

Pb Free Plating Product

## 63CTQ100G



60Ampere,100Volt Heat Sink Dual Common Cathode Schottky Barrier Rectifiers

<p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>Plastic package has Underwriters Laboratory Flammability Classification 94V-O. Flame Retardant Epoxy Molding Compound.</li> <li>Metal silicon junction, majority carrier conduction</li> <li>Low power loss, high efficiency.</li> <li>High current capability</li> <li>Guardring for overvoltage protection</li> <li>For use in low voltage,high frequency inverters free wheeling , and polarity protection applications.</li> <li>In compliance with EU RoHS 2002/95/EC directives</li> </ul>	<p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>Case: TO-220AB heatsink</li> <li>Terminals: solder plated, solderable per MIL-STD-750, Method 2026</li> <li>Polarity: As marked.</li> <li>Mounting Position: Any</li> <li>Weight:2.2 gram approximately.</li> </ul>	<p><b>TO-220AB/TO-220-3L</b> Unit : inch (mm)</p> <p>① → ② → ③ Case Positive Common Cathode Prefix "63CT"</p> <p>① → ② → ③ Case Negative Common Anode Prefix "63AT"</p> <p>① → ② → ③ Case Doubler Tandem Polarity Prefix "63DT"</p> <p>① → ② → ③ Case Series Tandem Polarity Prefix "63ST"</p>
--	--	--

**MAXIMUM RATINGS** (Per Diode Leg)

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	100	V
Average Rectified Forward Current ( $T_C = 155^\circ\text{C}$ ) Per Diode Per Device	$I_{F(AV)}$	30 60	A
Peak Repetitive Forward Current (Square Wave, 20 kHz, $T_C = 151^\circ\text{C}$ )	$I_{FRM}$	60	A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	350	A
Operating Junction Temperature (Note 1)	$T_J$	+175	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	- 65 to +175	$^\circ\text{C}$
Voltage Rate of Change (Rated $V_F$ )	$dv/dt$	10,000	$\text{V}/\mu\text{s}$
Controlled Avalanche Energy (see test conditions in Figures 9 and 10)	$W_{AVAL}$	400	mJ
ESD Ratings: Machine Model = C Human Body Model = 3B		> 400 > 8000	V

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. The heat generated must be less than the thermal conductivity from Junction-to-Ambient:  $dP_D/dT_J < 1/R_{\theta JA}$ .

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance – Junction-to-Case (Min. Pad) – Junction-to-Ambient (Min. Pad)	$R_{\theta JC}$ $R_{\theta JA}$	1.0 70	$^\circ\text{C}/\text{W}$

**ELECTRICAL CHARACTERISTICS** (Per Diode Leg)

Characteristic	Symbol	Min	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (Note 2) ( $I_F = 30\text{ A}, T_J = 25^\circ\text{C}$ ) ( $I_F = 30\text{ A}, T_J = 125^\circ\text{C}$ ) ( $I_F = 60\text{ A}, T_J = 25^\circ\text{C}$ ) ( $I_F = 60\text{ A}, T_J = 125^\circ\text{C}$ )	$V_F$	-	0.80 0.68 0.93 0.81	0.84 0.72 0.98 0.84	V
Maximum Instantaneous Reverse Current (Note 2) (Rated DC Voltage, $T_J = 125^\circ\text{C}$ ) (Rated DC Voltage, $T_J = 25^\circ\text{C}$ )	$i_R$	-	2.0 0.0013	10 0.01	mA

2. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

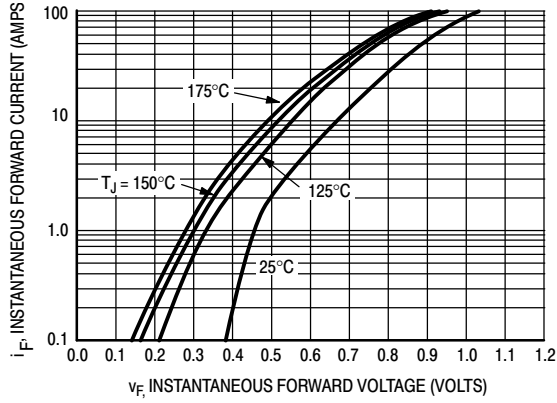


Figure 1. Typical Forward Voltage

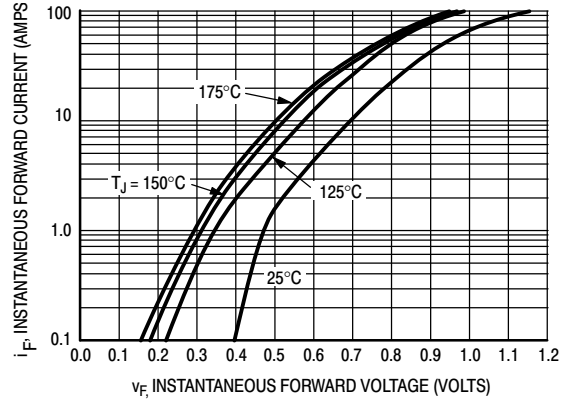


Figure 2. Maximum Forward Voltage

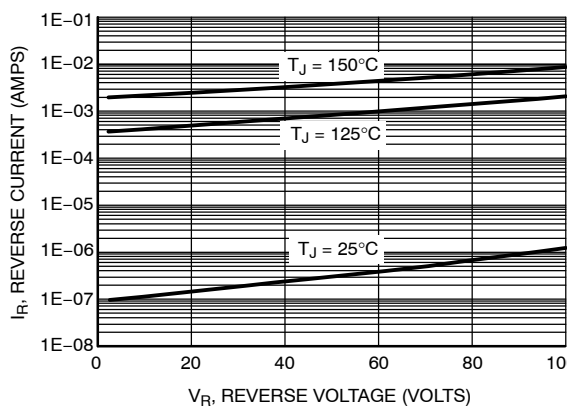


Figure 3. Typical Reverse Current

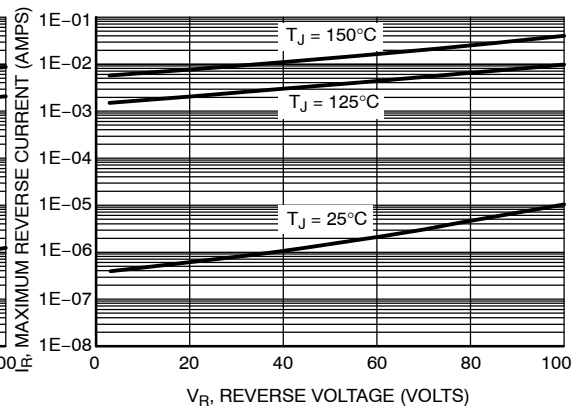


Figure 4. Maximum Reverse Current

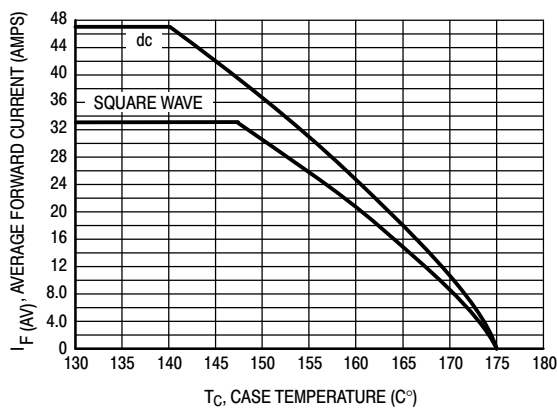


Figure 5. Current Derating, Case Per Leg

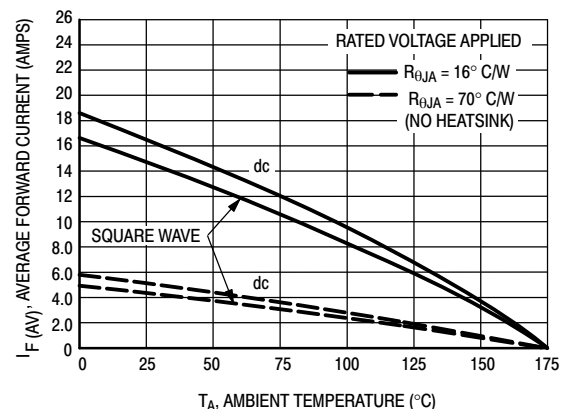


Figure 6. Current Derating, Ambient Per Leg

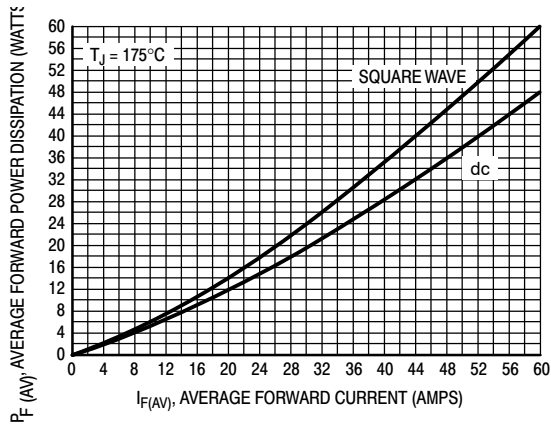


Figure 7. Forward Power Dissipation

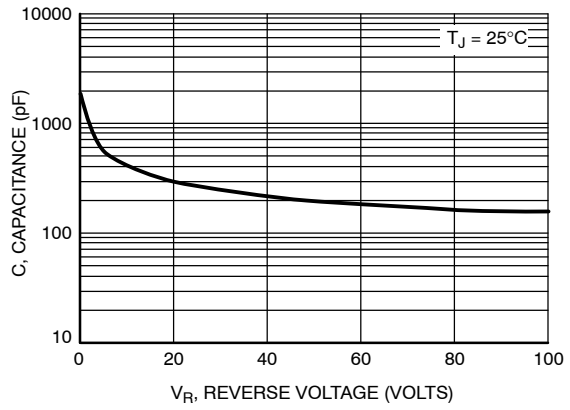


Figure 8. Capacitance

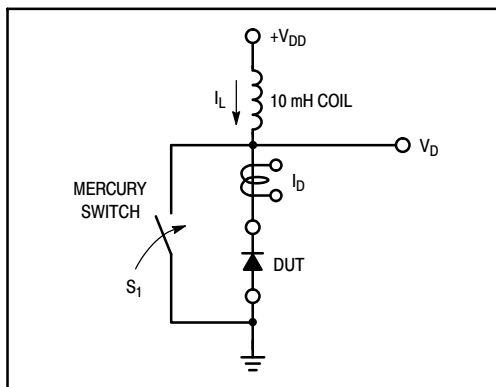


Figure 9. Test Circuit

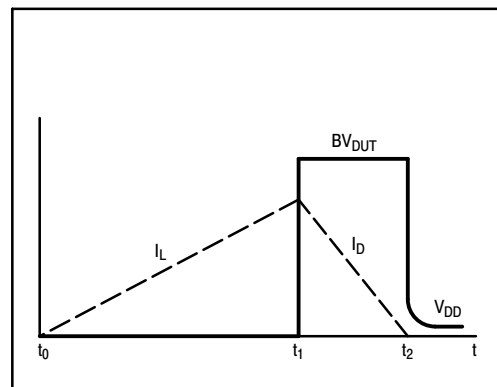


Figure 10. Current-Voltage Waveforms