

FEATURES

- * Low forward voltage drop
- * High current capability
- * High reliability
- * High surge current capability
- * Epitaxial construction

MECHANICAL DATA

- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Lead: Lead solderable per MIL-STD-202, method 208 guaranteed
- * Polarity: As Marked
- * Mounting position: Any
- * Weight: 2.24 grams

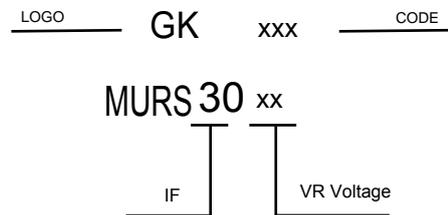


VOLTAGE RANGE

200 to 1000 Volts

CURRENT

30.0 Ampere



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| TYPE NUMBER | MURS3020 | MURS3040 | MURS3060 | MURS3080 | MURS30100 | UNITS |
|--|------------|----------|----------|----------|-----------|-------|
| Maximum Recurrent Peak Reverse Voltage | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current | 30 | | | | | A |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | 250 | | | | | A |
| Maximum Instantaneous Forward Voltage at 30.0A | 1.0 | 1.25 | 1.7 | 2.1 | | V |
| Maximum DC Reverse Current Ta=25°C | 5.0 | | | | | μA |
| at Rated DC Blocking Voltage Ta=100°C | 150 | | | | | μA |
| Maximum Reverse Recovery Time (Note 1) | 35 | | | | | nS |
| Typical Junction Capacitance (Note 2) | 140 | | | | | pF |
| Operating and Storage Temperature Range T _J , T _{STG} | -65 — +150 | | | | | °C |

NOTES:

- Reverse Recovery Time test condition: IF=0.5A, IR=1.0A, IRR=0.25A
- Measured at 1MHz and applied reverse voltage of 4.0V D.C.

RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

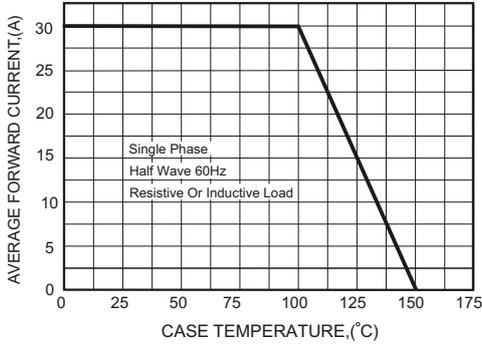


FIG.2-TYPICAL FORWARD CHARACTERISTICS

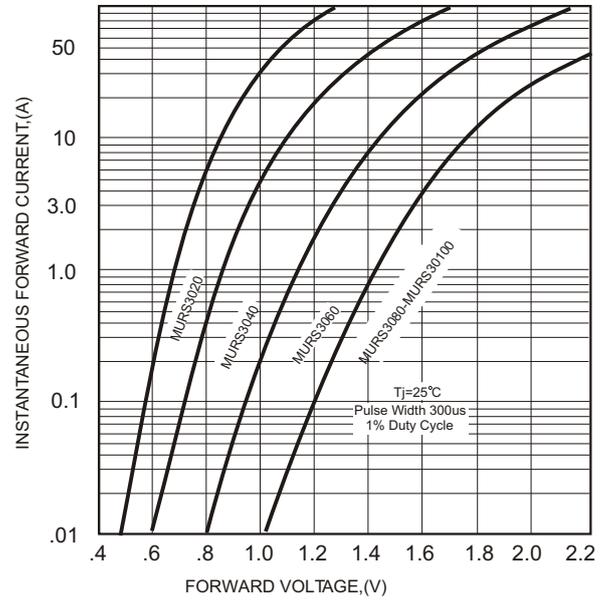


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

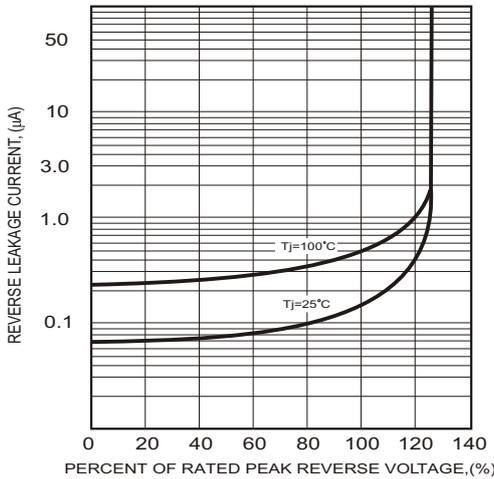


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

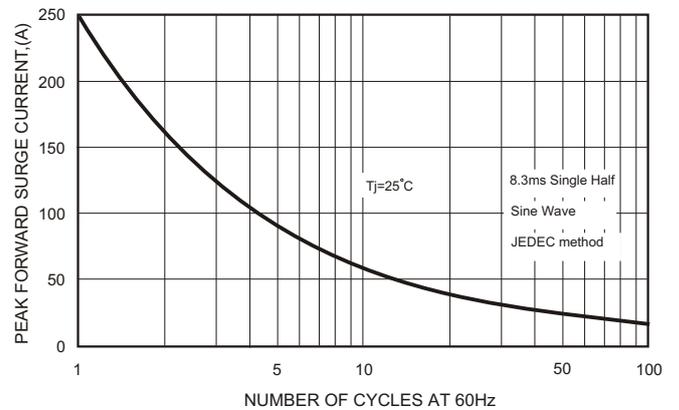
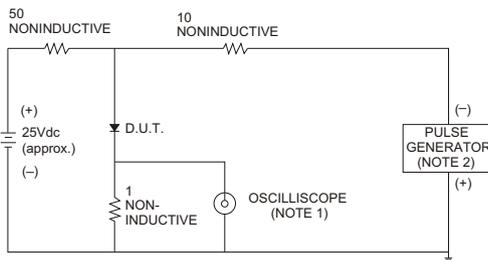


FIG.5- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm, 22pF.
2. Rise Time= 10ns max., Source Impedance= 50 ohms.

