

## 40A LOW $V_F$ TRENCH MOS SCHOTTKY RECTIFIERS

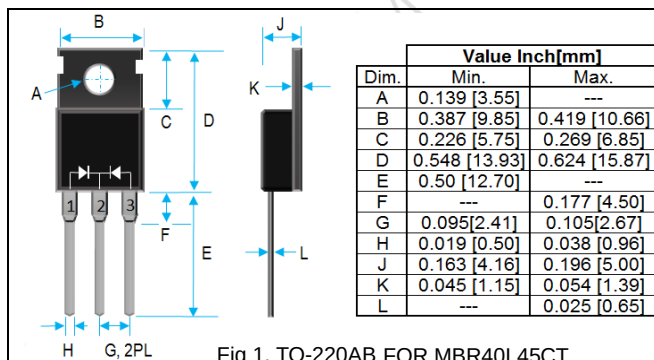


Fig 1. TO-220AB FOR MBR40L45CT

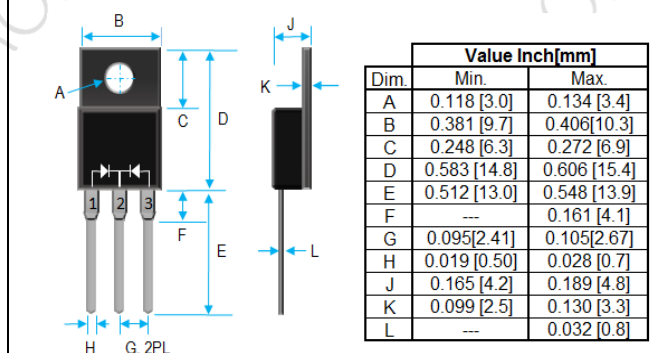


Fig 2. ITO-220AB FOR MBR40L45FCT

### PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION 94V-0
2. EXTREMELY LOW  $V_F$
3. TRENCH MOS SCHOTTKY TECHNOLOGY
4. LOW POWER LOSS / HIGH EFFICIENCY
5. HIGH FREQUENCY OPERATION
6. CASE: TRANSFER MOLDED  
TO-220AB FOR MBR40L45CT  
ITO-220AB FOR MBR40L45FCT
7. DIMENSIONS IN INCHES AND (MILLIMETERS)
8. LEADS: SOLDERABILITY PER MIL-STD-202 METHOD 208
9. WEIGHT: 2.15 GRAMS (TO-220AB)  
1.55GRAMS (ITO-220AB)
10. RoHS/HALOGEN FREE

## ELECTRICAL CHARACTERISTICS

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED) AND ELECTRICAL CHARACTERISTICS

| RATING                                                                                        | SYMBOL          |                                     | UNITS              |
|-----------------------------------------------------------------------------------------------|-----------------|-------------------------------------|--------------------|
| MAXIMUM RECURRENT PEAK REVERSE VOLTAGE                                                        | $V_{RRM}$       | 45                                  | VDC                |
| MAXIMUM RMS VOLTAGE                                                                           | $V_{RMS}$       | 31.5                                | VAC                |
| MAXIMUM DC BLOCKING VOLTAGE                                                                   | $V_{DC}$        | 45                                  | VDC                |
| MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT<br>SEE FIG.1                                        | $I_O$           | 40 (PER DEVICE)<br>20 (PER LEG)     | A                  |
| PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF<br>SINE-WAVE SUPERIMPOSED ON RATED LOAD PER LEG | $I_{FSM}$       | 250                                 | A                  |
| STORAGE TEMPERATURE RANGE                                                                     | $T_{STG}$       | - 55 TO +175                        | $^\circ\text{C}$   |
| OPERATING TEMPERATURE RANGE                                                                   | $T_J$           | - 55 TO +150                        | $^\circ\text{C}$   |
| MAXIMUM FORWARD VOLTAGE AT $I_F = 20\text{A } T_J = 25^\circ\text{C}$                         | $V_F$           | 0.52                                | V                  |
| $T_J = 125^\circ\text{C}$                                                                     |                 | 0.50                                |                    |
| TYPICAL FORWARD VOLTAGE $I_F = 40\text{A } T_J = 25^\circ\text{C}$                            |                 | 0.65                                |                    |
| $T_J = 125^\circ\text{C}$                                                                     |                 | 0.63                                |                    |
| MAXIMUM REVERSE CURRENT AT $25^\circ\text{C}$ , PER LEG (NOTE 1)                              | $I_R$           | 0.5                                 | mA                 |
| MAXIMUM REVERSE CURRENT AT $125^\circ\text{C}$ , PER LEG (NOTE 1)                             | $I_R$           | 25                                  | mA                 |
| TYPICAL THERMAL RESISTANCE JUNCTION TO CASE PER LEG                                           | $R_{\theta jc}$ | MBR40L45CT: 2.2<br>MBR40L45FCT: 4.0 | $^\circ\text{C/W}$ |
| ISOLATION VOLTAGE FROM TERMINAL TO HEATSINK $T=1\text{MIN}$                                   |                 | 1500 (FOR MBR40L45FCT)              | VAC                |

NOTE : 1. PULSE TEST: 300 $\mu\text{s}$  PULSE WIDTH, 1% DUTY CYCLE.

