

# BA157 THRU BA159

## Fast Silicon Rectifiers

Reverse Voltage – 400 to 1000 V

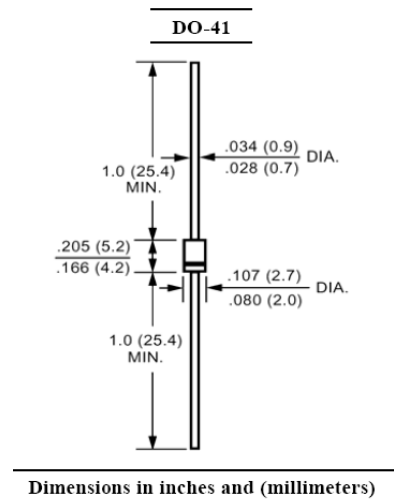
Forward Current – 1 A

### Features

- Low forward voltage
- High current capability
- Low leakage current
- High surge capability

### Mechanical Data

- Case: Molded plastic, DO-41
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position: Any



### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

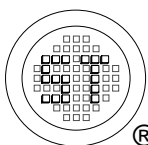
Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	BA157 BA158 BA159	400 600 1000	V
Average Rectified Current	$I_O$	1 <sup>1)</sup>	A
Surge Forward Current, Half Cycle 50 Hz, starting from $T_j = 25\text{ }^\circ\text{C}$	$I_{FSM}$	35	A
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Operating and Storage Temperature Range	$T_{stg}$	- 65 to + 125	$^\circ\text{C}$

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

### Characteristics at $T_j = 25\text{ }^\circ\text{C}$

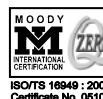
Parameter	Symbol	Typ.	Max.	Unit	
Forward Voltage at $I_F = 1\text{ A}$	$V_F$	-	1.3	V	
Reverse Current at $V_R = V_{RRM}$	$I_R$	-	5	$\mu\text{A}$	
Total Capacitance at $V_R = 4\text{ V}$ , $f = 1\text{ MHz}$	$C_{tot}$	15	-	pF	
Reverse Recovery Time at $I_F = 10\text{ mA}$ , $I_R = 10\text{ mA}$ , $I_{RR} = 1\text{ mA}$	$t_{rr}$	-	300	ns	
at $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $I_{RR} = 1\text{ mA}$ , $I_{RR} = 0.25\text{ A}$		BA157	-		300
		BA158	-		300
	BA159	-	500		
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	-	25 <sup>1)</sup>	K/W	

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



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FIG.1-FORWARD CURRENT DERATING CURVE

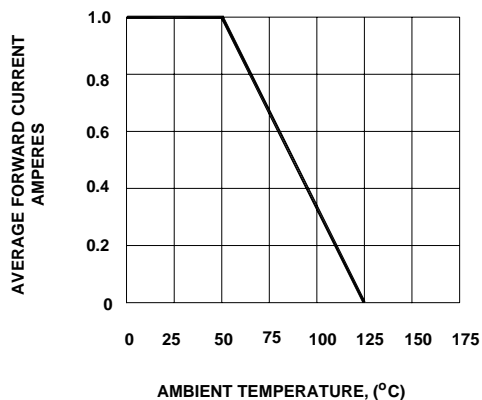


Fig.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

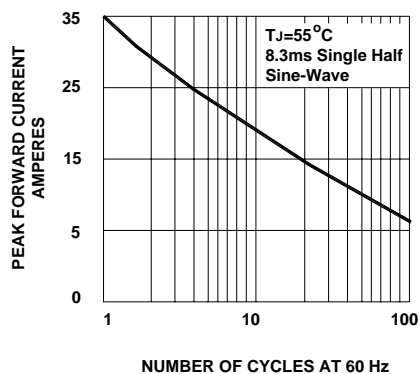


Fig.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

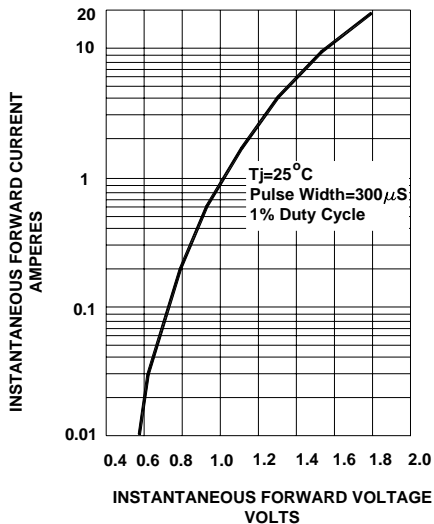


Fig.4- TYPICAL REVERSE CHARACTERISTICS

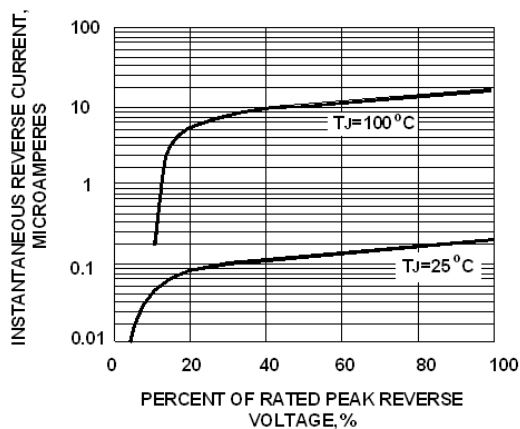


Fig.5- TYPICAL JUNCTION CAPACITANCE

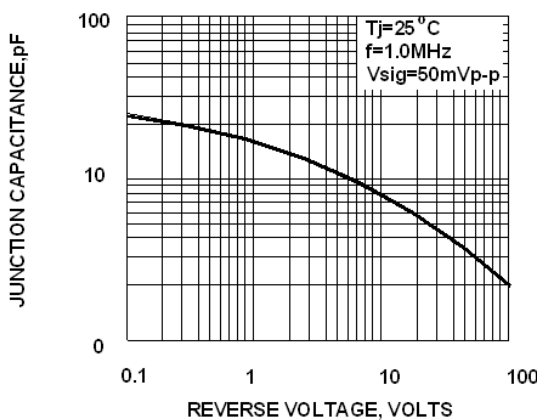
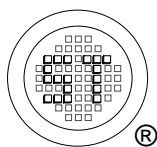
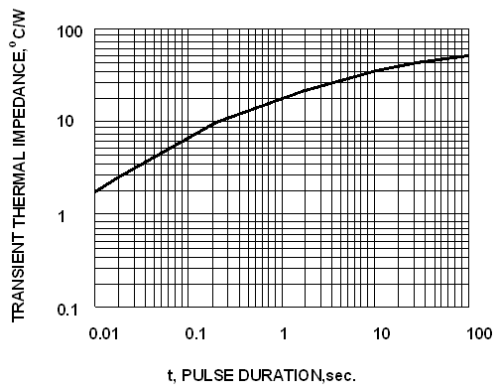


Fig.6- TYPICAL TRANSIENT THERMAL IMPEDANCE



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