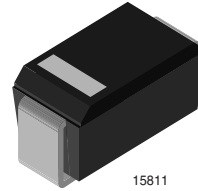


Ultra Fast Avalanche SMD Rectifier

Features

- Controlled avalanche characteristic
- Glass passivated junction
- Low reverse current
- Low forward voltage
- Soft recovery characteristic
- Very fast reverse recovery time
- Good switching characteristics
- Wave and reflow solderable



Applications

Surface mounting
 Super fast rectifier
 Freewheeling diodes in SMPS and converters
 Snubber diodes

Parts Table

Part	Type differentiation	Package
BYG22A	$V_R = 50 \text{ V @ } I_{FAV} = 2 \text{ A}$	DO-214AC
BYG22B	$V_R = 100 \text{ V @ } I_{FAV} = 2 \text{ A}$	DO-214AC
BYG22D	$V_R = 200 \text{ V @ } I_{FAV} = 2 \text{ A}$	DO-214AC

Absolute Maximum Ratings

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

Parameter	Test condition	Part	Symbol	Value	Unit
Reverse voltage = Repetitive peak reverse voltage		BYG22A	$V_R = V_{RRM}$	50	V
		BYG22B	$V_R = V_{RRM}$	100	V
		BYG22D		200	V
Peak forward surge current	$t_p = 10 \text{ ms}$, half sinewave		I_{FSM}	35	A
Average forward current			I_{FAV}	2	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

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

Parameter	Test condition	Part	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

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

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	$I_F = 1\text{ A}$		V_F			1	V
	$I_F = 2\text{ A}$		V_F			1.1	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}			25	ns

