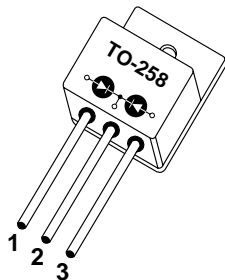


1 - Anode 1
 2 - Common Cathode
 3 - Anode 2
 Case Isolated



**ADVANCED
 POWER
 TECHNOLOGY®**
APT30D60HCT 600V 30A

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) • Induction Heating • High Speed Rectifiers | <ul style="list-style-type: none"> • Ultrafast Recovery Times • Soft Recovery Characteristics • Hermetic TO-258 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 (Single Diode) | APT30D60HCT | UNIT |
|----------------|--|-------------|------------------|
| V_R | Maximum D.C. Reverse Voltage | 600 | Volts |
| V_{RRM} | Maximum Peak Repetitive Reverse Voltage | | |
| V_{RWM} | Maximum Working Peak Reverse Voltage | | |
| $I_F(AV)$ | Maximum Average Forward Current ($T_C = 60^\circ\text{C}$, Duty Cycle = 0.5) | 30 | Amps |
| $I_F(RMS)$ | RMS Forward Current | 40 | |
| I_{FSM} | Non-Repetitive Forward Surge Current ($T_J = 45^\circ\text{C}$, 8.3ms) | 200 | |
| 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 (Single Diode) | MIN | TYP | MAX | UNIT |
|----------|---|-----|-----|---|---------------|
| V_F | Maximum Forward Voltage | | | 2.0 | Volts |
| | | | | $I_F = 30\text{A}$ | |
| | | | | $I_F = 60\text{A}$ | |
| I_{RM} | Maximum Reverse Leakage Current | | | 1.8 | μA |
| | | | | $I_F = 30\text{A}, T_J = 150^\circ\text{C}$ | |
| | | | | $V_R = V_R \text{ Rated}$ | |
| | | | | 500 | |
| C_T | Junction Capacitance, $V_R = 200\text{V}$ | | 40 | | pF |
| L_S | Series Inductance (Lead to Lead 5mm from Base) | | 10 | | nH |

USA 405 S.W. Columbia Street Bend, Oregon 97702-1035 Phone: (541) 382-8028 FAX: (541) 388-0364
 EUROPE Chemin de Magret F-33700 Merignac - France Phone: (33) 5 57 92 15 15 FAX: (33) 5 56 47 97 61

DYNAMIC CHARACTERISTICS

APT30D60HCT

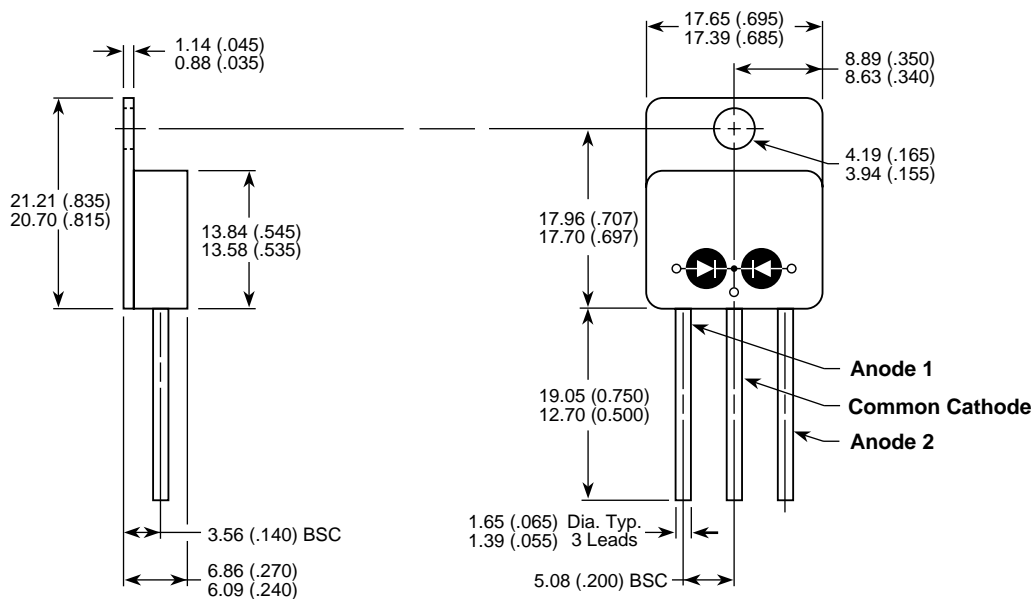
| Symbol | Characteristic | MIN | TYP | MAX | UNIT |
|------------|---|-----|-----|-----|------------|
| t_{rr1} | Reverse Recovery Time, $I_F = 1.0A$, $di_F/dt = -15A/\mu s$, $V_R = 30V$, $T_J = 25^\circ C$ | | 50 | 65 | ns |
| t_{rr2} | Reverse Recovery Time | | 50 | | |
| t_{rr3} | $I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 350V$ | | 80 | | |
| t_{fr1} | Forward Recovery Time | | 155 | | ns |
| t_{fr2} | $I_F = 30A$, $di_F/dt = 240A/\mu s$, $V_R = 350V$ | | 155 | | |
| I_{RRM1} | Reverse Recovery Current | | 4 | 10 | Amps |
| I_{RRM2} | $I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 350V$ | | 7.5 | 15 | |
| Q_{rr1} | Recovery Charge | | 100 | | nC |
| Q_{rr2} | $I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 350V$ | | 300 | | |
| V_{fr1} | Forward Recovery Voltage | | 5 | | Volts |
| V_{fr2} | $I_F = 30A$, $di_F/dt = 240A/\mu s$, $V_R = 350V$ | | 5 | | |
| diM/dt | Rate of Fall of Recovery Current | | 400 | | A/ μs |
| | $I_F = 30A$, $di_F/dt = -240A/\mu s$, $V_R = 350V$ | | 200 | | |

THERMAL AND MECHANICAL CHARACTERISTICS

| Symbol | Characteristic / Test Conditions | MIN | TYP | MAX | UNIT |
|-----------------|--|-----|------|-----|--------------|
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance | | | 1.5 | $^\circ C/W$ |
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance | | | 40 | |
| W_T | Package Weight | | 0.22 | | oz |
| | | | 6.1 | | gm |

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

TO-258 Package Outline



053-4020 Rev - 2-2001



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