

# BYD17D - BYD17M

## GENERAL PURPOSE CONTROLLED AVALANCHE RECTIFIERS

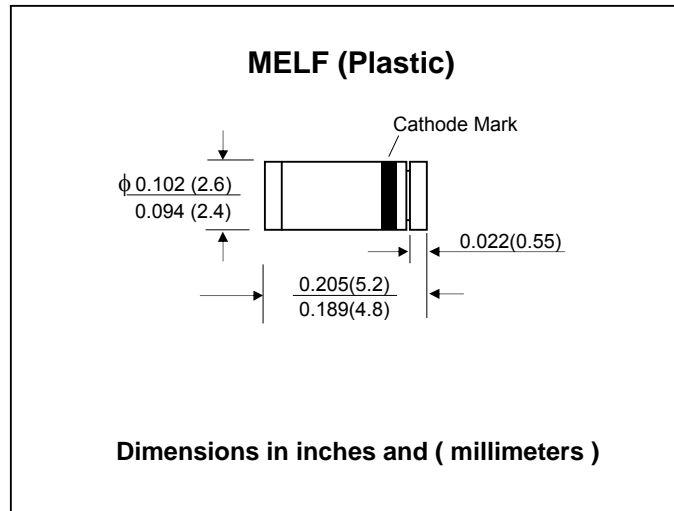
**PRV : 200 - 1000 Volts**  
**Io : 1.5 Amperes**

### FEATURES :

- \* Glass passivated
- \* High maximum operating temperature
- \* Low leakage current
- \* Excellent stability
- \* Guaranteed avalanche energy absorption capability
- \* Smallest surface mount rectifier outline
- \* **Pb / RoHS Free**

### MECHANICAL DATA :

- \* Case : Molded plastic
- \* Terminals : Plated Terminals, solderable per MIL-STD-750 Method 2026
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 0.116 gram



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (Tj = 25 °C unless otherwise specified.)

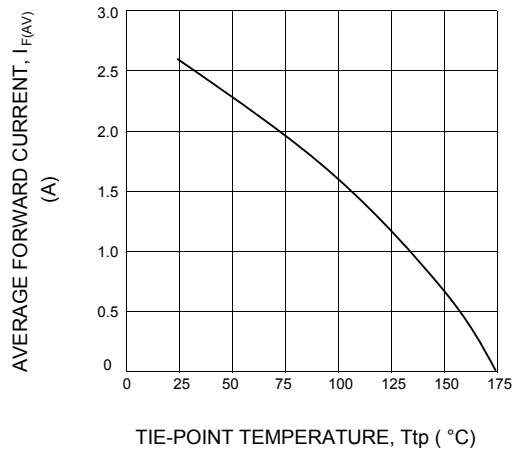
| RATING  | SYMBOL          | BYD 17D                                | BYD 17G | BYD 17J | BYD 17K | BYD 17M | UNIT    |
|---|-----------------|--|---------|---------|---------|---------|---------|
| Maximum Repetitive Peak Reverse Voltage   | $V_{RRM}$       | 200                                    | 400     | 600     | 800     | 1000    | V       |
| Maximum Crest Working Reverse Voltage   | $V_{RWM}$       | 200                                    | 400     | 600     | 800     | 1000    | V       |
| Maximum Continuous Reverse Voltage  | $V_R$           | 200                                    | 400     | 600     | 800     | 1000    | V       |
| Min. Reverse Avalanche Breakdown Voltage at $I_R = 0.1$ mA                                | $V_{(BR)R-min}$ | 225                                    | 450     | 650     | 900     | 1100    | V       |
| Maximum Average Forward Current $T_{tp} = 105$ °C<br>(Note 1) $T_a = 65$ °C; PCB mounting | $I_{F(AV)}$     | 1.5                                    |         |         |         |         | A       |
|   |                 | 0.6                                    |         |         |         |         |         |
| Maximum Non-Repetitive Peak Forward Surge Current (Note 2)                                | $I_{FSM}$       | 20                                     |         |         |         |         | A       |
| Maximum Forward Voltage   | $V_F$           | at $I_F = 1$ A , $T_j = 25$ °C         |         | 1.05    |         | V       |         |
|   |                 | at $I_F = 1$ A , $T_j = T_{jmax}$      |         | 0.93    |         |         |         |
| Maximum Reverse Current   | $I_R$           | at $V_R = V_{RRMmax}$ , $T_j = 25$ °C  |         | 1.0     |         | $\mu$ A |         |
|   |                 | at $V_R = V_{RRMmax}$ , $T_j = 165$ °C |         | 100     |         |         |         |
| Typical Reverse Recovery Time (Note 3)  | $T_{rr}$        | 3                                      |         |         |         |         | $\mu$ s |
| Thermal Resistance from Junction to Tie-Point   | $R_{th j-tp}$   | 30                                     |         |         |         |         | K / W   |
| Thermal Resistance from Junction to Ambient (Note 4)                                      | $R_{th j-a}$    | 150                                    |         |         |         |         | K / W   |
| Operating Junction Temperature Range  | $T_J$           | - 65 to + 175                          |         |         |         |         | °C      |
| Storage Temperature Range   | $T_{STG}$       | - 65 to + 175                          |         |         |         |         | °C      |