Typical Characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

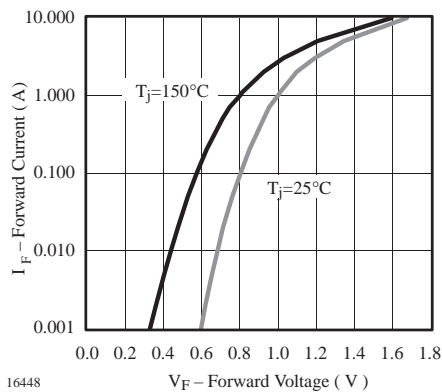


Figure 1. Forward Current vs. Forward Voltage

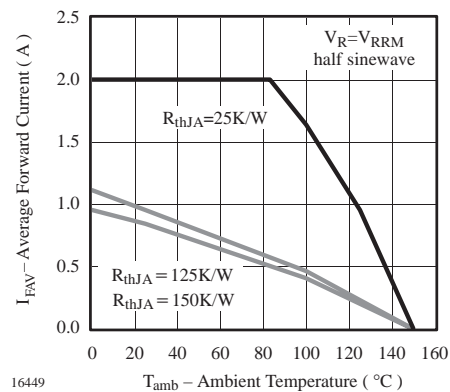


Figure 2. Max. Average Forward Current vs. Ambient Temperature

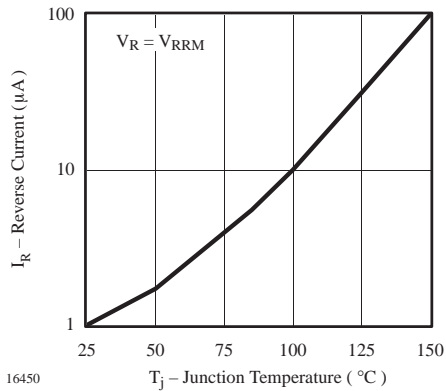


Figure 3. Reverse Current vs. Junction Temperature

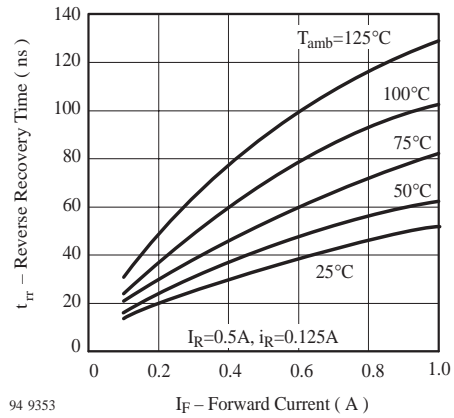


Figure 6. Max. Reverse Recovery Time vs. Forward Current

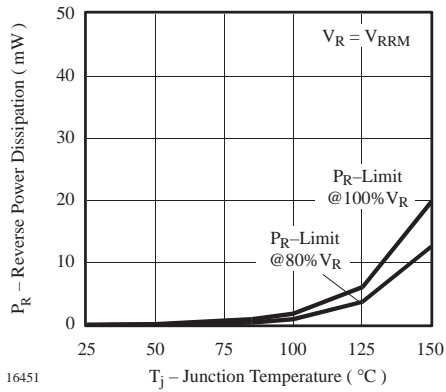


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature

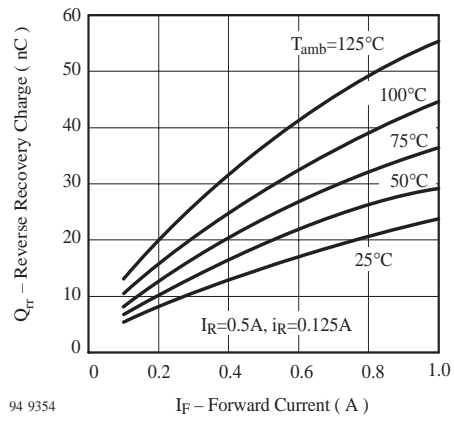


Figure 7. Max. Reverse Recovery Charge vs. Forward Current

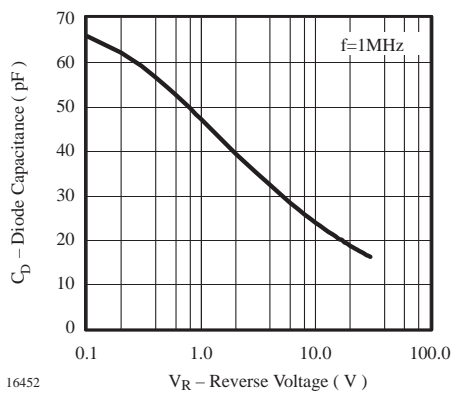


Figure 5. Diode Capacitance vs. Reverse Voltage

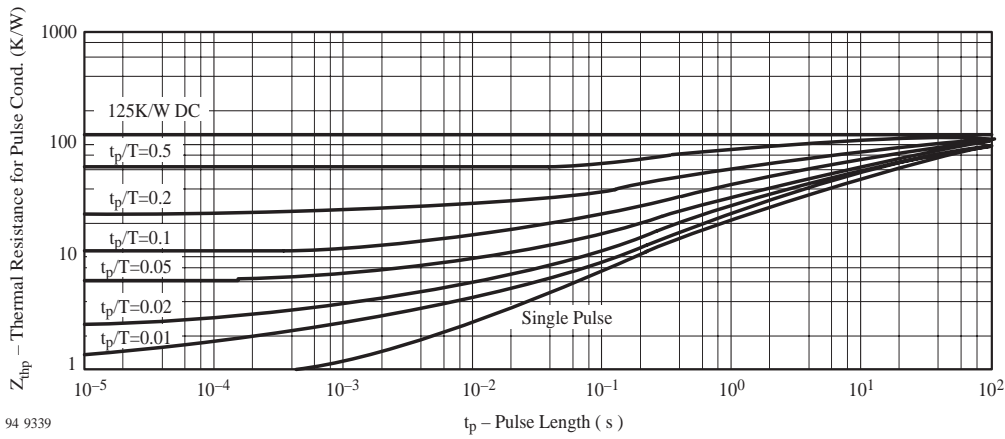
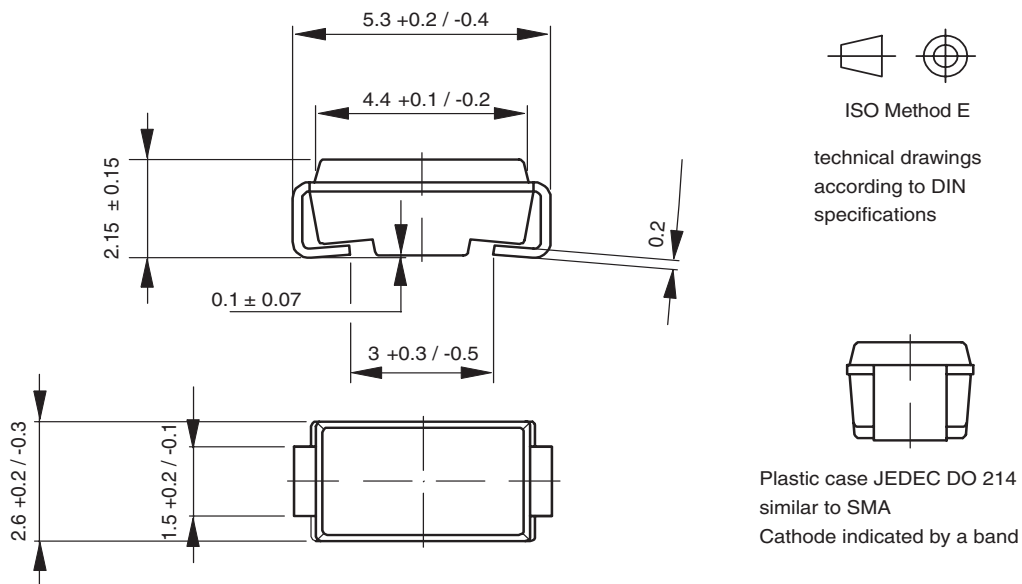


Figure 8. Thermal Response

Package Dimensions in mm (Inches)



14275-1



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