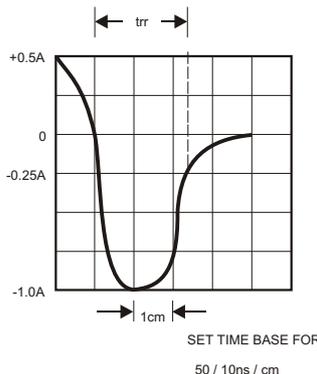
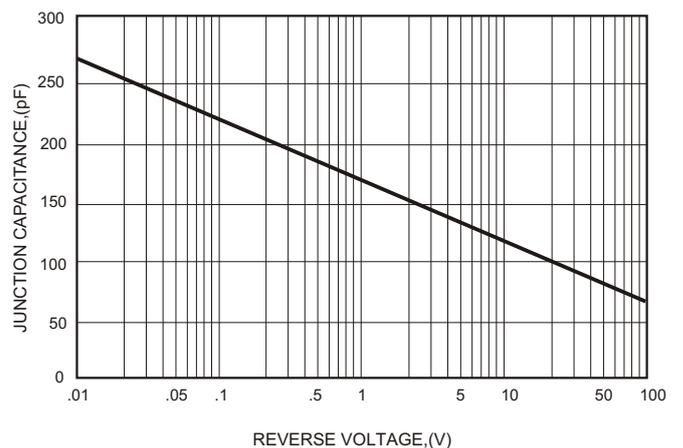
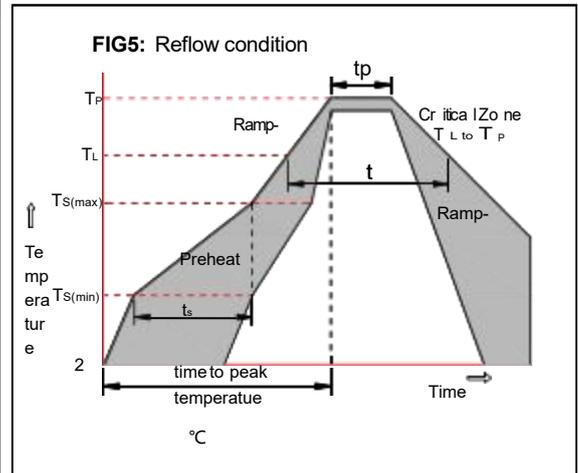


FIG.6-TYPICAL JUNCTION CAPACITANCE



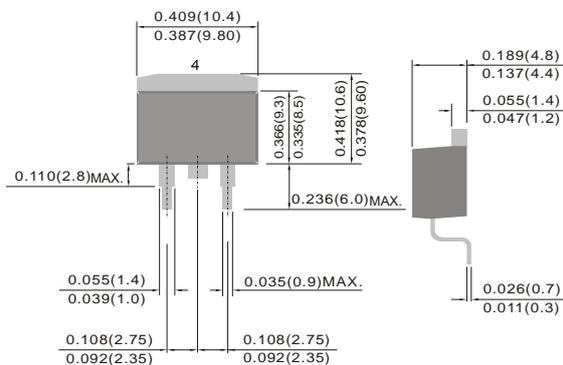
Soldering parameters

| Reflow Condition | | Pb-Free assembly (see as below) |
|---|------------------------------------|------------------------------------|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150 °C |
| | -Temperature Max ($T_{s(max)}$) | +200 °C |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3 °C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3 °C/sec. Max |
| Reflow | -Temperature (T_L) (Liquid us) | +217 °C |
| | -Temperature (t_L) | 60-150 secs. |
| Peak Temp (T_P) | | +260(+0/-5) °C |
| Time within 5 °C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6 °C/sec. Max |
| Time 25 °C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260 °C |

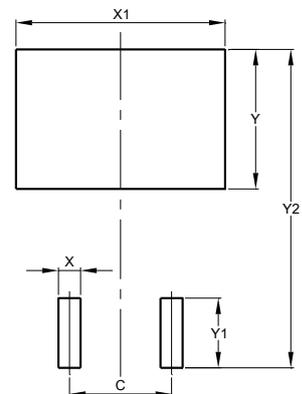


Package Dimensions & Suggested Pad Layout

TO263AB (D2PAK)



Dimensions in inches and (millimeters)



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 5.05 |
| X | 1.40 |
| X1 | 11.00 |
| Y | 9.20 |
| Y1 | 4.00 |
| Y2 | 16.60 |

Tape & reel specification

| Tape | | Symbol | Dimension (mm) | | |
|---|-----------|----------|----------------|----|-----------|
| <p>SECTION : A-A</p> <p>SECTION : B-B</p> | | P0 | 4.00±0.20 | | |
| | | P1 | 16.00±0.20 | | |
| | | P2 | 2.00±0.20 | | |
| | | D0 | 1.50±0.20 | | |
| | | D1 | 1.50±0.20 | | |
| | | E | 1.75±0.15 | | |
| | | F | 11.50±0.20 | | |
| | | W | 24.00±0.40 | | |
| | | A0 | 10.50±0.20 | | |
| | | B0 | 16.00±0.25 | | |
| | | K0 | 5.20±0.25 | | |
| | | T | 0.35±0.10 | | |
| | | 13" Reel | | D2 | 330.0±5.0 |
| | | | | D3 | 73Min. |
| D4 | 14.0±2.5 | | | | |
| W1 | 28.00±2.0 | | | | |
| Quantity: 800PCS | | | | | |