



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



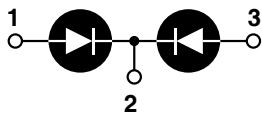
Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

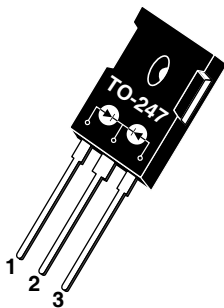
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China






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



APT30S20BCTG 200V 2x45A

 Fully compliant with RoHS 2002/95 Directive.

HIGH VOLTAGE SCHOTTKY DIODE

| 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-247 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 | APT30S20BCTG | UNIT |
|----------------|---|--------------|------------------|
| V_R | Maximum D.C. Reverse Voltage | 200 | Volts |
| V_{RRM} | Maximum Peak Repetitive Reverse Voltage | | |
| V_{RWM} | Maximum Working Peak Reverse Voltage | | |
| $I_F(AV)$ | Maximum Average Forward Current ($T_C = 125^\circ\text{C}$, Duty Cycle = 0.5) | 45 | Amps |
| $I_F(RMS)$ | RMS Forward Current (Square wave, 50% duty) | 121 | |
| I_{FSM} | Non-Repetitive Forward Surge Current ($T_J = 45^\circ\text{C}$, 8.3ms) | 320 | |
| T_J, T_{STG} | Operating and Storage Temperature Range | -55 to 150 | $^\circ\text{C}$ |
| T_L | Lead Temperature Case for 10 Sec. | 300 | |
| E_{VAL} | Avalanche Energy (2A, 15mH) | 30 | mJ |

STATIC ELECTRICAL CHARACTERISTICS

| Symbol | | MIN | TYP | MAX | UNIT |
|----------|---|--|-----|-----|-------|
| V_F | Forward Voltage | $I_F = 30\text{A}$ | .80 | .85 | Volts |
| | | $I_F = 60\text{A}$ | | .91 | |
| | | $I_F = 30\text{A}, T_J = 125^\circ\text{C}$ | | .67 | |
| I_{RM} | Maximum Reverse Leakage Current | $V_R = V_R$ Rated | | 0.5 | mA |
| | | $V_R = V_R$ Rated, $T_J = 125^\circ\text{C}$ | | 15 | |
| C_T | Junction Capacitance, $V_R = 200\text{V}$ | | 150 | | pF |

 Fully compliant with RoHS 2002/95 Directive.

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

| Symbol | Characteristic | Test Conditions | MIN | TYP | MAX | UNIT |
|-----------|----------------------------------|---|-----|-----|-----|------|
| t_{rr} | Reverse Recovery Time | $I_F = 30A, di_F/dt = -200A/\mu s$ $V_R = 133V, T_C = 25^\circ C$ | - | 55 | | ns |
| Q_{rr} | Reverse Recovery Charge | | - | 190 | | nC |
| I_{RRM} | Maximum Reverse Recovery Current | | - | 6 | - | Amps |
| t_{rr} | Reverse Recovery Time | $I_F = 30A, di_F/dt = -200A/\mu s$ $V_R = 133V, T_C = 125^\circ C$ | - | 100 | | ns |
| Q_{rr} | Reverse Recovery Charge | | - | 450 | | nC |
| I_{RRM} | Maximum Reverse Recovery Current | | - | 9 | - | Amps |
| t_{rr} | Reverse Recovery Time | $I_F = 30A, di_F/dt = -700A/\mu s$ $V_R = 133V, T_C = 125^\circ C$ | - | 70 | | ns |
| Q_{rr} | Reverse Recovery Charge | | - | 960 | | nC |
| I_{RRM} | Maximum Reverse Recovery Current | | - | 24 | | Amps |

THERMAL AND MECHANICAL CHARACTERISTICS

| Symbol | Characteristic / Test Conditions | MIN | TYP | MAX | UNIT |
|-----------------|--|-----|------|-----|--------------|
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance | | | .58 | $^\circ C/W$ |
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance | | | 40 | |
| W_T | Package Weight | | 0.22 | | oz |
| | | | 5.9 | | g |
| Torque | Maximum Mounting Torque | | | 10 | lb•in |
| | | | | 1.1 | N•m |

