

CURRENT 30 Ampere  
VOLTAGE RANG 40 to 200 Volts

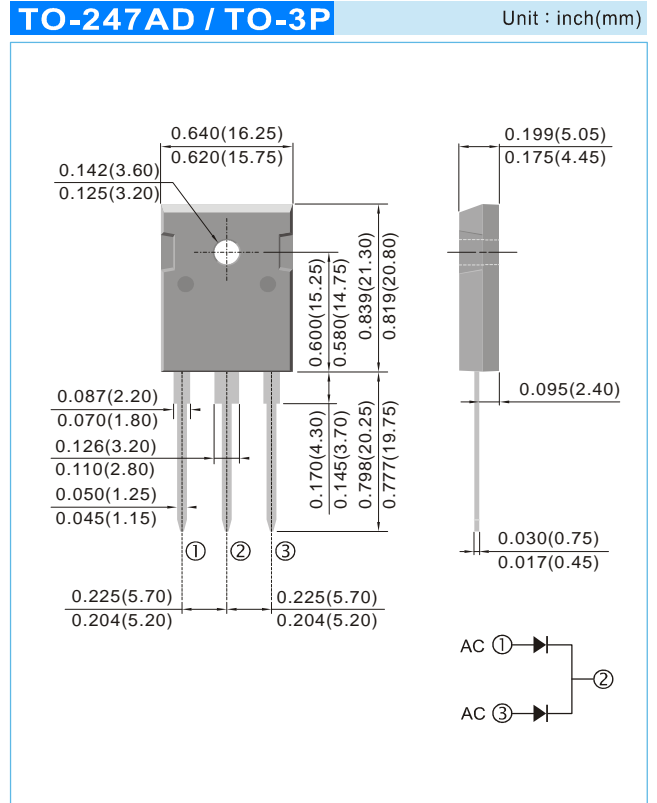
## MBR3040PT THRU MBR30200PT

### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O. Flame Retardant Epoxy Molding Compound.
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency.
- High current capability
- Guardring for overvoltage protection
- For use in low voltage, high frequency inverters free wheeling, and polarity protection applications.
- In compliance with EU RoHS 2002/95/EC directives

### MECHANICAL DATA

- Case: TO-247AD/TO-247S/TO-3P molded plastic
- Terminals: solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: As marked.
- Mounting Position: Any
- Weight: 0.2245 ounces, 6.3673 grams.



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

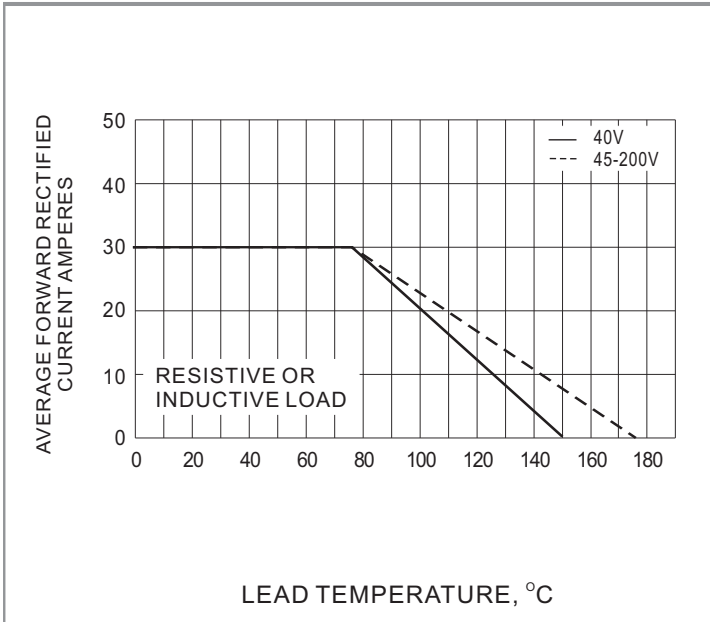
| PARAMETER  | SYMBOL          | MBR30 40PT  | MBR30 45PT | MBR30 50PT | MBR30 60PT | MBR30 80PT  | MBR30 90PT | MBR30 100PT | MBR30 150PT | MBR30 200PT | UNITS          |
|--|-----------------|-------------|------------|------------|------------|-------------|------------|-------------|-------------|-------------|----------------|
| Maximum Recurrent Peak Reverse Voltage   | $V_{RRM}$       | 40          | 45         | 50         | 60         | 80          | 90         | 100         | 150         | 200         | V              |
| Maximum RMS Voltage  | $V_{RMS}$       | 28          | 31.5       | 35         | 42         | 56          | 63         | 70          | 105         | 140         | V              |
| Maximum DC Blocking Voltage  | $V_{DC}$        | 40          | 45         | 50         | 60         | 80          | 90         | 100         | 150         | 200         | V              |
| Maximum Average Forward Current  | $I_{F(AV)}$     | 30          |            |            |            |             |            |             |             |             | A              |
| Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$       | 275         |            |            |            |             |            |             |             |             | A              |
| Maximum Forward Voltage at 15A per leg   | $V_F$           | 0.7         | 0.75       |            | 0.8        |             |            | 0.9         |             | V           |                |
| Maximum DC Reverse Current at $T_j=25^\circ C$<br>Rated DC Blocking Voltage $T_j=125^\circ C$      | $I_R$           | 0.1         |            |            |            | 0.05        |            |             | 20          |             | mA             |
| Typical Thermal Resistance   | $R_{\theta JC}$ | 1.4         |            |            |            |             |            |             |             |             | $^\circ C / W$ |
| Operating Junction and Storage Temperature Range   | $T_j, T_{STG}$  | -50 to +150 |            |            |            | -65 to +175 |            |             |             |             | $^\circ C$     |

Note :  
Both Bonding and Chip structure are available.

