

Standard Avalanche SMD Rectifier

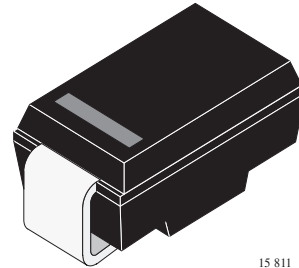
Features

- 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 mm ² 35 μm Cu		R_{thJA}	125	K/W
	mounted on Al-oxid-ceramic (Al ₂ O ₃), 50 mm ² 35 μm Cu		R_{thJA}	100	K/W

Electrical Characteristics

$T_j = 25^\circ\text{C}$, 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	μA
	$V_R = V_{RRM}, T_j = 100^\circ\text{C}$		I_R			10	μA
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$		t_{rr}			4	μs

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

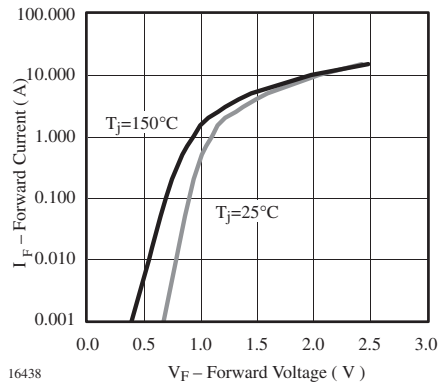


Figure 1. Forward Current vs. Forward Voltage

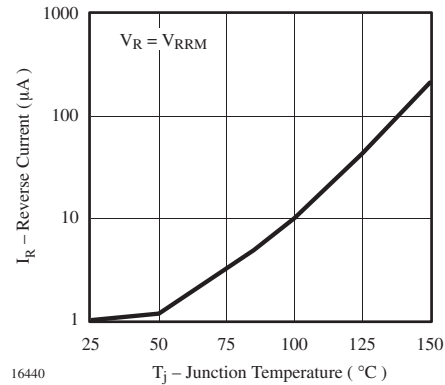


Figure 3. Reverse Current vs. Junction Temperature

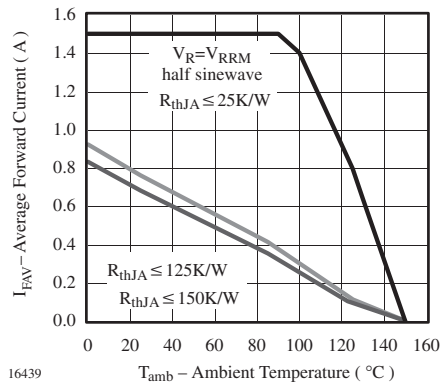


Figure 2. Max. Average Forward Current vs. Ambient Temperature

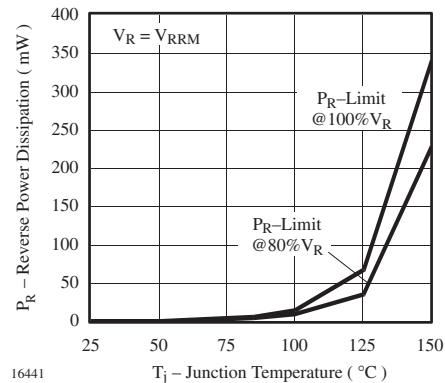
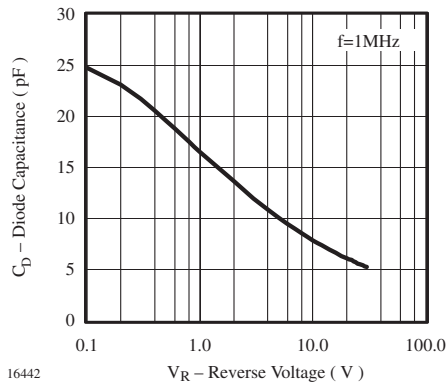
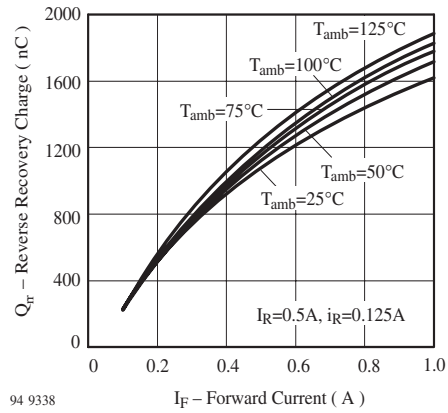


