$
BYG10M	$V_R = 1000 \text{ V @ } I_{FAV} = 1.5 \text{ A}$
BYG10Y	$V_R = 1600 \text{ V @ } I_{FAV} = 1.5 \text{ A}$

## 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		BYG10D	$V_R = V_{RRM}$	200	V
		BYG10G	$V_R = V_{RRM}$	400	V
		BYG10J	$V_R = V_{RRM}$	600	V
		BYG10K	$V_R = V_{RRM}$	800	V
		BYG10M	$V_R = V_{RRM}$	1000	V
		BYG10Y	$V_R = V_{RRM}$	1600	V
Peak forward surge current	$t_p = 10 \text{ ms}$ , half sinewave		$I_{FSM}$	30	A
Average forward current			$I_{FAV}$	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)	$I_{(BR)R} = 1 \text{ A}$ , $T_j = 25 \text{ }^\circ\text{C}$	BYG10D- BYG10M	$E_R$	20	mJ

## Maximum Thermal Resistance $T_j = 25 \text{ }^\circ\text{C}$ , unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Value	Unit
Junction lead	$T_L = \text{const.}$		$R_{thJL}$	25	K/W
Junction ambient	mounted on epoxy-glass hard tissue		$R_{thJA}$	150	K/W
	mounted on epoxy-glass hard tissue, $50 \text{ mm}^2$ $35 \text{ } \mu\text{m}$ Cu		$R_{thJA}$	125	K/W
	mounted on Al-oxid-ceramic ( $\text{Al}_2\text{O}_3$ ), $50 \text{ mm}^2$ $35 \text{ } \mu\text{m}$ 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	$I_F = 1\text{ A}$		$V_F$			1.1	V
	$I_F = 1.5\text{ A}$		$V_F$			1.15	V
Reverse current	$V_R = V_{RRM}$		$I_R$			1	$\mu\text{A}$
	$V_R = V_{RRM}, T_j = 100\text{ }^\circ\text{C}$		$I_R$			10	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$		$t_{rr}$			4	$\mu\text{s}$