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

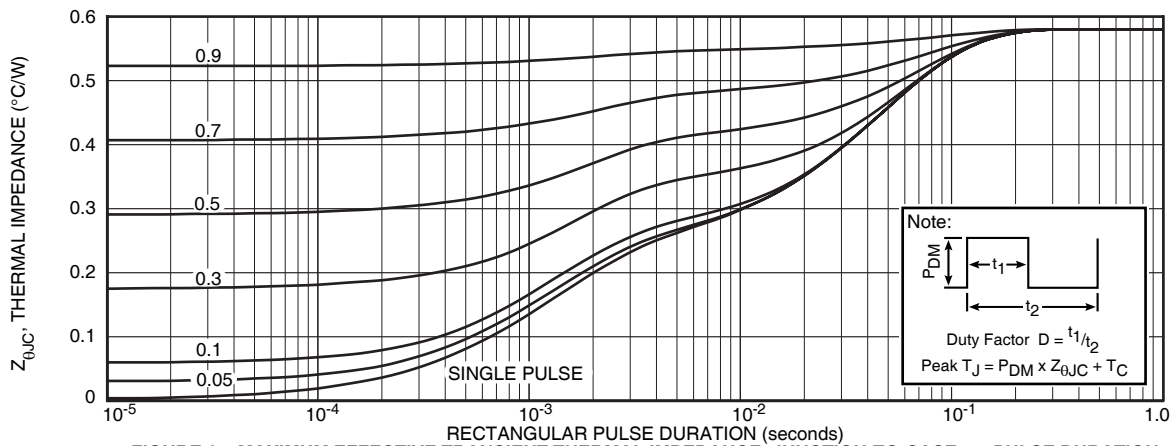


FIGURE 1a. MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs. PULSE DURATION

