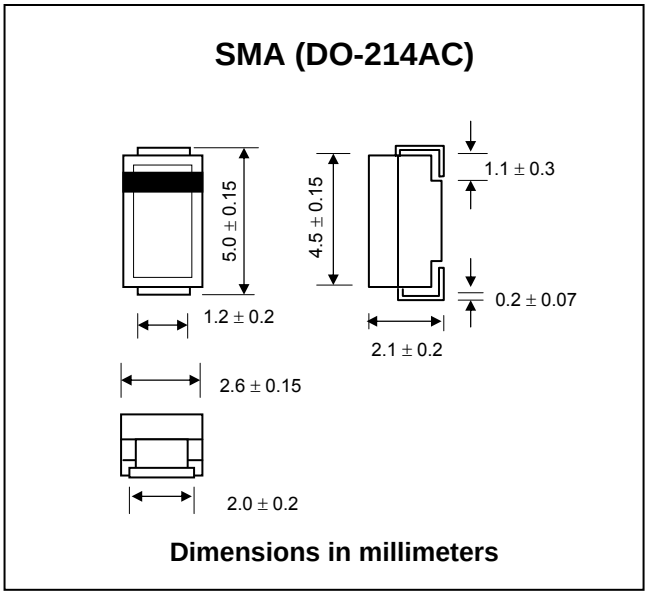
# BYD37DA - BYD37MA

# AVALANCHE FAST SOFT-RECOVERY RECTIFIER DIODES

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




### FEATURES :

* Glass passivated junction chip.
* High maximum operating temperature
* Low leakage current
* Excellent stability
* Smallest surface mount rectifier outline
* Pb / RoHS Free

### MECHANICAL DATA :

* Case : SMA Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Lead Formed for Surface Mount
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.067 gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| RATING | SYMBOL | BYD 37DA | BYD 37GA | BYD 37JA | BYD 37KA | BYD 37MA | UNIT |
|---|---|---|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Continuous Reverse Voltage | $V_R$ | 200 | 400 | 600 | 800 | 1000 | V |
| Min. Reverse Avalanche Breakdown Voltage @ $I_R$ = 0.1 mA | $V_{(BR)R-min}$ | 300 | 500 | 700 | 900 | 1100 | V |
| Maximum Average Forward Current Ttp = 105 °C (Note 1) | $I_{F(AV)}$ | 1.5 | | | | | A |
| Maximum Non-Repetitive Peak Forward Surge Current (Note 2) | $I_{FSM}$ | 20 | | | | | A |
| Maximum Repetitive Peak Forward Current | $I_{FRM}$ | 12 | | | | | A |
| Maximum Forward Voltage at 1.0 A | $V_F$ | 1.3 | | | | | V |
| Maximum Reverse Current at $V_R = V_{RRMmax}$ $T_J$ = 20 °C | $I_R$ | 1.0 | | | | | µA |
| $T_J$ = 165 °C | $I_{R(H)}$ | 100 | | | | | µA |
| Maximum Reverse Recovery Time (Note 3) | Trr | 250 | | | 300 | | ns |
| Thermal Resistance from Junction to Tie-Point | $R_{th\ j-tp}$ | 30 | | | | | K / W |
| Thermal Resistance from Junction to Ambient (Note 4) | $R_{th\ j-a}$ | 120 | | | | | K / W |
| 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=10ms half sine wave; Tj = Tjmax prior to surge; $V_R = V_{RRMmax}$

(3) Reverse Recovery Test Conditions : $I_F$ = 0.5 A, $I_R$ = 1.0 A, Irr = 0.25 A.

(4) Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of Cu-layer ≥ 40 µm.

## RATING AND CHARACTERISTIC CURVES ( BYD37DA - BYD37MA )

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

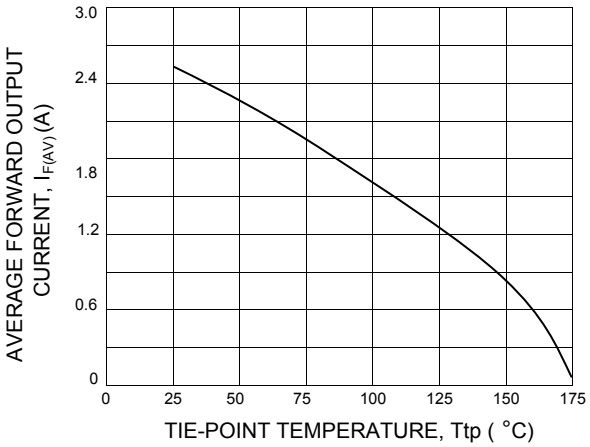



**FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

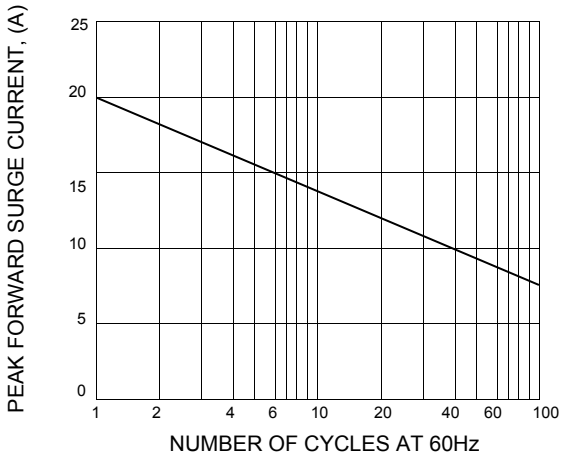



**FIG.3 - FORWARD CURRENT AS FUNCTION OF FORWARD VOLTAGE**

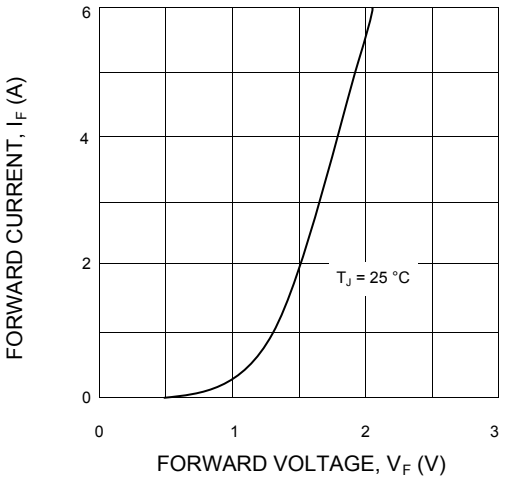



**FIG.4 - REVERSE CURRENT AS FUNCTION OF JUNCTION TEMPERATURE**

