

## UGSA12J

### Ultra fast Plastic Power Rectifiers

VOLTAGE: 600V

CURRENT:12.0A



#### FEATURE

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for use in very high frequency switching power supplies, inverters and as free wheeling diodes
- Ultra fast recovery time for high efficiency
- Excellent high temperature switching
- Glass passivated junction
- High voltage and high reliability
- High speed switching
- Low forward voltage

#### MECHANICAL DATA

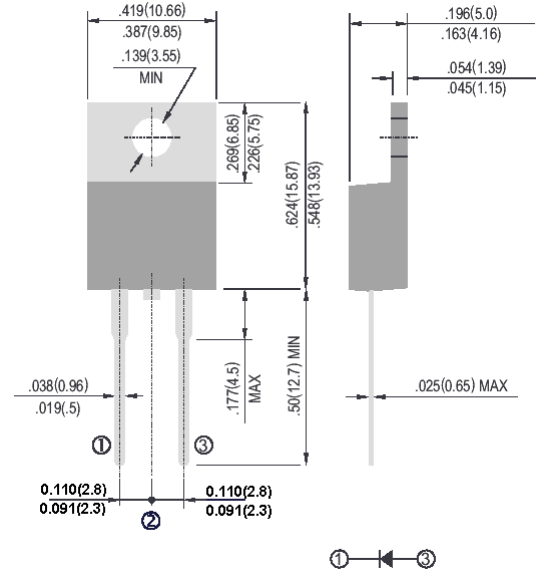
Case: JEDEC TO-220 molded plastic body over passivated chip

Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any

#### TO-220AC



Dimensions in inches and (millimeters)

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

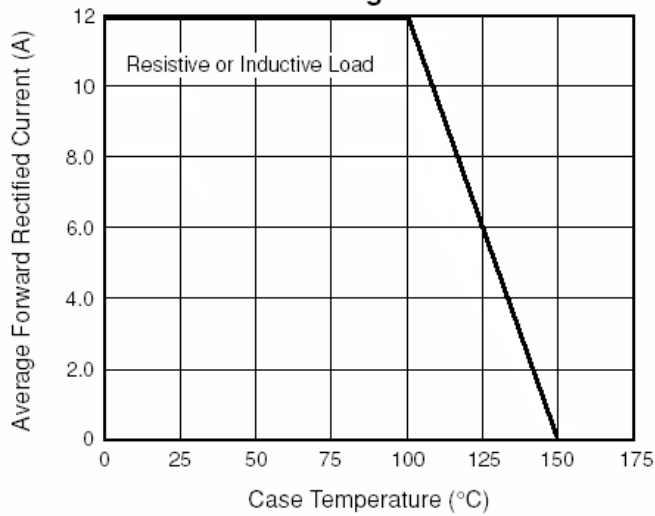
(single-phase, half-wave, 60HZ, resistive or inductive load rating at 25°C, unless otherwise stated)

|                                                                                      | SYMBOL                            | UGSA12J     | units |
|--------------------------------------------------------------------------------------|-----------------------------------|-------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                               | V <sub>rrm</sub>                  | 600         | V     |
| Maximum RMS Voltage                                                                  | V <sub>rms</sub>                  | 420         | V     |
| Maximum DC blocking Voltage                                                          | V <sub>dc</sub>                   | 600         | V     |
| Maximum Average Forward Rectified<br>at T <sub>c</sub> =100°C                        | I <sub>f(av)</sub>                | 12.0        | A     |
| Peak Forward Surge Current 8.3ms single<br>half sine-wave superimposed on rated load | I <sub>fsm</sub>                  | 120         | A     |
| Maximum Forward Voltage at rated Forward<br>Current and 25°C                         | V <sub>f</sub>                    | 2.9         | V     |
| Maximum Reverse Recovery Time (Note 1)                                               | T <sub>rr</sub>                   | 20          | nS    |
| Maximum DC Reverse Current Ta =25°C<br>at rated DC blocking voltage Ta =125°C        | I <sub>r</sub>                    | 10<br>100   | μA    |
| Typical thermal resistance junction to case                                          | R <sub>th(jc)</sub>               | 1.7         | °C/W  |
| Storage and Operating Temperature Range                                              | T <sub>stg</sub> , T <sub>j</sub> | -55 to +150 | °C    |

