

VOLTAGE RANGE: 200 - 1000V

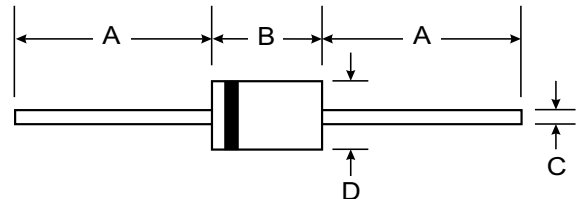
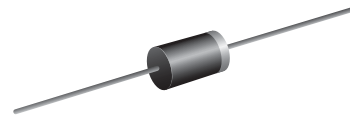
CURRENT: 3.0 A

Features

- Glass passivated junction
- Hermetically sealed package
- Controlled avalanche characteristics
- Low reverse current
- High surge current loading

Mechanical Data

- Case : DO-15 Molded plastic
- Epoxy : UL94V-O rate flame retardant
- Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- Polarity : Color band denotes cathode end
- Mounting position : Any
- Weight : 0.465 gram



DO-15		
Dim	Min	Max
A	25.40	—
B	5.50	7.62
C	0.686	0.889
D	2.60	3.60
All Dimensions in mm		

Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage =Repetitive peak reverse voltage		BYW82	$V_R = V_{RRM}$	200	V
		BYW83	$V_R = V_{RRM}$	400	V
		BYW84	$V_R = V_{RRM}$	600	V
		BYW85	$V_R = V_{RRM}$	800	V
		BYW86	$V_R = V_{RRM}$	1000	V
Peak forward surge current	$t_p = 10\text{ms}$, half sinewave		I_{FSM}	100	A
Repetitive peak forward current			I_{FRM}	18	A
Average forward current	$T_{amb} \leq 65^\circ\text{C}$		I_{FAV}	3	A
Pulse avalanche peak power	$t_p = 20\mu\text{s}$, half sinewave, $T_j = 175^\circ\text{C}$		P_R	1000	W
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R} = 1\text{A}$, $T_j = 175^\circ\text{C}$		E_R	20	mJ
i^2t -rating			i^2t	40	A^2s
Junction and storage temperature range			$T_j = T_{stg}$	$-65 \dots +175$	$^\circ\text{C}$

Maximum Thermal Resistance

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$l = 10\text{mm}$, $T_L = \text{constant}$	R_{thJA}	25	K/W
	on PC board with spacing 37.5mm	R_{thJA}	70	K/W



Electrical Characteristics

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=3\text{A}$		V_F			1.0	V
Reverse current	$V_R=V_{RRM}$		I_R		0.1	1	μA
	$V_R=V_{RRM}, T_j=100^\circ\text{C}$		I_R		5	10	μA
Breakdown voltage	$I_R=100\mu\text{A}, t_p/T=0.01, t_p=0.3\text{ms}$		$V_{(BR)}$			1600	V
Diode capacitance	$V_R=0, f=0.47\text{MHz}$		C_D		65	100	pF
Reverse recovery time	$I_F=0.5\text{A}, I_R=1\text{A}, i_R=0.25\text{A}$		t_{rr}		2	4	μs
	$I_F=1\text{A}, d_i/d_t=5\text{A}/\mu\text{s}, V_R=50\text{V}$		t_{rr}		3	6	μs
Reverse recovery charge	$I_F=1\text{A}, d_i/d_t=5\text{A}/\mu\text{s}$		Q_{rr}		6	10	μC