#### Notes :

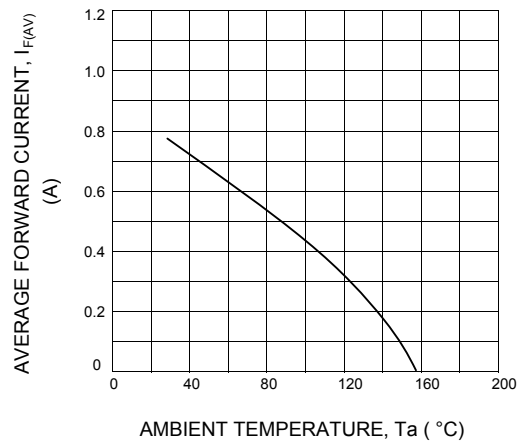
- (1) Averaged over any 20 ms period.
- (2)  $t = 10$ ms half sine wave;  $T_j = T_{jmax}$  prior to surge;  $V_R = V_{RRMmax}$
- (3) Reverse Recovery Test Conditions :  $I_F = 0.5$  A,  $I_R = 1.0$  A,  $I_{rr} = 0.25$  A.
- (4) Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper  $\geq 40$   $\mu$ m

**RATING AND CHARACTERISTIC CURVES ( BYD17D - BYD17M )**

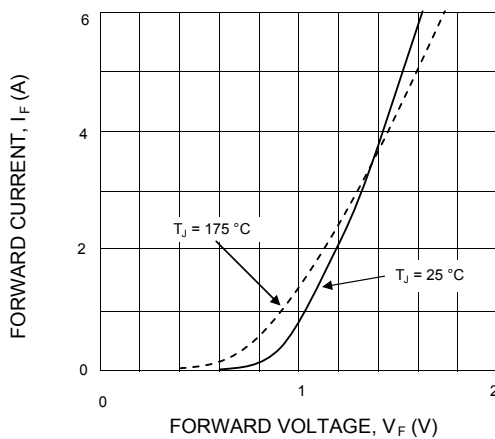
**FIG.1 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF TIE-POINT TEMPERATURE**



**FIG.2 - MAXIMUM PERMISSIBLE AVERAGE FORWARD CURRENT AS A FUNCTION OF AMBIENT TEMPERATURE**



**FIG.3 - FORWARD CURRENT AS FUNCTION OF FORWARD VOLTAGE; MAXIMUM VALUES**



**FIG.4 - REVERSE CURRENT AS FUNCTION OF JUNCTION TEMPERATURE; MAXIMUM VALUES**

