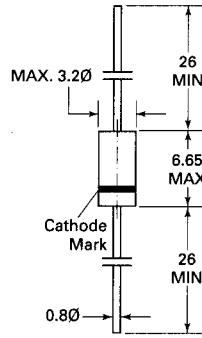


# BA157...BA159 FAST SILICON RECTIFIERS

## FEATURES

- \* Low forward voltage
- \* High current capability
- \* Low leakage current
- \* High surge capability
- \* Low cost



## VOLTAGE RANGE

400 to 1000 Volts

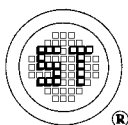
## CURRENT

1.0 Amperes

Dimensions in mm

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

	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	<b>BA157</b> $V_{RRM}$	400	V
	<b>BA158</b> $V_{RRM}$	600	V
	<b>BA159</b> $V_{RRM}$	1000	V
Average Rectified Current at $T_{amb} = 50\text{ }^\circ\text{C}$	$I_o$	1 <sup>1)</sup>	A
Surge Forward Current, Half Cycle 50Hz, starting from $T_j = 25\text{ }^\circ\text{C}$	$I_{FSM}$	35	A
Junction Temperature	$T_j$	125°	°C
Operating and Storage Temperature Range	$T_{amb}, T_s$	-65 to + 125°	°C
<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.			



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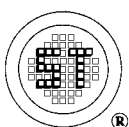
# BA157...BA159

## FAST SILICON RECTIFIERS

### Characteristics

	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage at $I_F = 1 \text{ A}$ , $T_j = 25 \text{ }^\circ\text{C}$	$V_F$	-	-	1.3	V
Leakage Current at $V_{RRM}$ , $T_{amb} = 25 \text{ }^\circ\text{C}$	$I_R$	-	-	5	$\mu\text{A}$
Capacitance at $f = 1 \text{ MHz}$ , $V_R = 4\text{V}$	$C_{tot}$	-	15	-	pF
$V_R = 4\text{V}$	$C_{tot}$	-	15	-	pF
$V_R = 4\text{V}$	$C_{tot}$	-	15	-	pF
Reverse Recovery Time $I_F = 10 \text{ mA}$ , $I_R = 10 \text{ mA}$	$t_{rr}$	-	-	300	ns
$I_{RR} = 1.0 \text{ mA}$	$t_{rr}$	-	-	300	ns
	$t_{rr}$	-	-	500	ns
$I_F = 0.5 \text{ A}$ , $I_R = 1\text{A}$	$t_{rr}$	-	-	150	ns
$I_{RR} = 0.25 \text{ A}$	$t_{rr}$	-	-	150	ns
	$t_{rr}$	-	-	250	ns
Thermal Resistance Junction to Ambient Air	$R_{thA}$	-	-	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