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

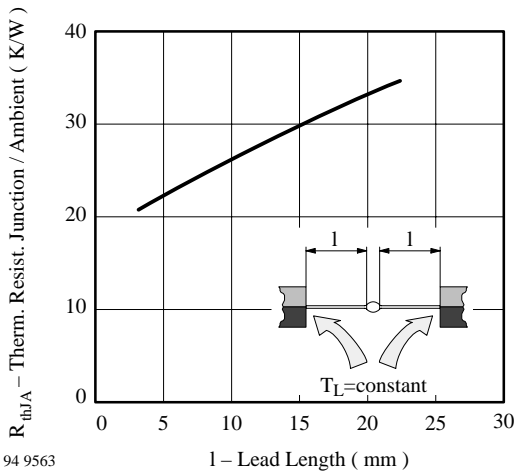


Figure 1. Max. Thermal Resistance vs. Lead Length

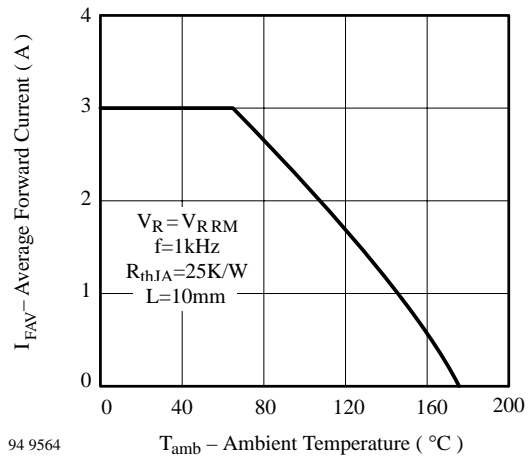


Figure 3. Max. Average Forward Current vs. Ambient Temperature

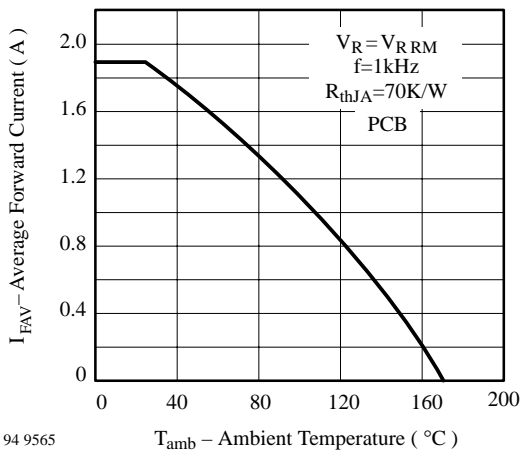


Figure 2. Max. Average Forward Current vs. Ambient Temperature

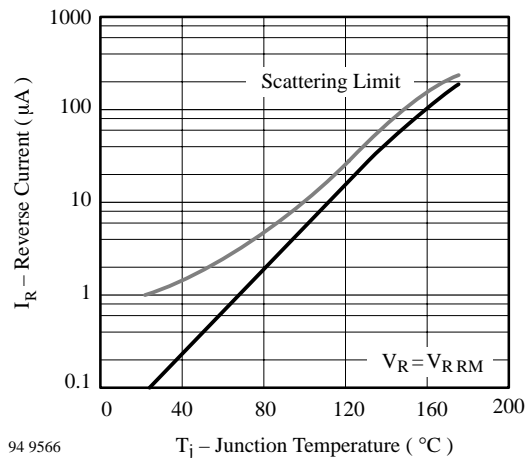
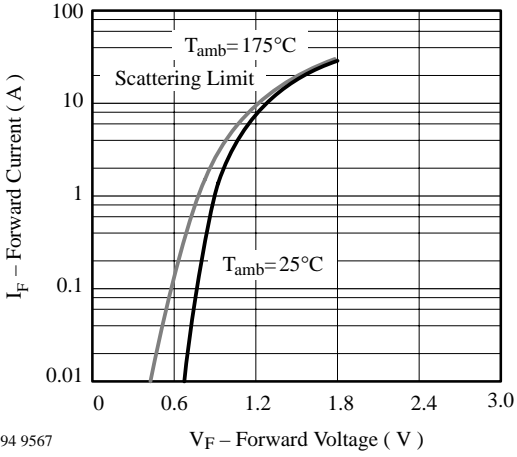
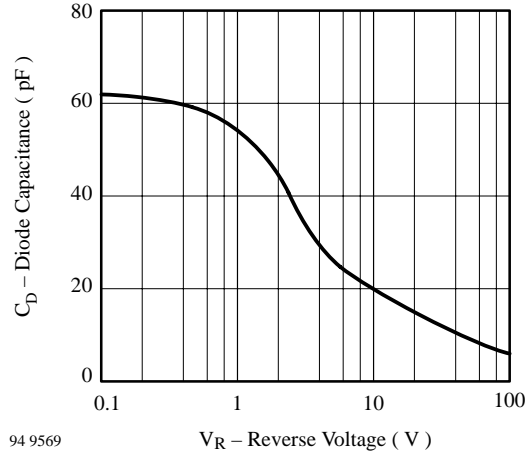


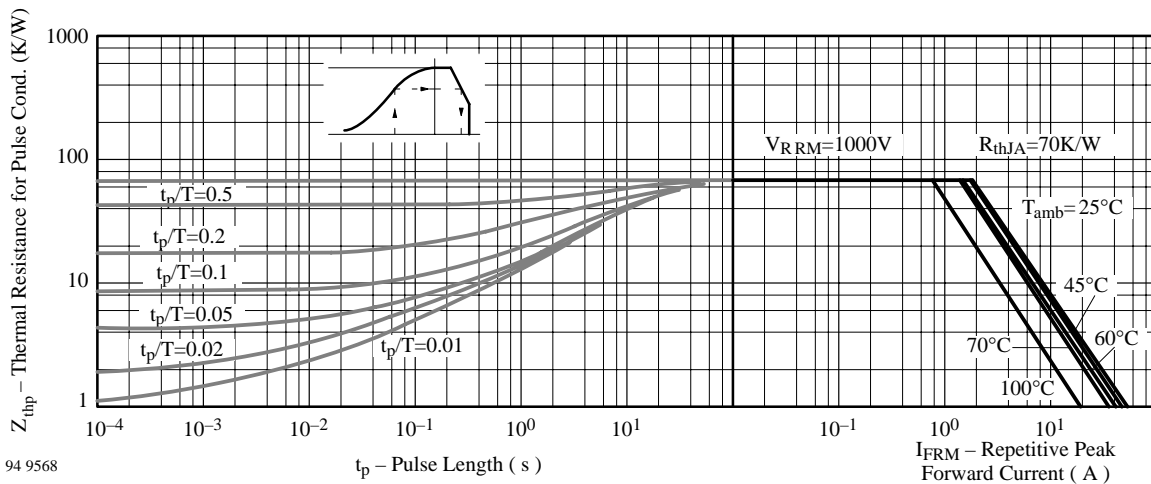
Figure 4. Reverse Current vs. Junction Temperature



94 9567 **Figure 5. Max. Forward Current vs. Forward Voltage**



94 9569 **Figure 6. Typ. Diode Capacitance vs. Reverse Voltage**



94 9568 **Figure 7. Thermal Response**