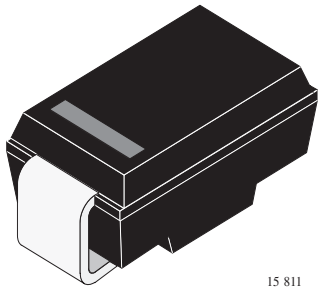
Ultrafast Avalanche SMD Rectifier

Features

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



Applications

Surface mounting
Fast rectifier
Freewheeling diodes in SMPS and converters
Snubber diodes

Order Information

Part Number	Part Differentiation
BYG20D	V_R = 200 V @ I_{FAV} = 1.5 A
BYG20G	V_R = 400 V @ I_{FAV} = 1.5 A
BYG20J	V_R = 600 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		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 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	°C
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}$ = 1 A, T_j = 25 °C		E_R	20	mJ

Maximum Thermal Resistance

T_j = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Value	Unit
Junction lead	T_L = 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_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 A		V_F			1.3	V
	I_F = 1.5 A		V_F			1.4	V
Reverse current	$V_R = V_{RRM}$		I_R			1	µA
	$V_R = V_{RRM}$, T_j = 100 °C		I_R			10	µA
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)

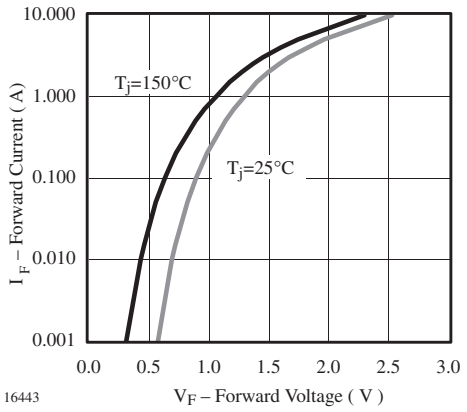


Figure 1. Forward Current vs. Forward Voltage

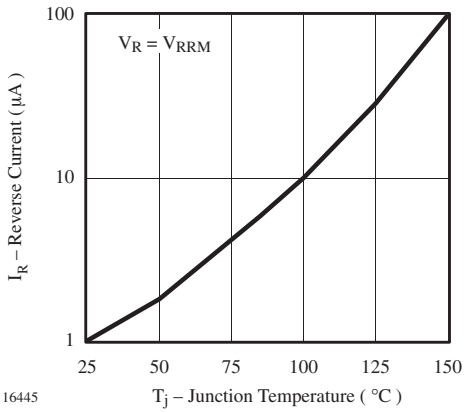


Figure 3. Reverse Current vs. Junction Temperature

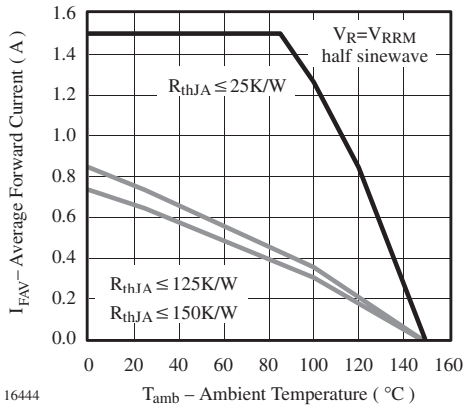


Figure 2. Max. Average Forward Current vs. Ambient Temperature

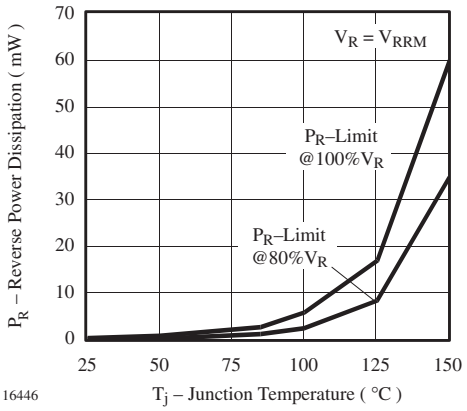


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature

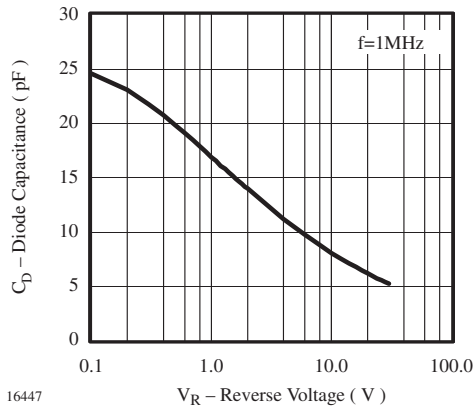


Figure 5. Diode Capacitance vs. Reverse Voltage

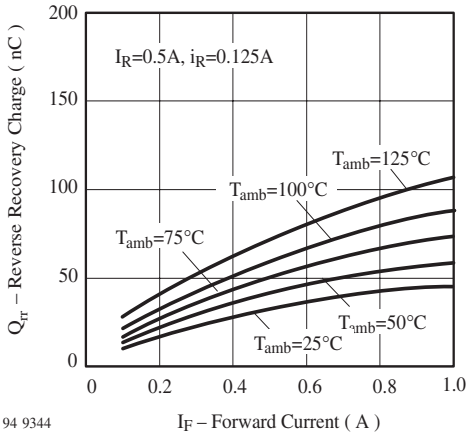


Figure 7. Max. Reverse Recovery Charge vs. Forward Current

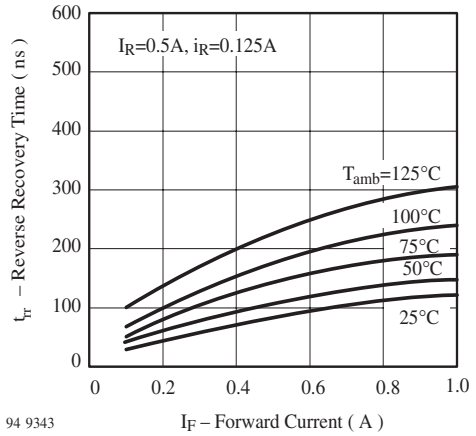


Figure 6. Max. Reverse Recovery Time vs. Forward Current

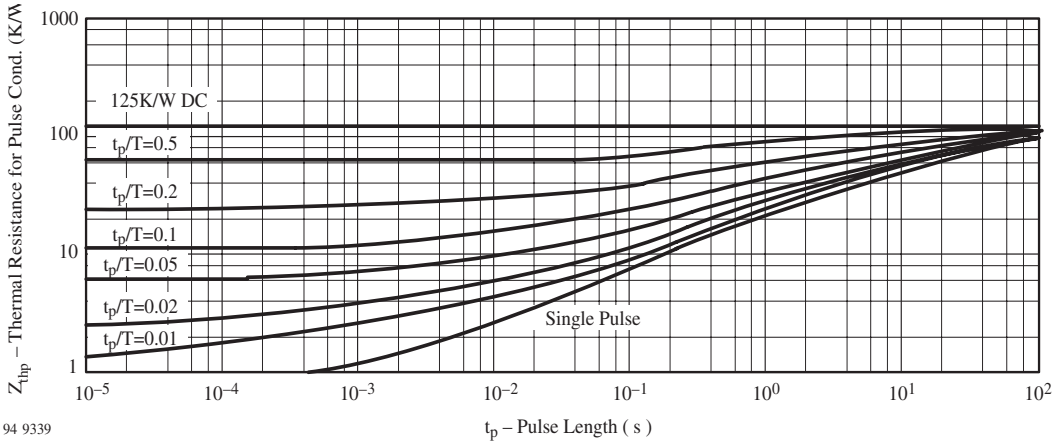
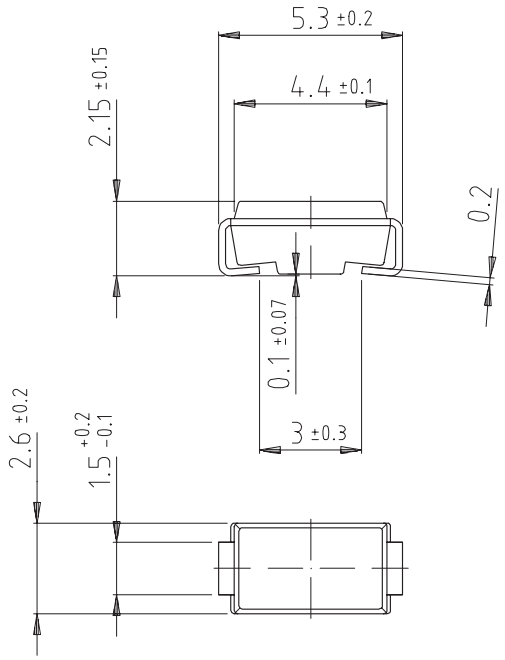
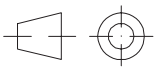


Figure 8. Thermal Response

Dimensions in mm



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



technical drawings
according to DIN
specifications

14275