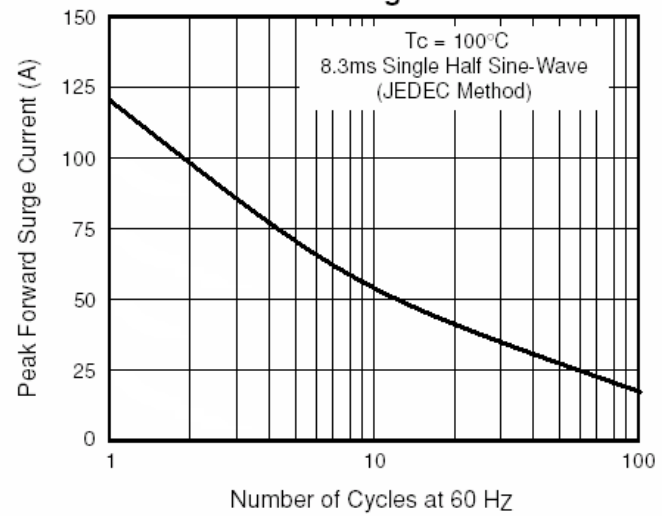
#### Note:

1. Reverse Recovery Condition I<sub>f</sub> =0.5A, I<sub>r</sub> =1.0A, I<sub>rr</sub> =0.25A

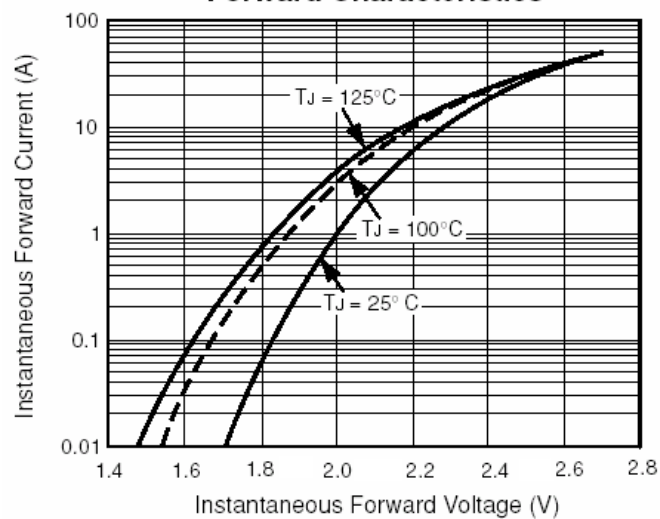
**Fig. 1 – Maximum Forward Current Derating Curve**



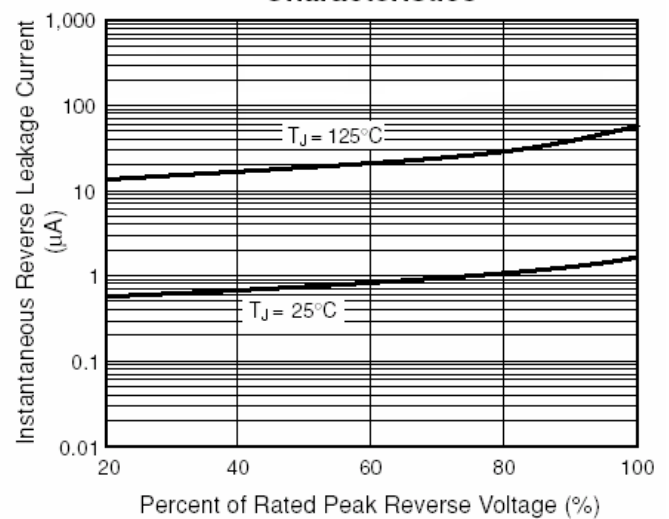
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



**Fig. 3 – Typical Instantaneous Forward Characteristics**



**Fig. 4 – Typical Reverse Leakage Characteristics**



**Fig. 5 – Typical Junction Capacitance**

