

RoHS Compliant Product  
A suffix of "-C" specifies and halogen free

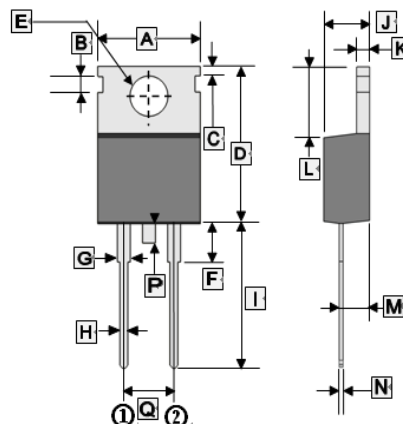
## FEATURES

- Fast switching for high efficiency
- Low noise
- Low reverse leakage current
- High voltage super FRD
- PFC application

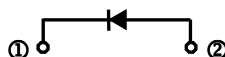
## MECHANICAL DATA

- Case : Molded plastic TO-220YA
- Epoxy : UL 94V-0 rate flame retardant
- Terminals : Solderable per MIL-STD-202 method 208
- Mounting position : Any
- Weight : 2.07 grams

TO-220YA



| REF. | Millimeter |      | REF. | Millimeter |       |
|------|------------|------|------|------------|-------|
|      | Min.       | Max. |      | Min.       | Max.  |
| A    | -          | 10.5 | I    | 12.90      | 13.35 |
| B    | 1.58       | 1.82 | J    | 4.44       | 4.70  |
| C    | 1.33       | 1.45 | K    | 1.14       | 1.40  |
| D    | 15.3       | 16.2 | L    | 5.84       | 6.86  |
| E    | 3.50       | 3.91 | M    | 2.25       | 2.60  |
| F    | 2.90       | 3.25 | N    | 0.35       | 0.64  |
| G    | 1.22       | 1.43 | P    | -          | 1.7   |
| H    | 0.68       | 0.94 | Q    | 4.95       | 5.20  |



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, de-rate current by 20%.)

| Parameter                                                                                         |                         | Symbol          | Rating | Unit                        |
|---------------------------------------------------------------------------------------------------|-------------------------|-----------------|--------|-----------------------------|
| Maximum Recurrent Peak Reverse Voltage                                                            |                         | $V_{RRM}$       | 1200   | V                           |
| Maximum RMS Voltage                                                                               |                         | $V_{RMS}$       | 840    | V                           |
| Maximum DC Blocking Voltage                                                                       |                         | $V_{DC}$        | 1200   | V                           |
| Maximum Average Forward Rectified Current $T_C=140^\circ\text{C}$                                 |                         | $I_{F(AV)}$     | 15.0   | A                           |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method) |                         | $I_{FSM}$       | 200    | A                           |
| Instantaneous Forward Voltage                                                                     | $T_J=25^\circ\text{C}$  | $V_F$           | 3.2    | V                           |
|                                                                                                   | $T_J=150^\circ\text{C}$ |                 | 2.8    |                             |
| Maximum DC Reverse Current At Rated DC Blocking Voltage                                           | $T_J=25^\circ\text{C}$  | $I_R$           | 100    | $\mu\text{A}$               |
|                                                                                                   | $T_J=150^\circ\text{C}$ |                 | 500    |                             |
| Maximum Reverse Recovery Time <sup>1</sup>                                                        |                         | $T_{RR}$        | 45     | nS                          |
| Maximum Reverse Recovery Time <sup>2</sup>                                                        |                         | $T_{RR}$        | 75     |                             |
| Typical Junction Capacitance <sup>3</sup>                                                         |                         | $C_J$           | -      | pF                          |
| Typical Thermal Resistance <sup>4</sup>                                                           |                         | $R_{\theta JC}$ | 1.5    | $^\circ\text{C} / \text{W}$ |
| Operating Junction and Storage Temperature Range                                                  |                         | $T_J, T_{STG}$  | 175    | $^\circ\text{C}$            |

Notes :

1. Reverse recovery test conditions  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .
2. Reverse recovery test conditions  $I_F = 15\text{A}$ ,  $dI_F / dt = 100\text{A} / \mu\text{s}$ .
3. Junction Capacitance test conditions :  $V_R = 10\text{V}$ ,  $I_F = 0$ .
4. Thermal Resistance junction to case.

