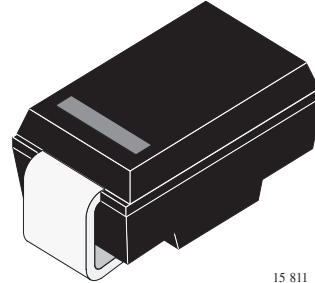


Ultrafast Avalanche SMD Rectifier

Features

- Glass passivated junction
- Low reverse current
- Soft recovery characteristics
- Fast reverse recovery time
- Good switching characteristics
- Wave and reflow solderable



15 811

Applications

Surface mounting

Fast rectifier

Freewheeling diodes in SMPS and converters

Snubber diodes

Order Information

Part Number	Part Differentiation
BYG20D	$V_R = 200 \text{ V} @ I_{FAV} = 1.5 \text{ A}$
BYG20G	$V_R = 400 \text{ V} @ I_{FAV} = 1.5 \text{ A}$
BYG20J	$V_R = 600 \text{ V} @ I_{FAV} = 1.5 \text{ A}$

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		BYG20D	$V_R = V_{RRM}$	200	V
		BYG20G	$V_R = V_{RRM}$	400	V
		BYG20J	$V_R = V_{RRM}$	600	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)	$I_{(BR)R} = 1 \text{ A}$, $T_j = 25 \text{ }^\circ\text{C}$		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 $35 \text{ } \mu\text{m}$ Cu		R_{thJA}	125	K/W
	mounted on Al-oxid-ceramic (Al_2O_3), 50 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			1.3	V
	$I_F = 1.5\text{ A}$		V_F			1.4	V
Reverse current	$V_R = V_{RRM}$		I_R			1	μA
	$V_R = V_{RRM}, T_j = 100\text{ }^\circ\text{C}$		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}			75	ns