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature



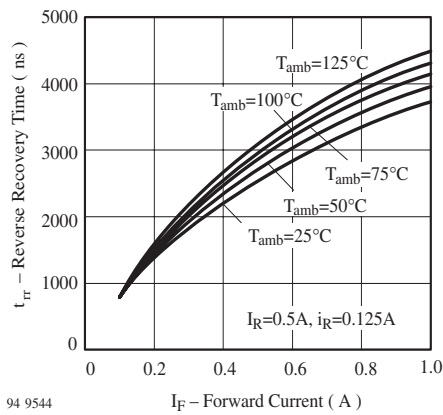
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Figure 5. Diode Capacitance vs. Reverse Voltage



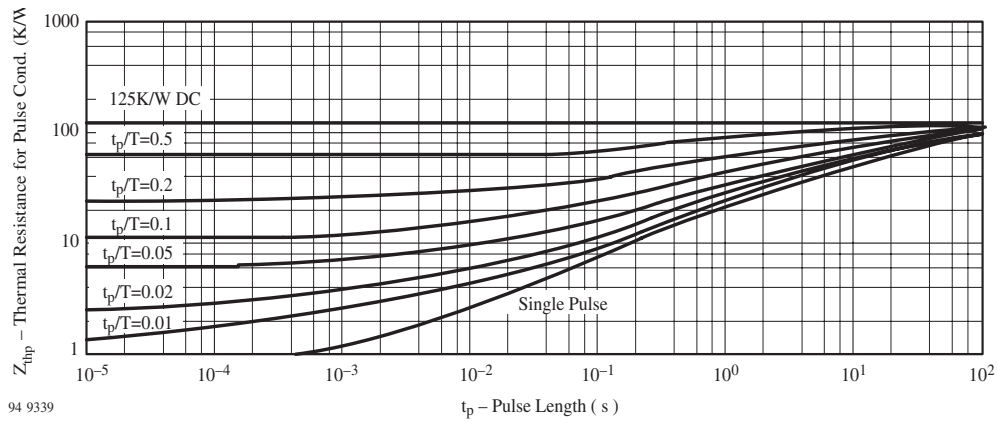
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Figure 7. Typ. Reverse Recovery Charge vs. Forward Current



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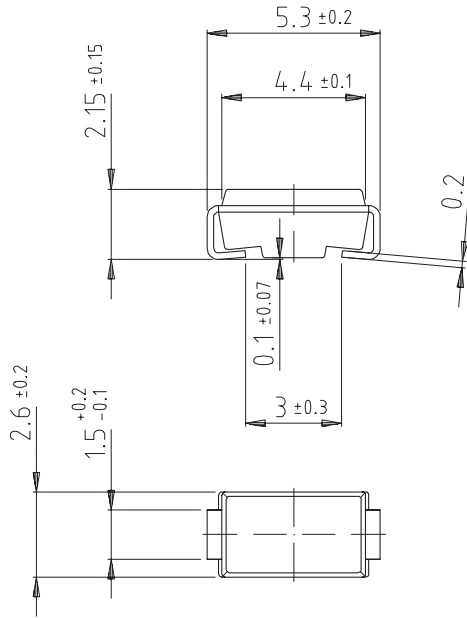
Figure 6. Typ. Reverse Recovery Time vs. Forward Current



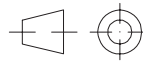
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Figure 8. Thermal Response

Dimensions in mm



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



technical drawings
according to DIN
specifications

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