## RATINGS AND CHARACTERISTICS CURVE

FIG.1 - FORWARD CURRENT DERATING CURVE

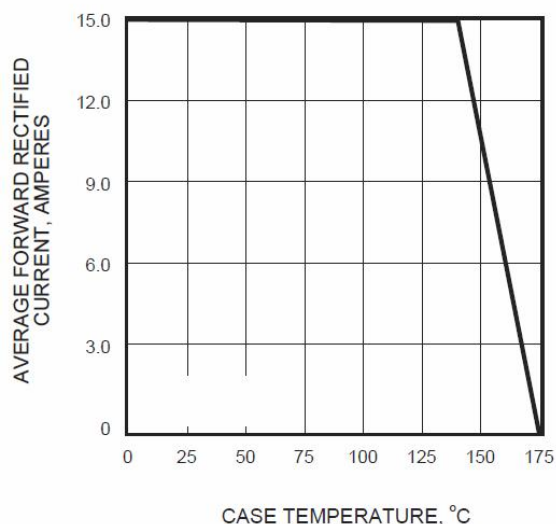


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

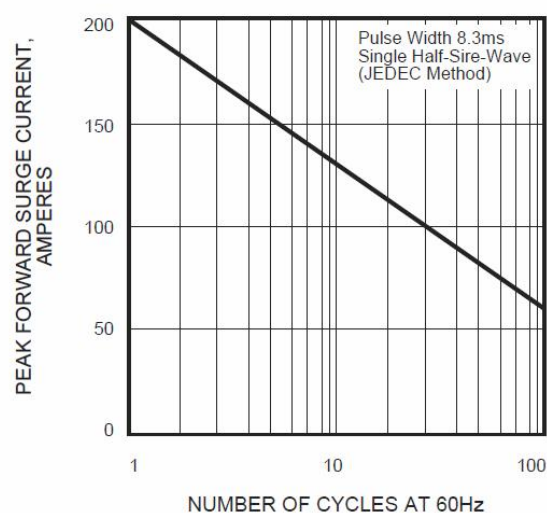


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

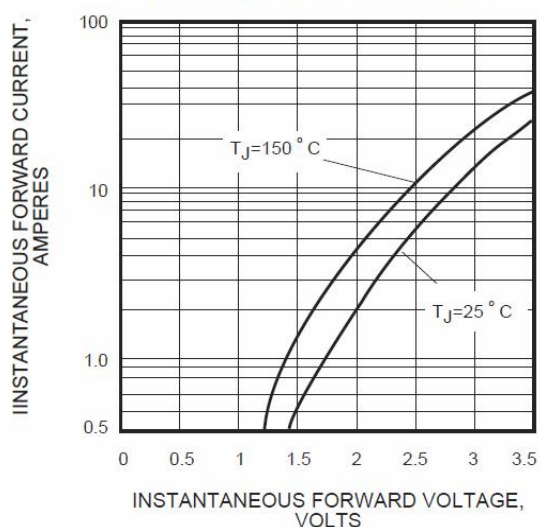


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

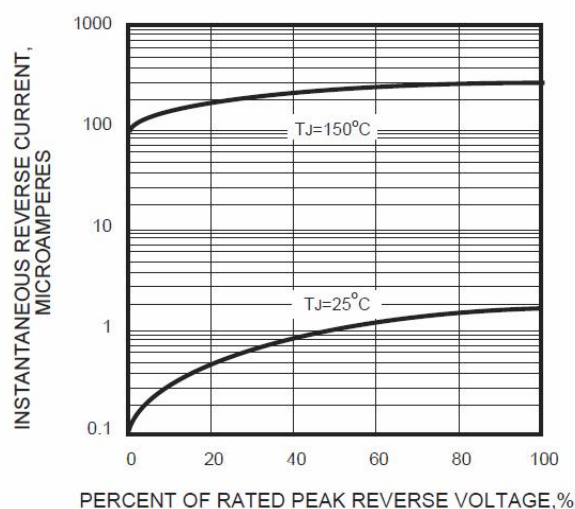


FIG.5 -  $T_{rr}$ ,  $t_a$  AND  $t_b$  CURVES vs FORWARD CURRENT

