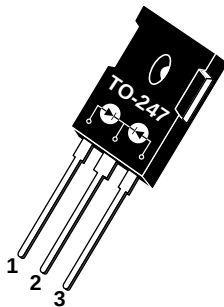


- 1 - Anode 1  
2 - Common Cathode  
Back of Case - Cathode  
3 - Anode 2



**APT15S20BCT 200V 2X15A**

## HIGH VOLTAGE SCHOTTKY DIODE

### PRODUCT APPLICATIONS

- Parallel Diode
  - Switchmode Power Supply
  - Inverters
- Free Wheeling Diode
  - Motor Controllers
  - Converters
- Snubber Diode
- Uninterruptible Power Supply (UPS)
- 48 Volt Output Rectifiers
- High Speed Rectifiers

### PRODUCT FEATURES

- Ultrafast Recovery Times
- Soft Recovery Characteristics
- Popular TO-247 Package
- Low Forward Voltage
- High Blocking Voltage
- Low Leakage Current

### PRODUCT BENEFITS

- Low Losses
- Low Noise Switching
- Cooler Operation
- Higher Reliability Systems
- Increased System Power Density

### MAXIMUM RATINGS

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

| Symbol            | Characteristic / Test Conditions                                                | APT15S20BCT | UNIT             |
|-------------------|---------------------------------------------------------------------------------|-------------|------------------|
| $V_R$             | Maximum D.C. Reverse Voltage                                                    | 200         | Volts            |
| $V_{RRM}$         | Maximum Peak Repetitive Reverse Voltage                                         |             |                  |
| $V_{RWM}$         | Maximum Working Peak Reverse Voltage                                            |             |                  |
| $I_F(\text{AV})$  | Maximum Average Forward Current ( $T_C = 130^\circ\text{C}$ , Duty Cycle = 0.5) | 15          | Amps             |
| $I_F(\text{RMS})$ | RMS Forward Current                                                             | 90          |                  |
| $I_{FSM}$         | Non-Repetitive Forward Surge Current ( $T_J = 45^\circ\text{C}$ , 8.3ms)        | TBD         |                  |
| $T_J, T_{STG}$    | Operating and Storage Temperature Range                                         | -55 to 150  | $^\circ\text{C}$ |
| $T_L$             | Lead Temperature: 0.063" from Case for 10 Sec.                                  | 300         |                  |
| $E_{AVL}$         | Avalanche Energy (2A, 8mH)                                                      | 15          | mJ               |

### STATIC ELECTRICAL CHARACTERISTICS

| Symbol   | Characteristic / Test Conditions               | MIN                                                | TYP  | MAX  | UNIT  |
|----------|------------------------------------------------|----------------------------------------------------|------|------|-------|
| $V_F$    | Maximum Forward Voltage                        | $I_F = 15\text{A}$                                 | 0.80 | 0.83 | Volts |
|          |                                                | $I_F = 30\text{A}$                                 | 0.93 |      |       |
|          |                                                | $I_F = 15\text{A}, T_J = 150^\circ\text{C}$        |      | 0.80 |       |
| $I_{RM}$ | Maximum Reverse Leakage Current                | $V_R = V_R \text{ Rated}$                          |      | .250 | mA    |
|          |                                                | $V_R = V_R \text{ Rated}, T_J = 125^\circ\text{C}$ |      | 5    |       |
| $C_T$    | Junction Capacitance, $V_R = 100\text{V}$      |                                                    | 73   |      | pF    |
| $L_S$    | Series Inductance (Lead to Lead 5mm from Base) |                                                    | 10   |      | nH    |

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# DYNAMIC CHARACTERISTICS

APT15S20BCT

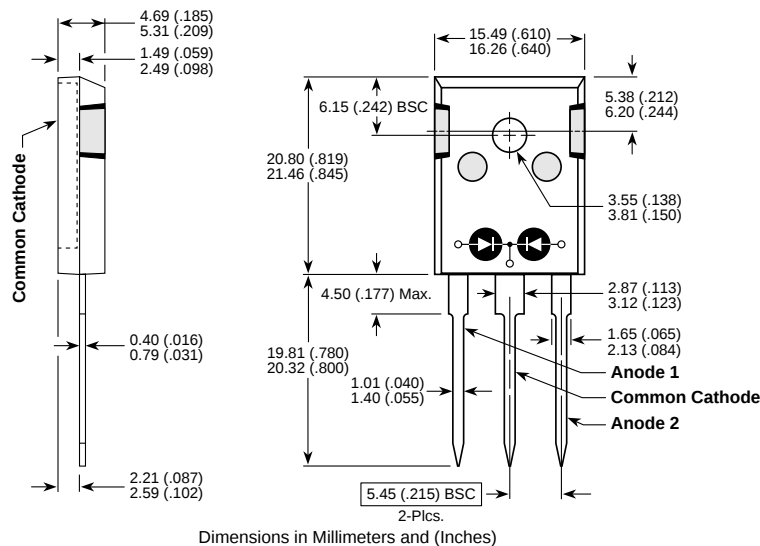
| Symbol     | Characteristic                                                                                  | MIN | TYP | MAX | UNIT       |
|------------|-------------------------------------------------------------------------------------------------|-----|-----|-----|------------|
| $t_{rr1}$  | Reverse Recovery Time, $I_F = 1.0A$ , $di_F/dt = -15A/\mu s$ , $V_R = 30V$ , $T_J = 25^\circ C$ |     | TBD | TBD | ns         |
| $t_{rr2}$  | Reverse Recovery Time                                                                           |     | 60  |     |            |
| $t_{rr3}$  | $I_F = 15A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$                                            |     | 85  |     |            |
| $t_{fr1}$  | Forward Recovery Time                                                                           |     | TBD |     |            |
| $t_{fr2}$  | $I_F = 15A$ , $di_F/dt = 100A/\mu s$ , $V_R = 100V$                                             |     | TBD |     |            |
| $I_{RRM1}$ | Reverse Recovery Current                                                                        |     | 3.0 |     | Amps       |
| $I_{RRM2}$ | $I_F = 15A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$                                            |     | 5.0 |     |            |
| $Q_{rr1}$  | Recovery Charge                                                                                 |     | 117 |     | nC         |
| $Q_{rr2}$  | $I_F = 15A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$                                            |     | 237 |     |            |
| $V_{fr1}$  | Forward Recovery Voltage                                                                        |     | TBD |     | Volts      |
| $V_{fr2}$  | $I_F = 15A$ , $di_F/dt = 100A/\mu s$ , $V_R = 100V$                                             |     | TBD |     |            |
| $diM/dt$   | Rate of Fall of Recovery Current                                                                |     | TBD |     | A/ $\mu s$ |
|            | $I_F = 15A$ , $di_F/dt = -100A/\mu s$ , $V_R = 100V$                                            |     | TBD |     |            |

# THERMAL AND MECHANICAL CHARACTERISTICS

| Symbol          | Characteristic / Test Conditions                             | MIN | TYP  | MAX | UNIT         |
|-----------------|--------------------------------------------------------------|-----|------|-----|--------------|
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance                          |     |      | 1.4 | $^\circ C/W$ |
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance                       |     |      | 40  |              |
| $W_T$           | Package Weight                                               |     | 0.22 |     | oz           |
|                 |                                                              |     | 6.1  |     | gm           |
| Torque          | Maximum Mounting Torque (Screw Type = 6-32 or 3.5mm Machine) |     |      | 10  | lb•in        |
|                 |                                                              |     |      | 1.1 | N•m          |

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

## TO-247 Package Outline



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