



## SCHOTTKY BARRIER RECTIFIERS

Reverse Voltage - 40 to 200 V

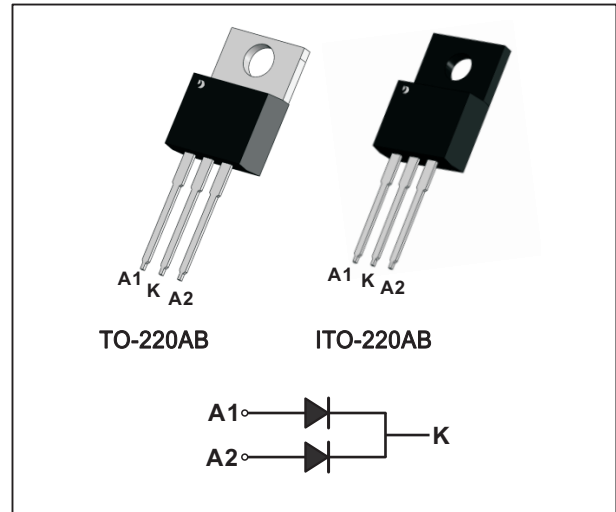
Forward Current - 10 A

### FEATURES

- High current capability
- Low forward voltage drop
- Low power loss, high efficiency
- High surge capability
- High temperature soldering guaranteed
- Mounting position: any

### Mechanical data

- Case: TO-220AB
- Approx. Weight: 1.9g (0.067oz)
- Case: ITO-220AB
- Approx. Weight: 2.1g (0.07oz)
- Terminals: Lead solderable per MIL-STD-202, Method 208



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

| CHARACTERISTICS   | TO-220          | MBR1040CT  | MBR1045CT | MBR1060CT | MBR10100CT | MBR10150CT | MBR10200CT | Units |    |
|---|-----------------|------------|-----------|-----------|------------|------------|------------|-------|----|
|   | ITO-220         | MBR1040FT  | MBR1045FT | MBR1060FT | MBR10100FT | MBR10150FT | MBR10200FT |       |    |
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$       | 40         | 45        | 60        | 100        | 150        | 200        | V     |    |
| Maximum RMS voltage   | $V_{RMS}$       | 28         | 31.5      | 42        | 70         | 105        | 140        | V     |    |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 40         | 45        | 60        | 100        | 150        | 200        | V     |    |
| Maximum Average Forward Rectified Current<br>Per leg<br>Per device  | $I_{F(AV)}$     | 5<br>10    |           |           |            |            |            | A     |    |
| Peak Forward Surge Current, 8.3ms<br>Single Half Sine-wave Superimposed<br>on Rated Load (JEDEC method) per leg | $I_{FSM}$       | 100        |           |           |            |            |            | A     |    |
| Max Instantaneous Forward Voltage at 5 A(per leg)   | $V_F$           | 0.70       |           | 0.75      | 0.85       | 0.90       | 0.92       | V     |    |
| Maximum DC Reverse Current $T_a = 25^\circ\text{C}$<br>at Rated DC Reverse Voltage $T_a = 125^\circ\text{C}$    | $I_R$           | 0.1<br>20  |           |           | 0.05<br>20 |            |            | mA    |    |
| Typical Junction Capacitance <sup>(1)</sup>   | $C_j$           | 300        |           | 200       |            |            |            | pF    |    |
| Typical Thermal Resistance <sup>(2)</sup>   | $R_{\theta JA}$ | 45         |           |           |            |            |            | °C/W  |    |
| Operating Junction Temperature Range  | $T_j$           | -55 ~ +150 |           |           |            | -55 ~ +175 |            |       | °C |
| Storage Temperature Range   | $T_{stg}$       | -55 ~ +150 |           |           |            | -55 ~ +175 |            |       | °C |

(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(2) P.C.B. mounted with 10cmX10cmX1mm copper pad areas.