## RATINGS AND CHARACTERISTIC CURVES

FIG. 1-FORWARD CURRENT DERATING CURVE

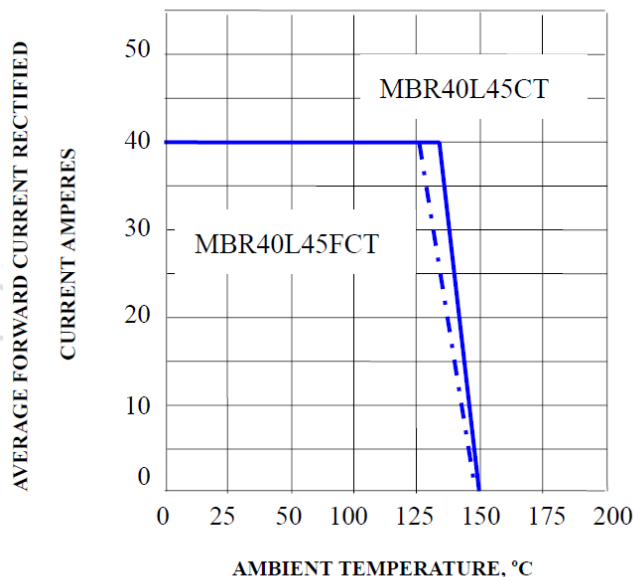


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE RATING

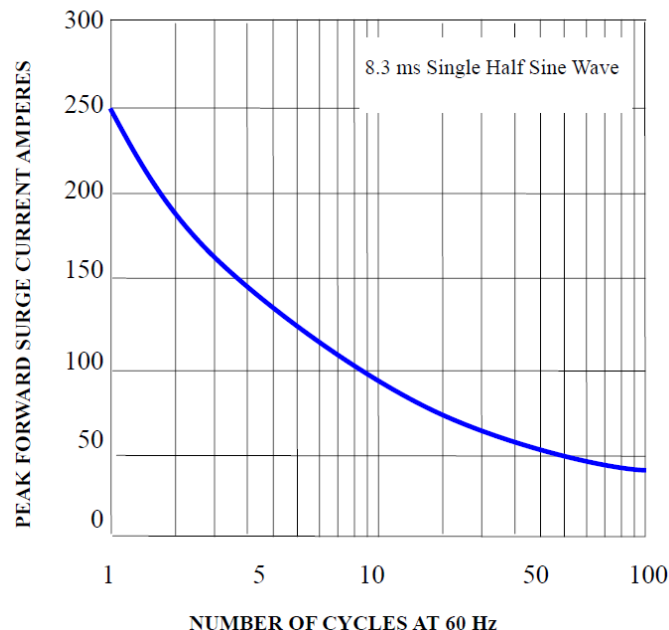


FIG. 3- TYPICAL REVERSE CHARACTERISTICS

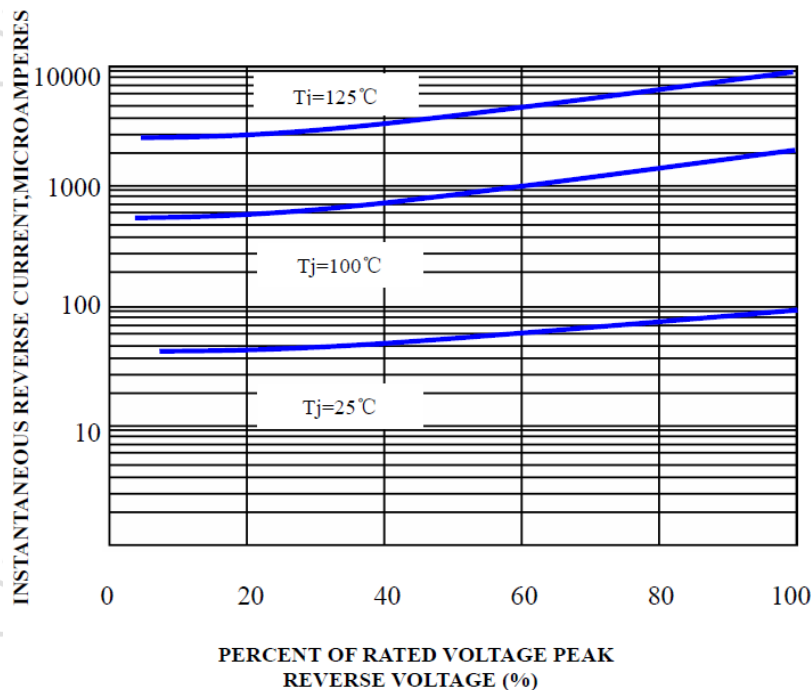


FIG. 4- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