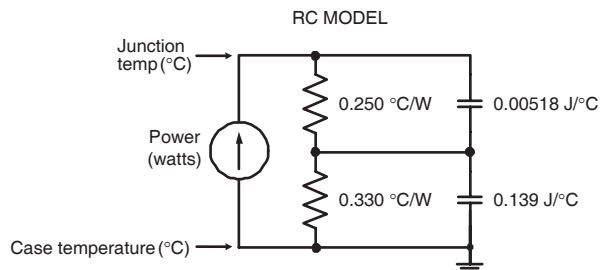


FIGURE 1b. TRANSIENT THERMAL IMPEDANCE MODEL

TYPICAL PERFORMANCE CURVES

APT30S20BCTG

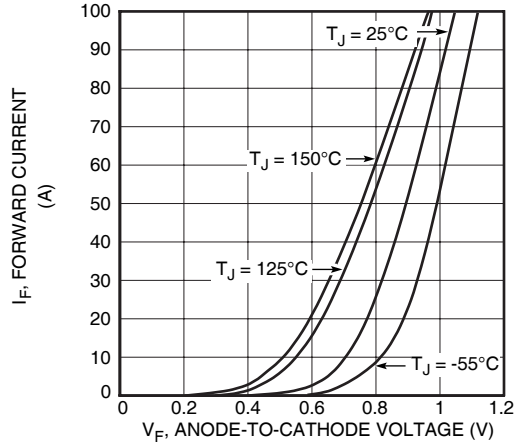


Figure 2. Forward Current vs. Forward Voltage

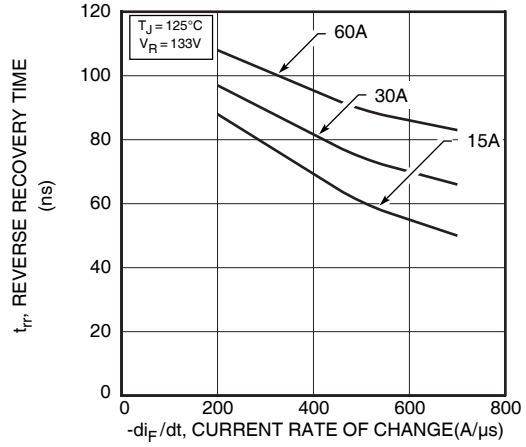


Figure 3. Reverse Recovery Time vs. Current Rate of Change

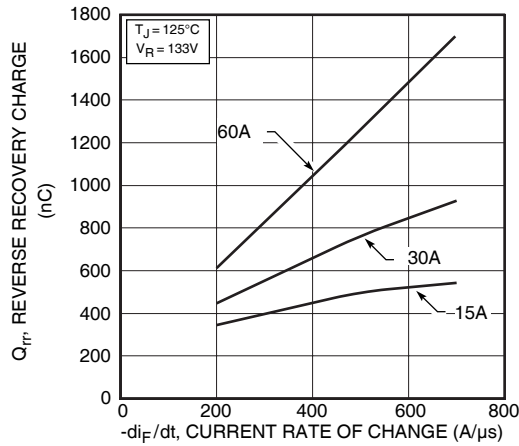


Figure 4. Reverse Recovery Charge vs. Current Rate of Change

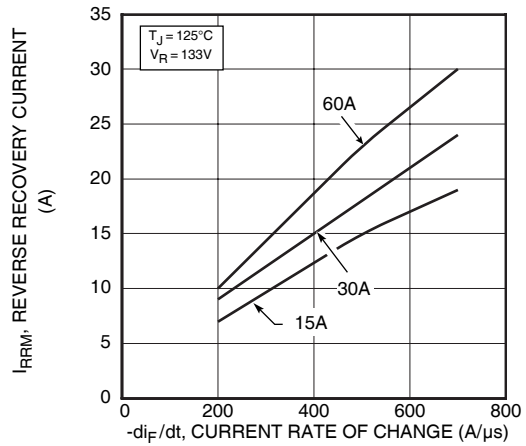


Figure 5. Reverse Recovery Current vs. Current Rate of Change

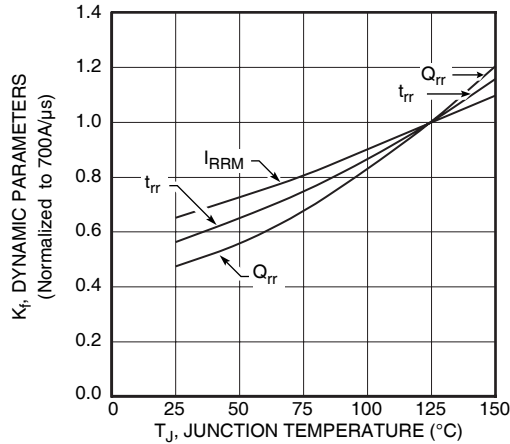


Figure 6. Dynamic Parameters vs. Junction Temperature

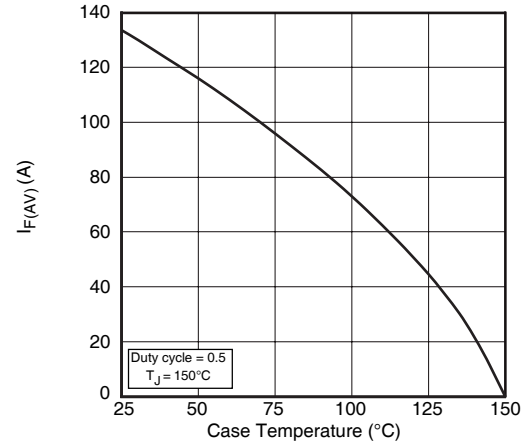


Figure 7. Maximum Average Forward Current vs. Case Temperature

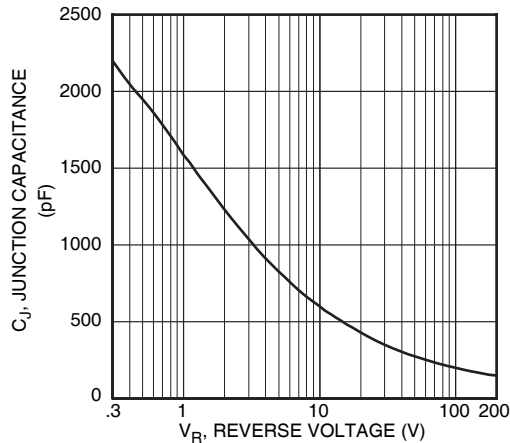