Fig.1 Typical Forward Current Derating Curve

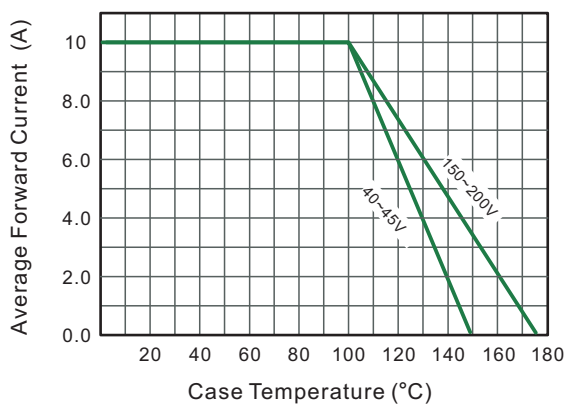


Fig.2 Typical Reverse Characteristics

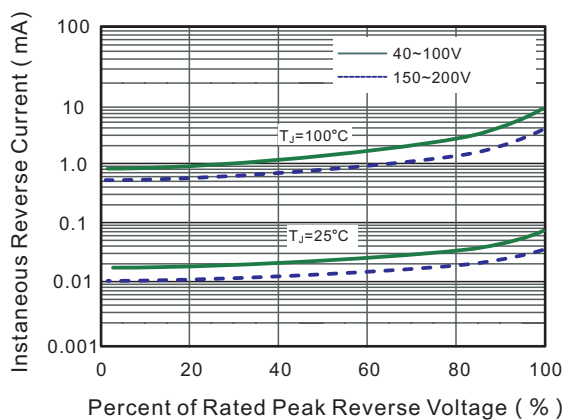


Fig.3 Typical Forward Characteristic(per leg)

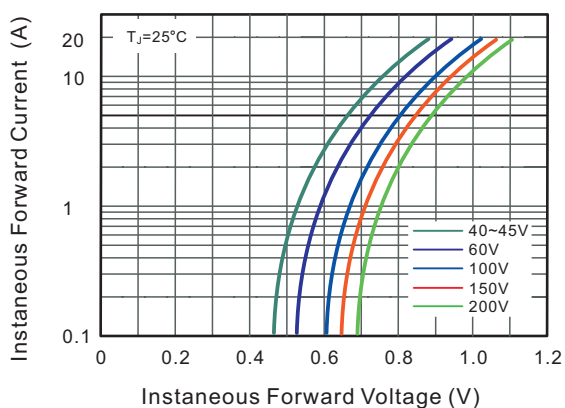


Fig.4 Typical Junction Capacitance

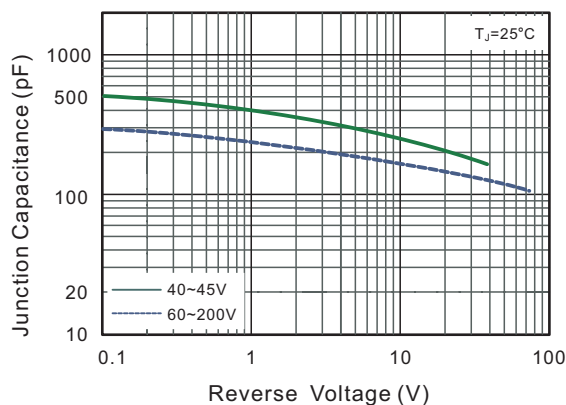


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

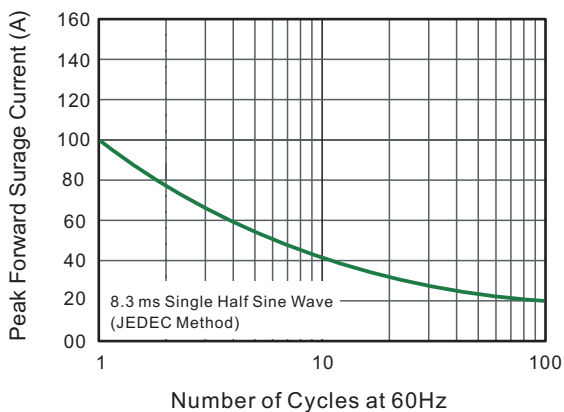
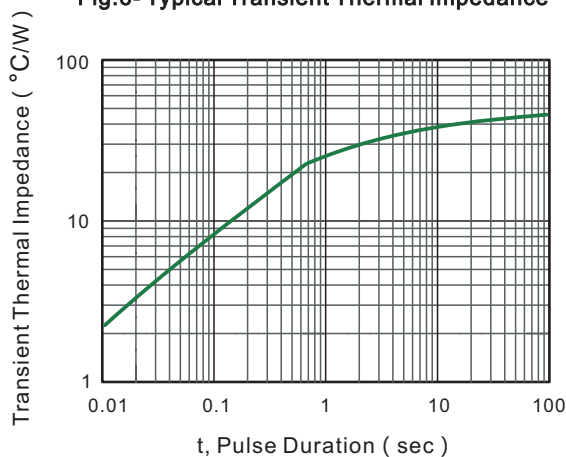


