

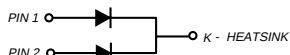
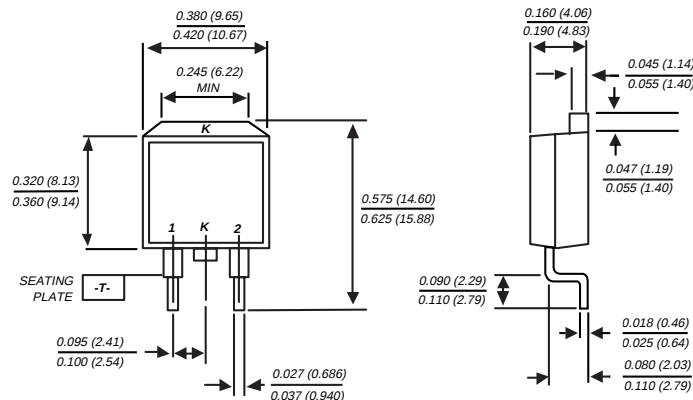
# UGB18ACT THRU UGB18DCT

## ULTRAFAST EFFICIENT PLASTIC RECTIFIER

Reverse Voltage - 50 to 200 Volts

Forward Current - 18.0 Amperes

### TO-263AB



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- ◆ Ideally suited for use in very high frequency switching power supplies, inverters and as a free wheeling diode
- ◆ Ultrafast 25 nanosecond reverse recovery times
- ◆ Soft recovery characteristics
- ◆ Excellent high temperature switching
- ◆ Nitride oxide passivated junctions
- ◆ High temperature soldering in accordance with CECC 802 / Reflow guaranteed



### MECHANICAL DATA

**Case:** JEDEC TO-263AB molded plastic body

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

**Polarity:** As marked

**Mounting Position:** Any

**Weight:** 0.08 ounce, 2.24 grams

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                                           | SYMBOLS         | UGB18ACT             | UGB18BCT | UGB18CCT | UGB18DCT | UNITS              |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|----------|----------|----------|--------------------|
| Maximum repetitive peak reverse voltage                                                                                                   | $V_{RRM}$       | 50                   | 100      | 150      | 200      | Volts              |
| Maximum RMS voltage                                                                                                                       | $V_{RMS}$       | 35                   | 70       | 105      | 140      | Volts              |
| Maximum DC blocking voltage                                                                                                               | $V_{DC}$        | 50                   | 100      | 150      | 200      | Volts              |
| Maximum average forward rectified current at $T_C=105^\circ\text{C}$                                                                      | $I_{(AV)}$      | 18.0                 |          |          |          | Amps               |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed<br>on rated load (JEDEC Method) per leg at $T_C=105^\circ\text{C}$ | $I_{FSM}$       | 175.0                |          |          |          | Amps               |
| Maximum instantaneous forward voltage per leg at:<br>9.0A<br>20A<br>5.0A, $T_J=100^\circ\text{C}$                                         | $V_F$           | 1.10<br>1.20<br>0.95 |          |          |          | Volts              |
| Maximum DC reverse current<br>at rated DC blocking voltage per leg<br>$T_C=25^\circ\text{C}$<br>$T_C=100^\circ\text{C}$                   | $I_R$           | 10.0<br>300.0        |          |          |          | $\mu\text{A}$      |
| Maximum reverse recovery time (NOTE 1)                                                                                                    | $t_{rr}$        | 20.0                 |          |          |          | ns                 |
| Maximum reverse recovery time<br>$T_J=25^\circ\text{C}$<br>(NOTE 2)<br>$T_J=100^\circ\text{C}$                                            | $t_{rr}$        | 30.0<br>50.0         |          |          |          | ns                 |
| Maximum recovered stored charge<br>(NOTE 2)<br>$T_J=25^\circ\text{C}$<br>$T_J=100^\circ\text{C}$                                          | $Q_{rr}$        | 20.0<br>45.0         |          |          |          | nC                 |
| Typical junction capacitance (NOTE 3)                                                                                                     | $C_J$           | 30.0                 |          |          |          | pF                 |
| Typical thermal resistance (NOTE 4)                                                                                                       | $R_{\theta JC}$ | 4.0                  |          |          |          | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range                                                                                          | $T_J, T_{STG}$  | -65 to +150          |          |          |          | $^\circ\text{C}$   |

#### 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)  $t_{rr}$  and  $Q_{rr}$  measured at:  $I_F=9.0\text{A}$ ,  $V_R=30\text{V}$ ,  $di/dt=50\text{A}/\mu\text{s}$ ,  $I_{rr}=10\%$   $I_{RM}$
- (3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
- (4) Thermal resistance from junction to case per leg