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

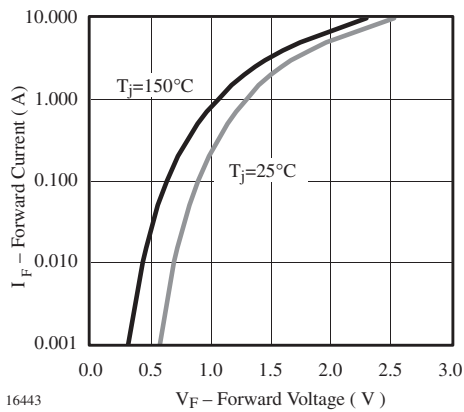


Figure 1. Forward Current vs. Forward Voltage

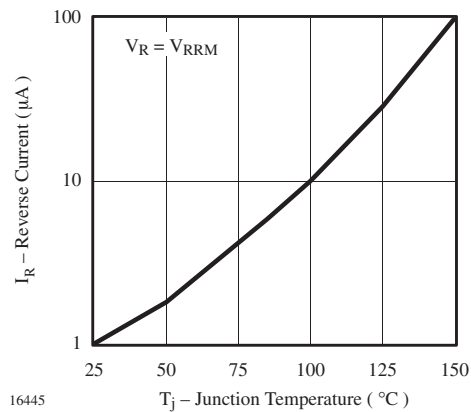


Figure 3. Reverse Current vs. Junction Temperature

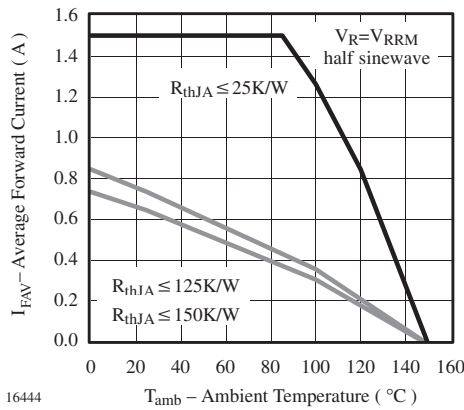


Figure 2. Max. Average Forward Current vs. Ambient Temperature

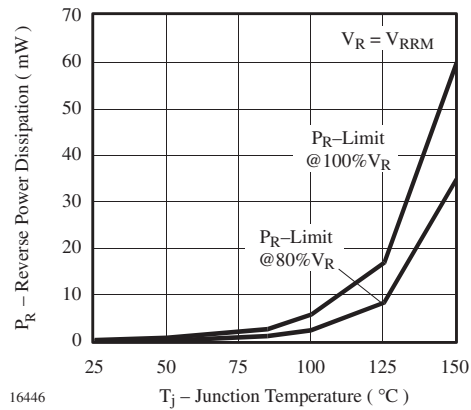
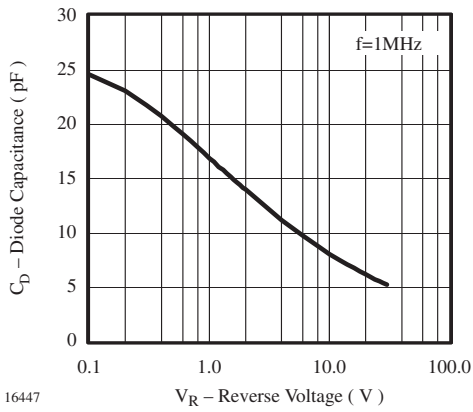
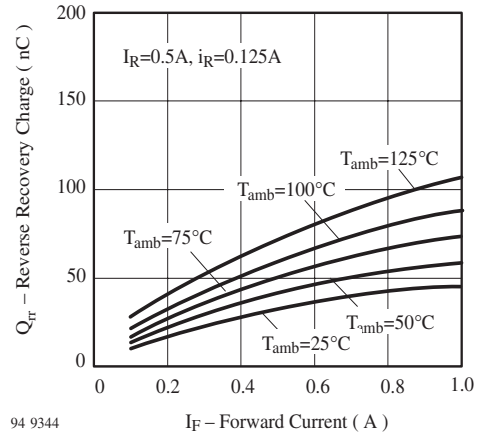


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature



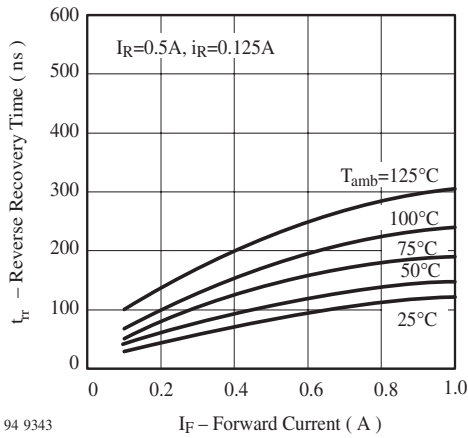
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Figure 5. Diode Capacitance vs. Reverse Voltage



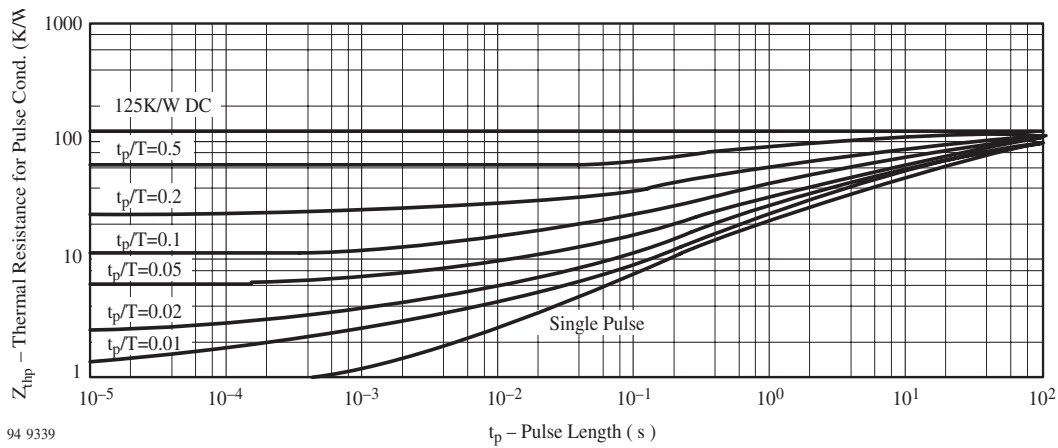
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Figure 7. Max. Reverse Recovery Charge vs. Forward Current



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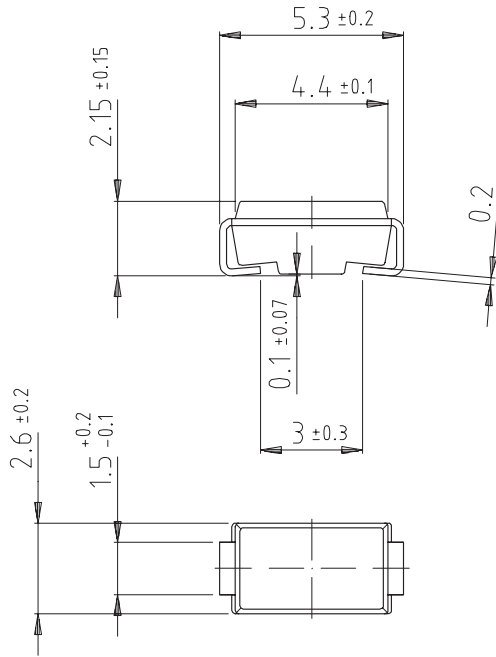
Figure 6. Max. Reverse Recovery Time vs. Forward Current



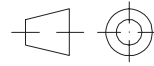
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Figure 8. Thermal Response

Dimensions in mm



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



technical drawings
according to DIN
specifications

14275