Figure 8. Junction Capacitance vs. Reverse Voltage

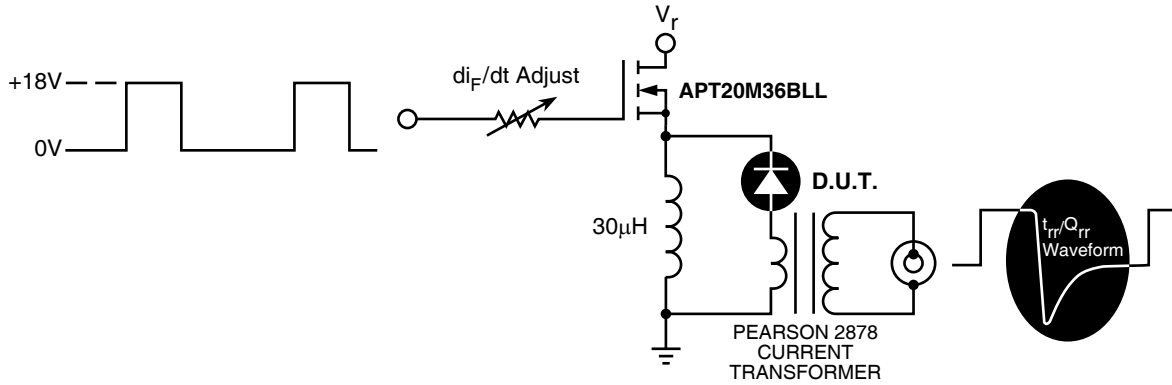


Figure 9. Diode Test Circuit

- 1 I_F - Forward Conduction Current
- 2 di_F/dt - Rate of Diode Current Change Through Zero Crossing.
- 3 I_{RRM} - Maximum Reverse Recovery Current.
- 4 t_{rr} - Reverse Recovery Time, measured from zero crossing where diode current goes from positive to negative, to the point at which the straight line through I_{RRM} and $0.25 \cdot I_{RRM}$ passes through zero.
- 5 Q_{rr} - Area Under the Curve Defined by I_{RRM} and t_{rr} .

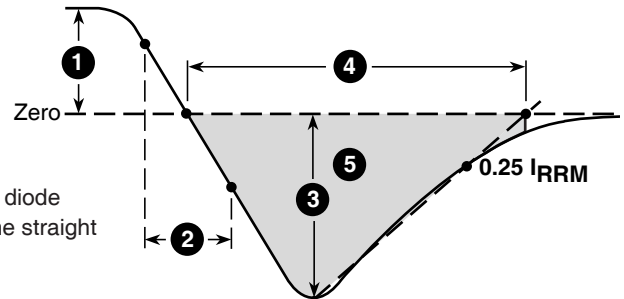
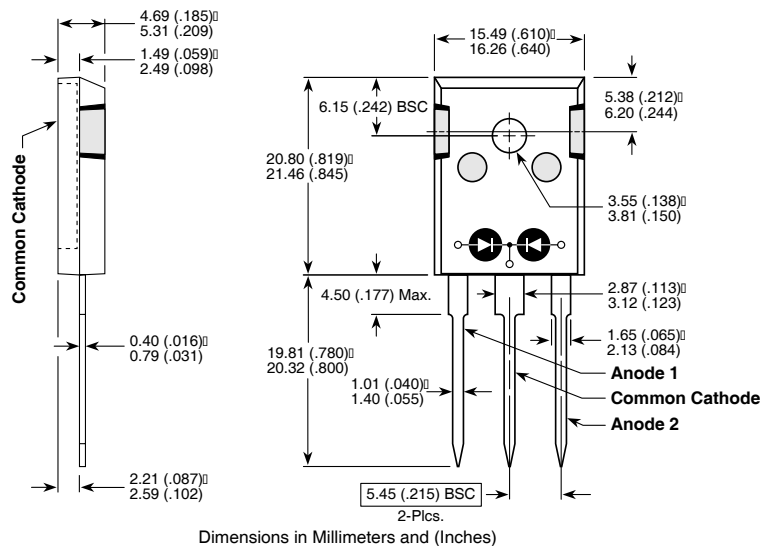


Figure 10, Diode Reverse Recovery Waveform and Definitions

TO-247 Package Outline



Dimensions in Millimeters and (Inches)