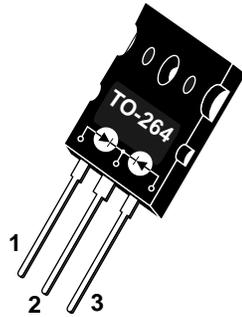


- 1 - Anode 1
- 2 - Common Cathode
Back of Case - Cathode
- 3 - Anode 2



**ADVANCED
POWER
TECHNOLOGY®**
APT60D30LCT 300V 60A

ULTRAFAST SOFT RECOVERY RECTIFIER DIODES

| PRODUCT APPLICATIONS | PRODUCT FEATURES | PRODUCT BENEFITS |
|---|--|---|
| <ul style="list-style-type: none"> • Parallel Diode <ul style="list-style-type: none"> -Switchmode Power Supply -Inverters • Free Wheeling Diode <ul style="list-style-type: none"> -Motor Controllers -Converters • Snubber Diode • Uninterruptible Power Supply (UPS) • 48 Volt Output Rectifiers • High Speed Rectifiers | <ul style="list-style-type: none"> • Ultrafast Recovery Times • Soft Recovery Characteristics • Popular TO-264 Package • Low Forward Voltage • High Blocking Voltage • Low Leakage Current | <ul style="list-style-type: none"> • Low Losses • Low Noise Switching • Cooler Operation • Higher Reliability Systems • Increased System Power Density |

MAXIMUM RATINGS

All Ratings Are Per Leg: $T_C = 25^\circ\text{C}$ unless otherwise specified.

| Symbol | Characteristic / Test Conditions | APT60D30LCT | UNIT |
|----------------|--|-------------|------------------|
| V_R | Maximum D.C. Reverse Voltage | 300 | Volts |
| V_{RRM} | Maximum Peak Repetitive Reverse Voltage | | |
| V_{RWM} | Maximum Working Peak Reverse Voltage | | |
| $I_F(AV)$ | Maximum Average Forward Current ($T_C = 90^\circ\text{C}$, Duty Cycle = 0.5) | 60 | Amps |
| $I_F(RMS)$ | RMS Forward Current | 60 | |
| I_{FSM} | Non-Repetitive Forward Surge Current ($T_J = 45^\circ\text{C}$, 8.3mS) | 600 | |
| T_J, T_{STG} | Operating and Storage Temperature Range | -55 to 150 | $^\circ\text{C}$ |
| T_L | Lead Temperature: 0.063" from Case for 10 Sec. | 300 | |

STATIC ELECTRICAL CHARACTERISTICS

| Symbol | Characteristic / Test Conditions | MIN | TYP | MAX | UNIT |
|----------|--|--|-----|-----|---------------|
| V_F | Maximum Forward Voltage | $I_F = 60\text{A}$ | | 1.4 | Volts |
| | | $I_F = 120\text{A}$ | | 1.4 | |
| | | $I_F = 60\text{A}, T_J = 150^\circ\text{C}$ | | 1.2 | |
| I_{RM} | Maximum Reverse Leakage Current | $V_R = V_R$ Rated | | 250 | μA |
| | | $V_R = V_R$ Rated, $T_J = 125^\circ\text{C}$ | | 500 | |
| C_T | Junction Capacitance, $V_R = 200\text{V}$ | | 140 | | pF |
| L_S | Series Inductance (Lead to Lead 5mm from Base) | | 10 | | nH |

APT Website - <http://www.advancedpower.com>

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DYNAMIC CHARACTERISTICS

APT60D30LCT

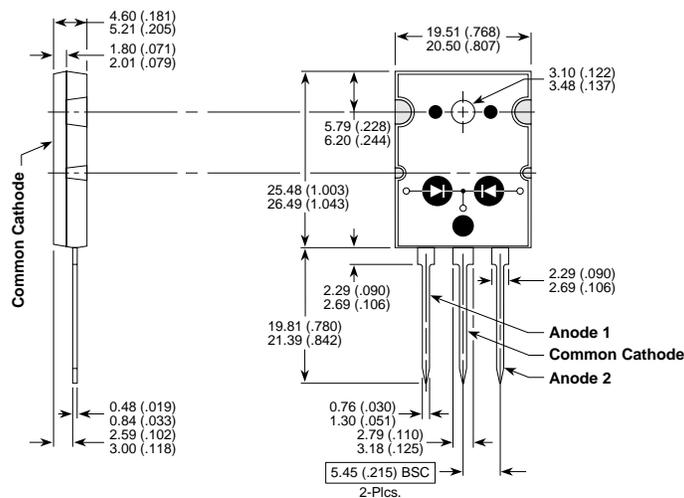
| Symbol | Characteristic | MIN | TYP | MAX | UNIT |
|------------|---|---------------------|-----|-----|------------|
| t_{rr1} | Reverse Recovery Time, $I_F = 1.0A$, $di_F/dt = -15A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$ | | 53 | TBD | ns |
| t_{rr2} | Reverse Recovery Time | $T_J = 25^\circ C$ | 45 | | |
| t_{rr3} | $I_F = 60A$, $di_F/dt = -480A/\mu s$, $V_R = 180V$ | $T_J = 100^\circ C$ | 70 | | |
| t_{fr1} | Forward Recovery Time | $T_J = 25^\circ C$ | 182 | | |
| t_{fr2} | $I_F = 60A$, $di_F/dt = 480A/\mu s$, $V_R = 180V$ | $T_J = 100^\circ C$ | 182 | | |
| I_{RRM1} | Reverse Recovery Current | $T_J = 25^\circ C$ | 12 | 17 | Amps |
| I_{RRM2} | $I_F = 60A$, $di_F/dt = -480A/\mu s$, $V_R = 180V$ | $T_J = 100^\circ C$ | 18 | 25 | |
| Q_{rr1} | Recovery Charge | $T_J = 25^\circ C$ | 315 | | nC |
| Q_{rr2} | $I_F = 60A$, $di_F/dt = -480A/\mu s$, $V_R = 180V$ | $T_J = 100^\circ C$ | 750 | | |
| V_{fr1} | Forward Recovery Voltage | $T_J = 25^\circ C$ | 7.5 | | Volts |
| V_{fr2} | $I_F = 60A$, $di_F/dt = 480A/\mu s$, $V_R = 180V$ | $T_J = 100^\circ C$ | 7.5 | | |
| diM/dt | Rate of Fall of Recovery Current | $T_J = 25^\circ C$ | 690 | | A/ μs |
| | $I_F = 60A$, $di_F/dt = -480A/\mu s$, $V_R = 180V$ | $T_J = 100^\circ C$ | 845 | | |

THERMAL AND MECHANICAL CHARACTERISTICS

| Symbol | Characteristic / Test Conditions | MIN | TYP | MAX | UNIT |
|-----------------|--|-----|------|------|--------------|
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance | | | 0.66 | $^\circ C/W$ |
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance | | | 40 | |
| W_T | Package Weight | | 0.35 | | oz |
| | | | 9.9 | | gm |
| Torque | Maximum Mounting Torque (Screw Type = 6-32 or 3mm Machine) | | | 10 | lb•in |
| | | | | 1.1 | N•m |

APT Reserves the right to change, without notice, the specifications and information contained herein.

TO-264 Package Outline



Dimensions in Millimeters and (Inches)

APT's devices are covered by one or more of the following U.S.patents: 4,895,810 5,045,903 5,089,434 5,182,234 5,019,522 5,262,336
5,256,583 4,748,103 5,283,202 5,231,474 5,434,095 5,528,058