**NOTICE:** Advanced product information is subject to change without notice

# RATINGS AND CHARACTERISTIC CURVES UGB18ACT THRU UGB18DCT

FIG. 1 - FORWARD CURRENT DERATING CURVE

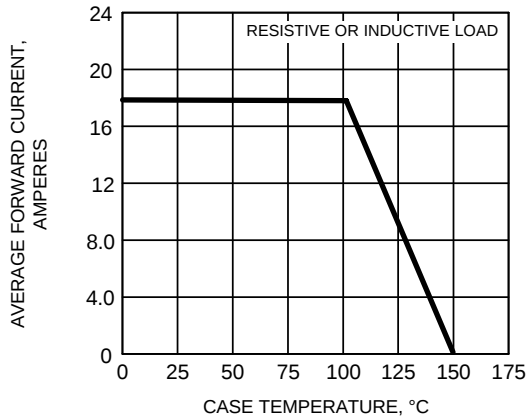


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

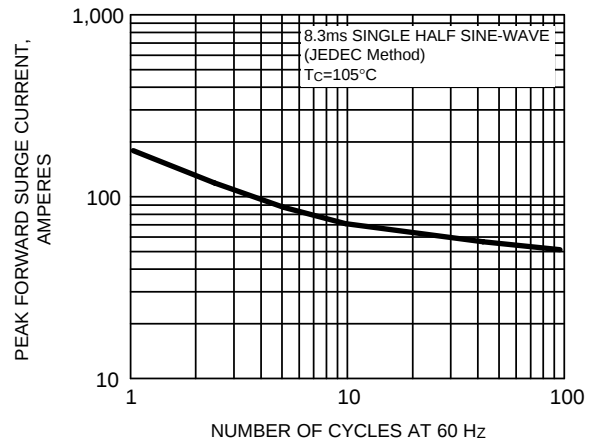


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

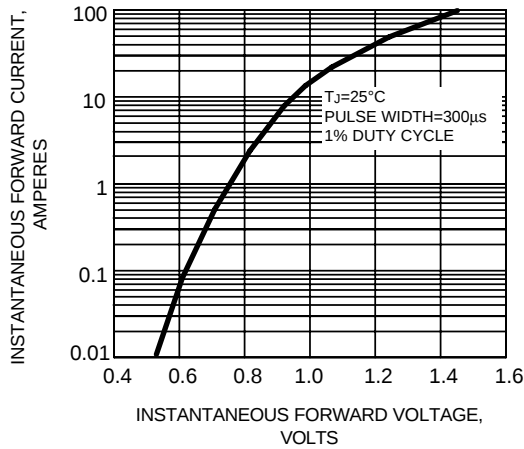


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER LEG

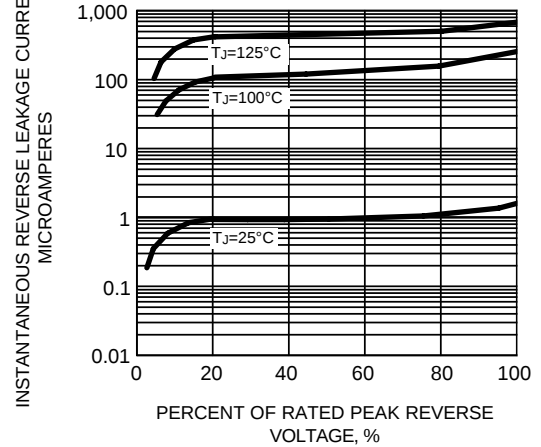


FIG. 5 - REVERSE SWITCHING CHARACTERISTICS PER LEG

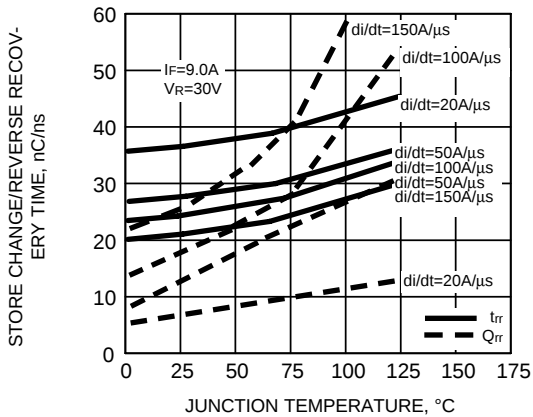


FIG. 6 - TYPICAL JUNCTION CAPACITANCE PER LEG