Fig.6- Typical Transient Thermal Impedance

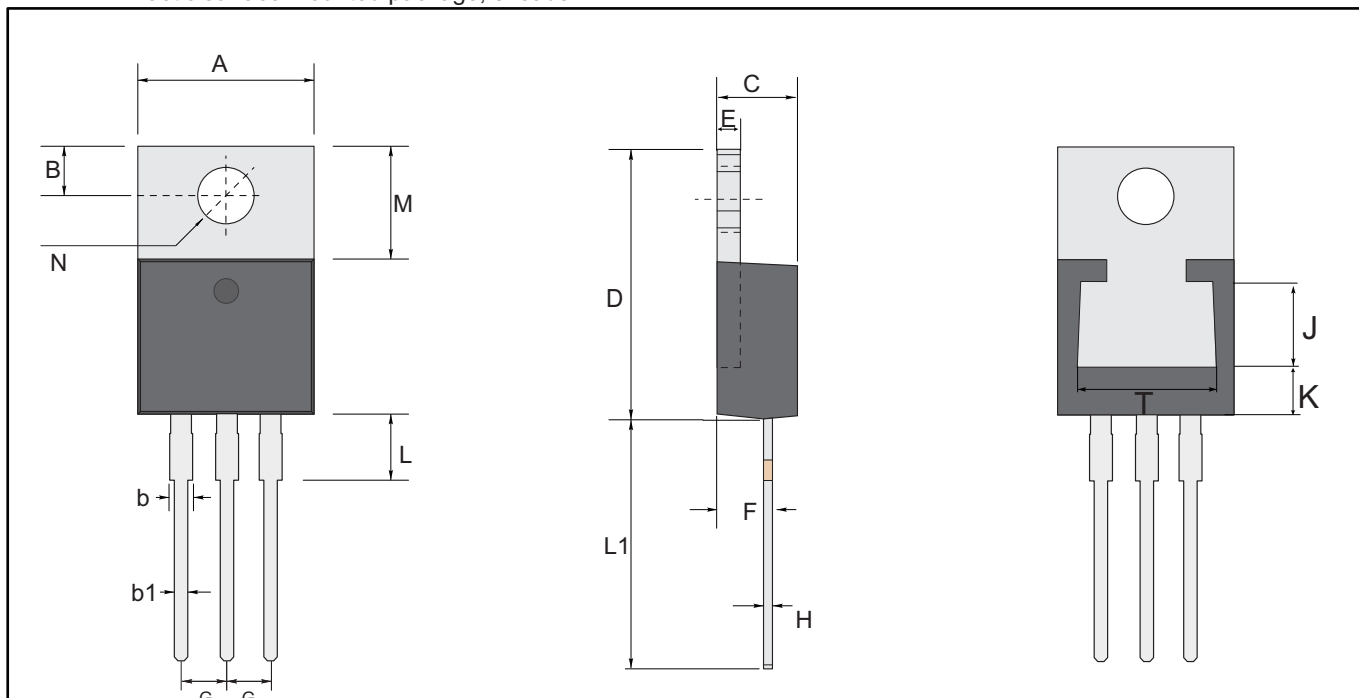




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

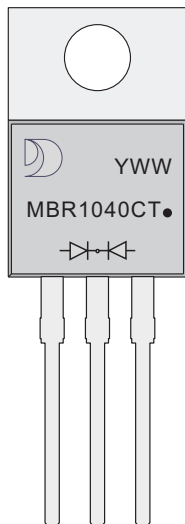
TO-220AB



TO-220AB mechanical data

| UNIT |     | A     | B    | b    | b1   | C    | D     | E    | F    | G               | H    | L    | L1    | M              | N               | J            | T            | K            |
|------|-----|-------|------|------|------|------|-------|------|------|-----------------|------|------|-------|----------------|-----------------|--------------|--------------|--------------|
| mm   | max | 10.45 | 2.94 | 1.77 | 0.94 | 4.76 | 16.0  | 1.40 | 2.80 | 2.54<br>TYPICAL | 0.64 | 4.2  | 14.79 | 6.6<br>TYPICAL | 3.84<br>TYPICAL | 4.65<br>ref. | 7.70<br>ref. | 3.22<br>ref. |
|      | typ | 9.94  | 2.74 | 1.27 | 0.81 | 4.53 | 15.09 | 1.27 | 2.69 |                 | 0.38 | 3.89 | 13.18 |                |                 |              |              |              |
|      | min | 9.85  | 2.54 | 1.14 | 0.62 | 4.42 | 14.6  | 1.14 | 2.20 |                 | 0.35 | 2.8  | 13.08 |                |                 |              |              |              |
| mil  | max | 411   | 116  | 70   | 40   | 187  | 630   | 55   | 110  | 100<br>TYPICAL  | 25   | 165  | 582   | 259<br>TYPICAL | 151<br>TYPICAL  | 1.83<br>ref. | 303<br>ref.  | 126<br>ref.  |
|      | typ | 391   | 107  | 50   | 31   | 178  | 594   | 50   | 105  |                 | 15   | 153  | 519   |                |                 |              |              |              |
|      | min | 388   | 100  | 45   | 24   | 174  | 575   | 45   | 87   |                 | 14   | 110  | 515   |                |                 |              |              |              |

