

## 20A SCHOTTKY BARRIER RECTIFIERS

Fig 1. TO-220AB FOR MBR20xxxCT

| Dim. | Value Inch[mm] |               |
|------|----------------|---------------|
|      | Min.           | Max.          |
| A    | 0.139 [3.55]   | ---           |
| B    | 0.387 [9.85]   | 0.419 [10.66] |
| C    | 0.226 [5.75]   | 0.269 [6.85]  |
| D    | 0.548 [13.93]  | 0.624 [15.87] |
| E    | 0.50 [12.70]   | ---           |
| F    | ---            | 0.177 [4.50]  |
| G    | 0.095[2.41]    | 0.105[2.67]   |
| H    | 0.019 [0.50]   | 0.038 [0.96]  |
| J    | 0.163 [4.16]   | 0.196 [5.00]  |
| K    | 0.045 [1.15]   | 0.054 [1.39]  |
| L    | ---            | 0.025 [0.65]  |

### PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION 94V-0
2. EXTREMELY LOW  $V_f$
3. LOW STORED CHARGE
4. MAJORITY CARRIER CONDUCTION
5. LOW POWER LOSS/HIGH EFFICIENCY
6. CASE: TRANSFER MOLDED  
TO-220AB FOR MBR20xxxCT  
ITO-220AB FOR MBR20xxxFCT
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 COMPLIANT AND HALOGEN FREE

Fig 2. ITO-220AB FOR MBR20xxxFCT

| Dim. | Value Inch[mm] |              |
|------|----------------|--------------|
|      | Min.           | Max.         |
| A    | 0.118 [3.0]    | 0.134 [3.4]  |
| B    | 0.381 [9.7]    | 0.406[10.3]  |
| C    | 0.248 [6.3]    | 0.272 [6.9]  |
| D    | 0.583 [14.8]   | 0.606 [15.4] |
| E    | 0.512 [13.0]   | 0.548 [13.9] |
| F    | ---            | 0.161 [4.1]  |
| G    | 0.095[2.41]    | 0.105[2.67]  |
| H    | 0.019 [0.50]   | 0.028 [0.7]  |
| J    | 0.165 [4.2]    | 0.189 [4.8]  |
| K    | 0.099 [2.5]    | 0.130 [3.3]  |
| L    | ---            | 0.032 [0.8]  |

## ELECTRICAL CHARACTERISTICS

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

| RATING   | SYMBOL          | UNITS  |
|--|-----------------|--|
| MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT, SEE FIG.1                               | $I_o$           | 20 PER DEVICE (10 PER LEG) A                               |
| PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD | $I_{FSM}$       | 150 A  |
| TYPICAL THERMAL RESISTANCE   | $R_{\theta jC}$ | 2.2 (4.0 FOR $\geq 100\text{V}$ DEVICE) $^\circ\text{C/W}$ |
| STORAGE TEMPERATURE RANGE  | $T_{STG}$       | - 65 TO +175 $^\circ\text{C}$                              |
| MAXIMUM REVERSE CURRENT AT $25^\circ\text{C}$ PER LEG (NOTE 1)                     | $I_R$           | 0.05 (0.01mA FOR $\geq 100\text{V}$ DEVICE) mA             |
| MAXIMUM REVERSE CURRENT AT $125^\circ\text{C}$ PER LEG (NOTE 1)                    | $I_R$           | 10 mA  |
| ISOLATION VOLTAGE FROM TERMINAL TO HEATSINK $T=1\text{MIN}$                        |                 | 1500 (FOR MBR20xxxFCT ONLY) VAC                            |

| PART NUMBER   | MAX RECURRENT PK REVERSE VOLTAGE/DC BLOCKING $V_{RRM}/V_R$ (V) | MAX $V_{RMS}$ (V) | OPERATING TEMPERATURE RANGE ( $^\circ\text{C}$ ) | MAXIMUM FORWARD VOLTAGE $V_f$ @ $I_f=10\text{A}$ @ $25^\circ\text{C}$ | MAXIMUM FORWARD VOLTAGE $V_f$ @ $I_f=10\text{A}$ @ $125^\circ\text{C}$ | MAXIMUM FORWARD VOLTAGE $V_f$ @ $I_f=20\text{A}$ @ $25^\circ\text{C}$ | MAXIMUM FORWARD VOLTAGE $V_f$ @ $I_f=20\text{A}$ @ $125^\circ\text{C}$ |
|---------------|--|-------------------|--|---|--|---|--|
| MBR2040(F)CT  | 40   | 28                | - 55 TO +150                                     | 0.65V   | 0.57V  | 0.84V   | 0.72V  |
| MBR2045(F)CT  | 45   | 31.5              | - 55 TO +150                                     | 0.65V   | 0.57V  | 0.84V   | 0.72V  |
| MBR2060(F)CT  | 60   | 42                | - 55 TO +150                                     | 0.75V   | 0.70V  | 0.85V   | 0.75V  |
| MBR20100(F)CT | 100  | 70                | - 55 TO +150                                     | 0.85V   | 0.75V  | 0.95V   | 0.85V  |
| MBR20150(F)CT | 150  | 105               | - 55 TO +175                                     | 0.92V   | 0.80V  | 1.00V   | 0.90V  |
| MBR20200(F)CT | 200  | 140               | - 55 TO +175                                     | 0.92V   | 0.80V  | 1.00V   | 0.90V  |

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

2. CURRENT RATING IS BASED ON SINGLE PHASE, 1/2 WAVE, 60HZ, RESISTIVE OR INDUCTIVE LOAD. FOR CAPACITIVE LOAD, DERATE CURRENT BY 20%.

## RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - FORWARD DERATING CURVE

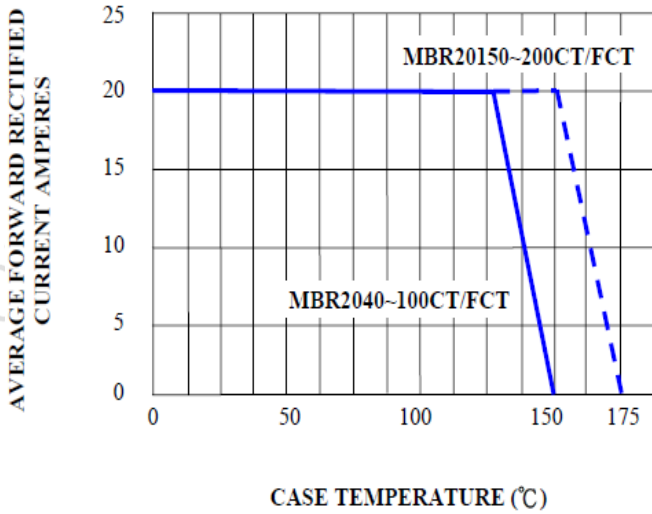


FIG. 2 - PEAK FORWARD SURGE CURRENT

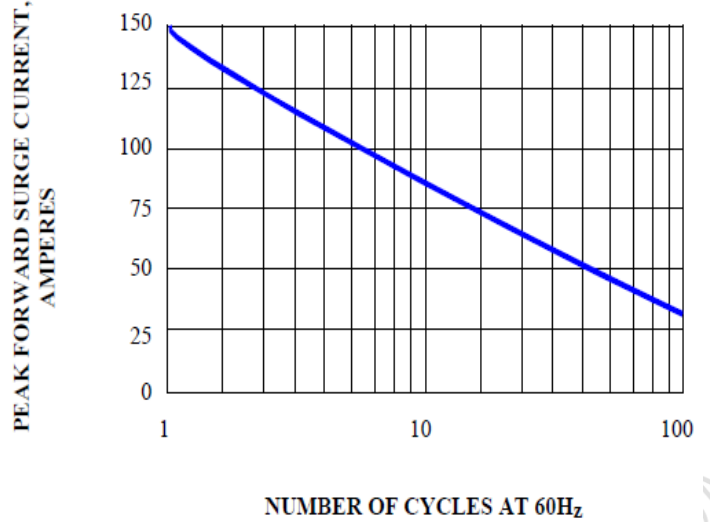


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

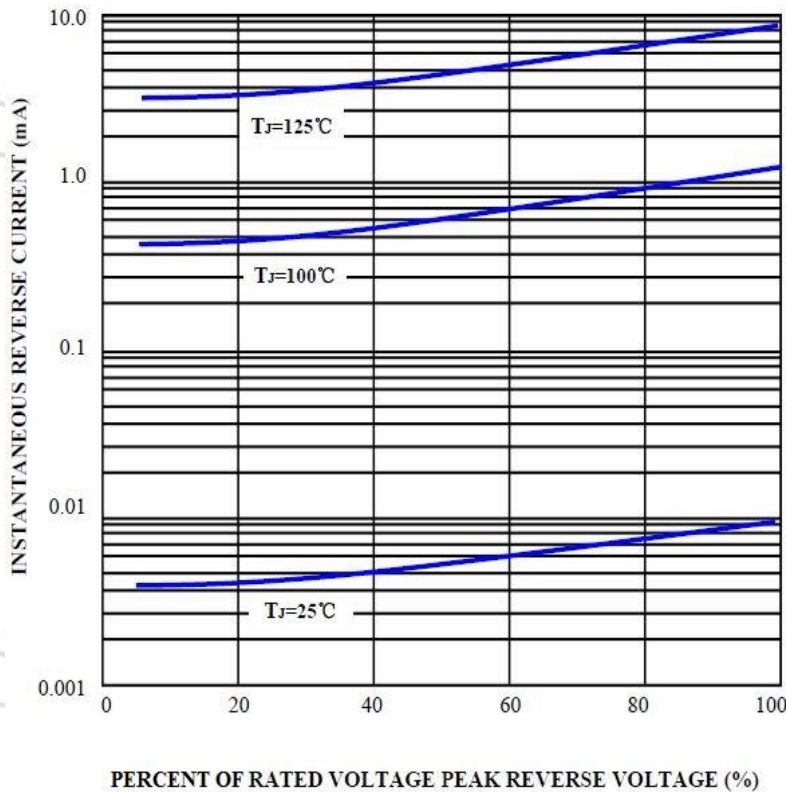


FIG. 4 - TYPICAL FORWARD CHARACTERISTIC PER LEG