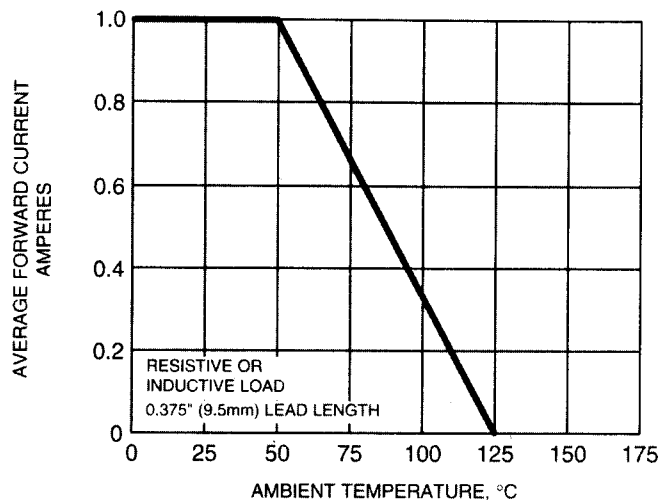


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

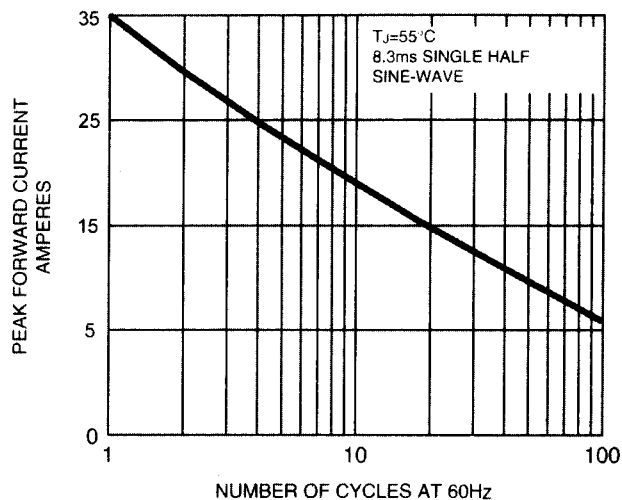
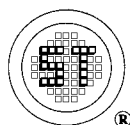
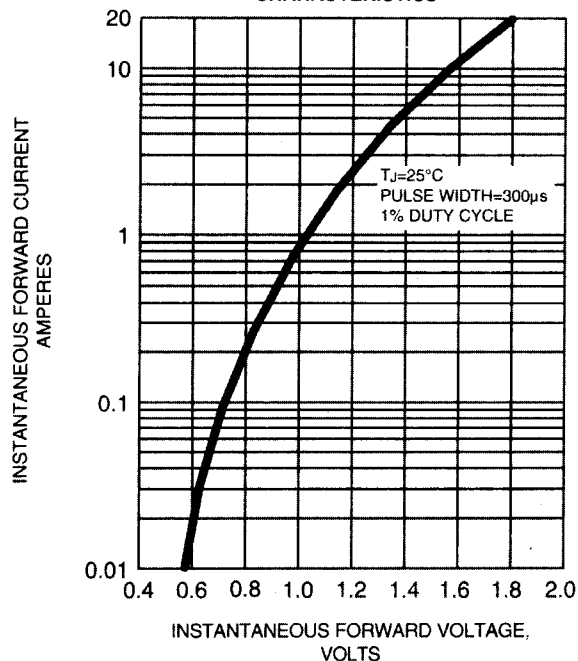


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



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FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

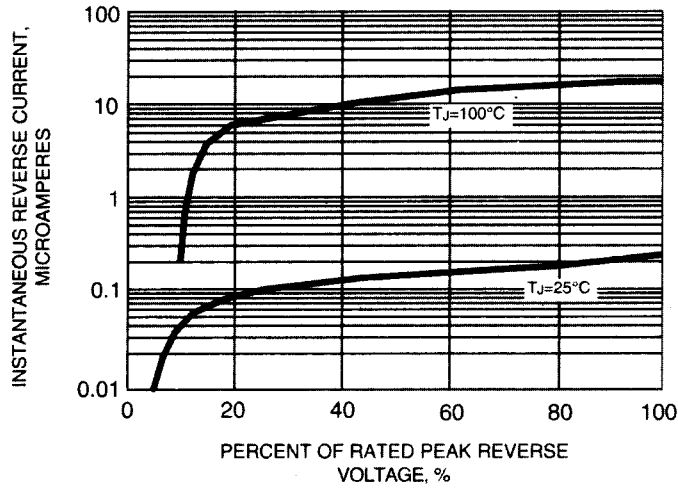


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

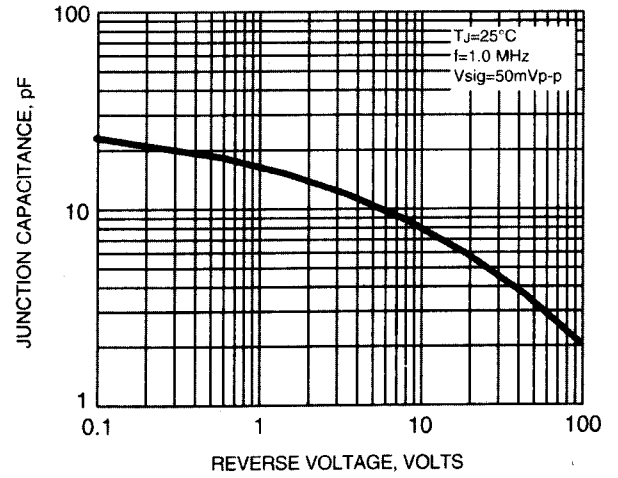
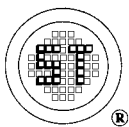
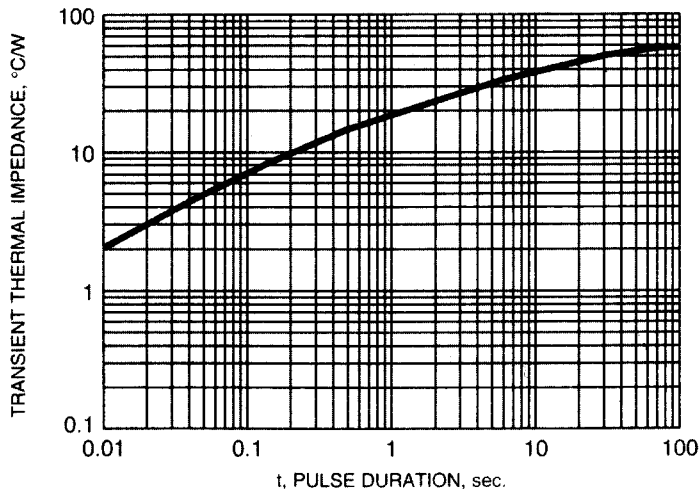


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE



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