MARKING DIAGRAM



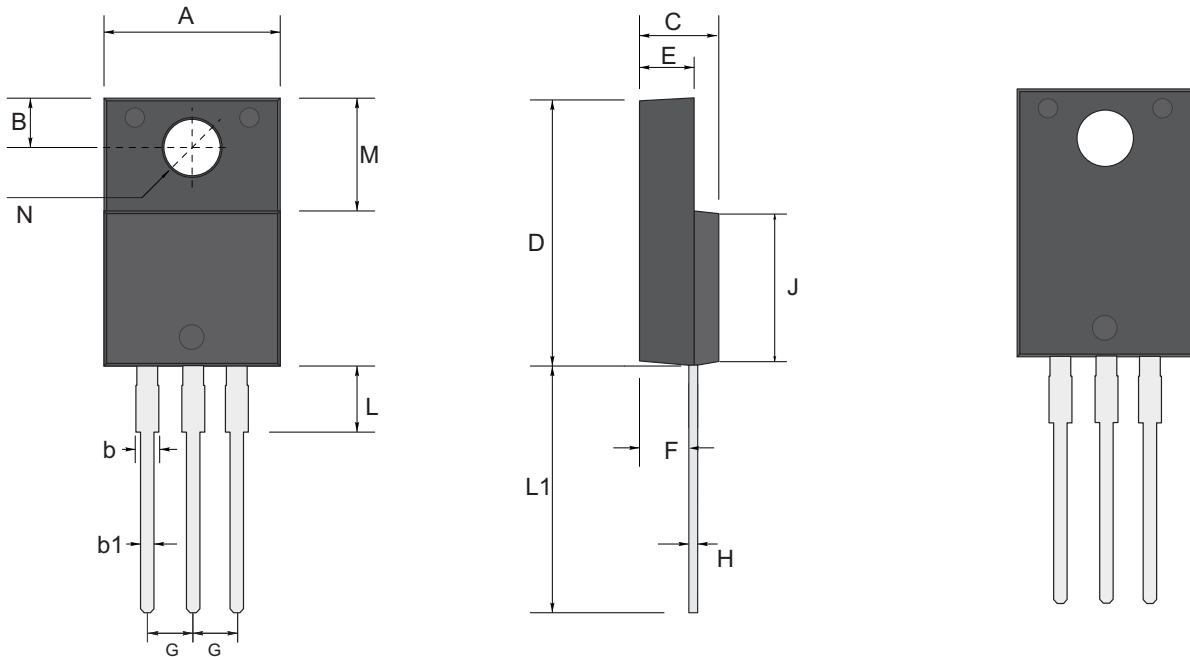
YWW: Date Code  
Y: Years(0~9)  
WW: Week  
MBR1040CT: Product name  
(NOTE: The weekly code is based on the actual number of weeks in the calendar year.)



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

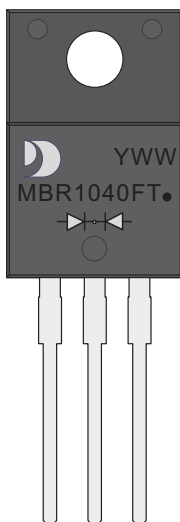
ITO-220AB



ITO-220AB mechanical data

| UNIT |     | A    | B    | b   | b1  | C   | D    | E   | F   | G               | H    | L   | L1   | M   | N              |
|------|-----|------|------|-----|-----|-----|------|-----|-----|-----------------|------|-----|------|-----|----------------|
| mm   | max | 10.5 | 2.85 | 1.4 | 0.8 | 4.7 | 16.0 | 2.9 | 2.8 | 2.54<br>TYPICAL | 0.70 | 2.9 | 14.3 | 7.0 | 3.4<br>TYPICAL |
|      | typ | 10.0 | 2.70 | 1.2 | 0.6 | 4.5 | 15.0 | 2.7 | 2.7 |                 | 0.55 | 2.5 | 13.5 | 6.8 |                |
|      | min | 9.85 | 2.54 | 1.1 | 0.5 | 4.4 | 14.7 | 2.5 | 2.5 |                 | 0.41 | 2.3 | 13.0 | 6.3 |                |
| mil  | max | 413  | 112  | 55  | 31  | 185 | 630  | 114 | 110 | 100<br>TYPICAL  | 27   | 114 | 563  | 276 | 134<br>TYPICAL |
|      | typ | 394  | 106  | 47  | 24  | 177 | 590  | 106 | 106 |                 | 22   | 98  | 531  | 267 |                |
|      | min | 388  | 100  | 43  | 20  | 173 | 580  | 98  | 98  |                 | 16   | 91  | 512  | 248 |                |

MARKING DIAGRAM



YWW: Date Code  
Y: Years(0~9)  
WW: Week  
MBR1040FT: Product name  
(NOTE: The weekly code is based on the actual number of weeks in the calendar year.)



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