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

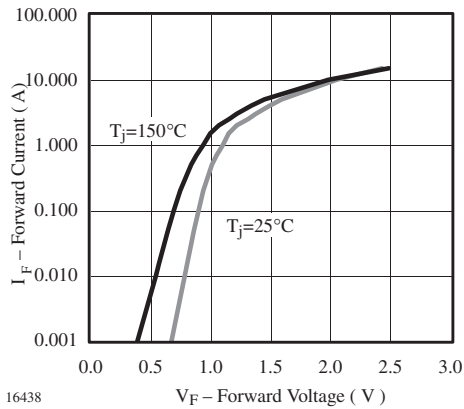


Figure 1. Forward Current vs. Forward Voltage

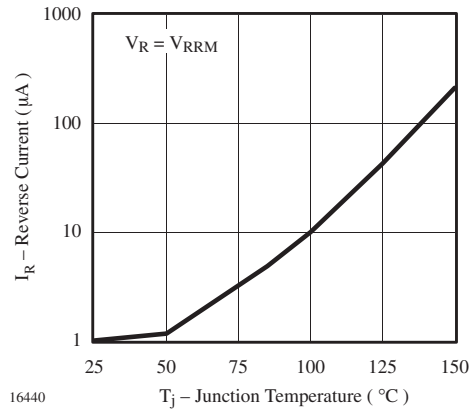


Figure 3. Reverse Current vs. Junction Temperature

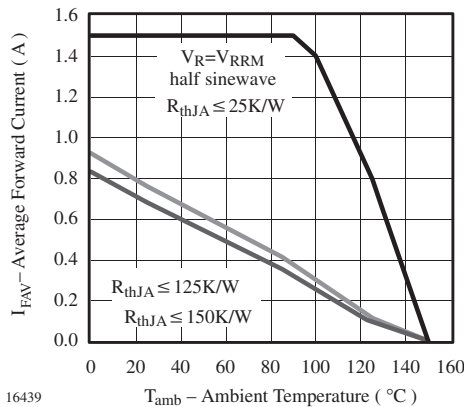


Figure 2. Max. Average Forward Current vs. Ambient Temperature

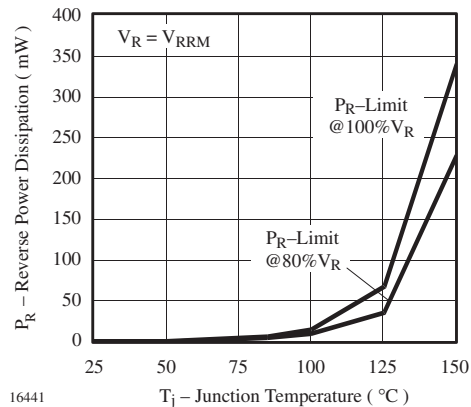
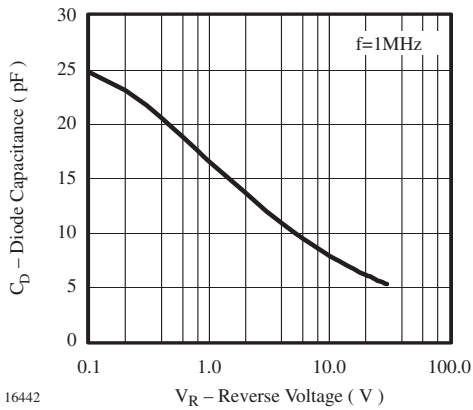
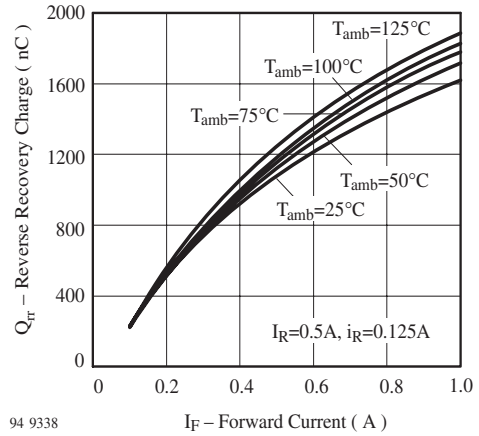


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature



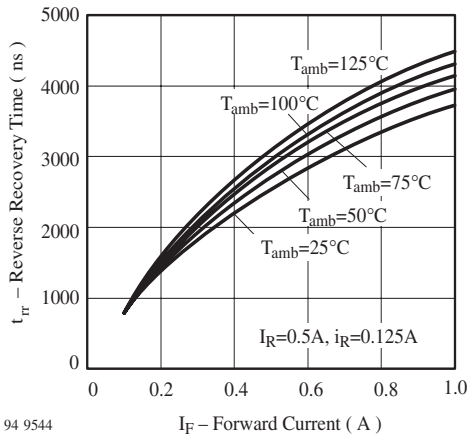
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Figure 5. Diode Capacitance vs. Reverse Voltage



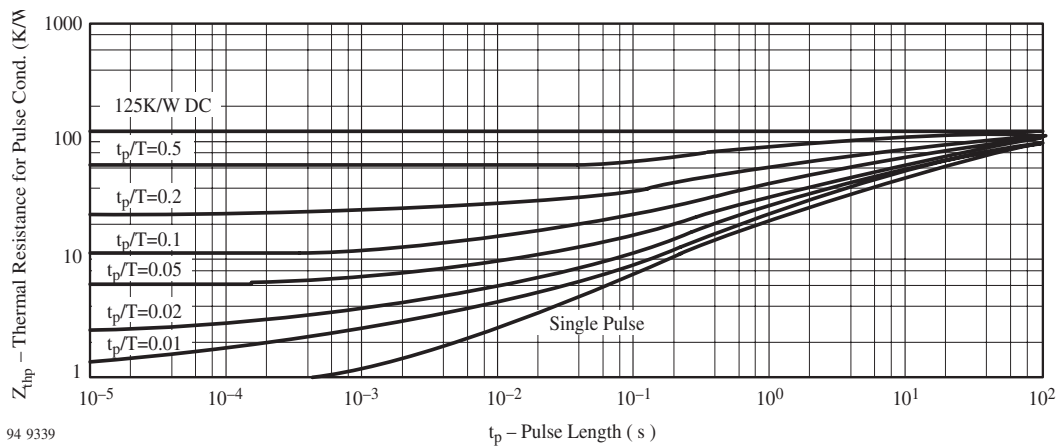
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Figure 7. Typ. Reverse Recovery Charge vs. Forward Current



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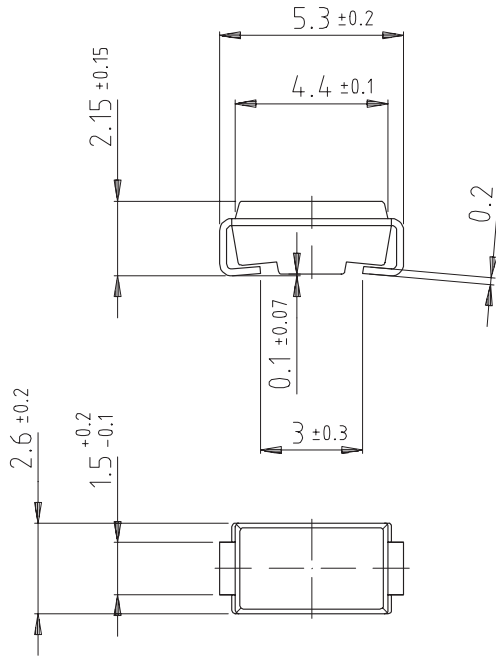
Figure 6. Typ. Reverse Recovery Time vs. Forward Current



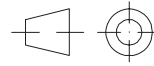
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Figure 8. Thermal Response

## Dimensions in mm



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



14275

technical drawings  
according to DIN  
specifications