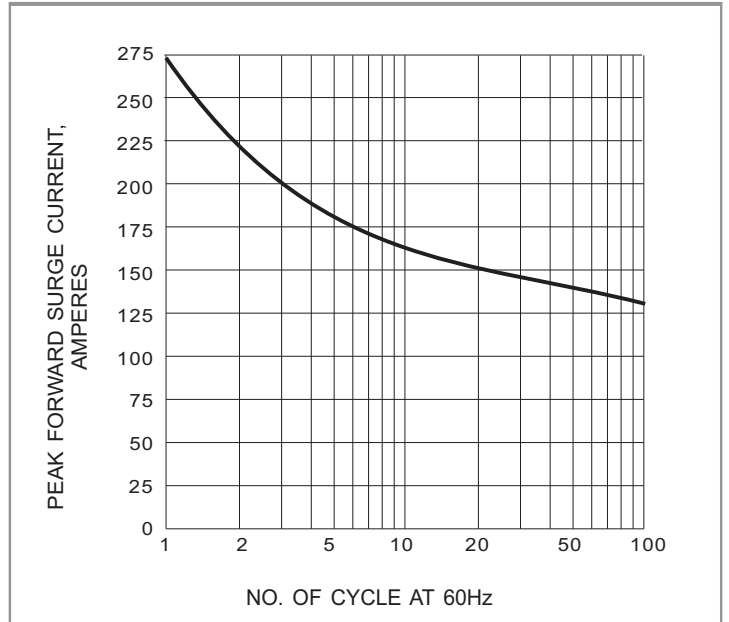
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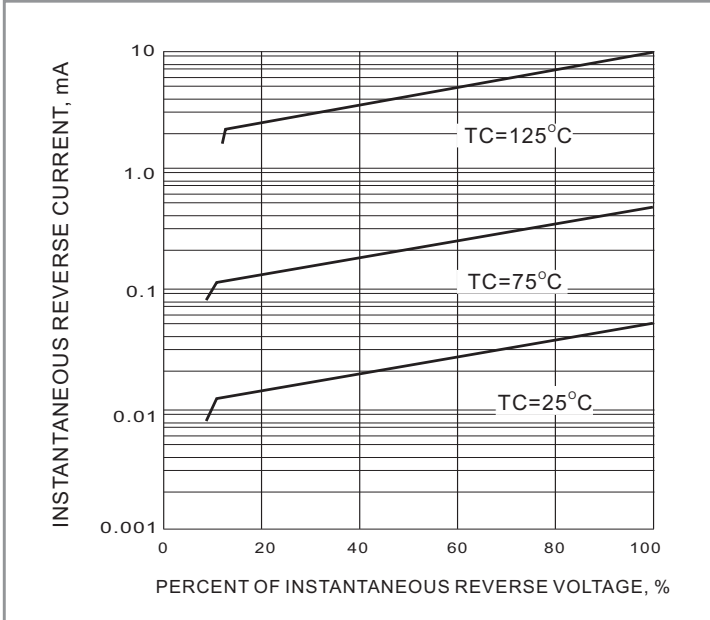
**RATING AND CHARACTERISTIC CURVES**



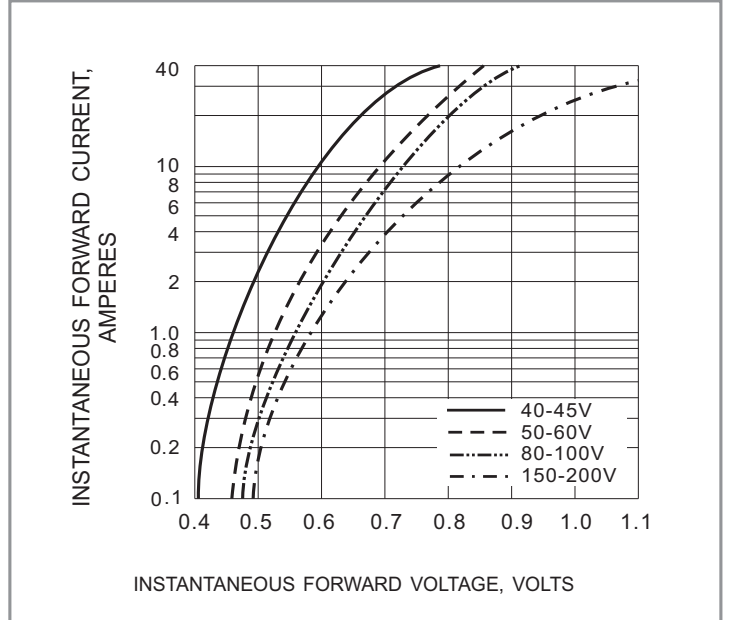
**Fig.1- FORWARD CURRENT DERATING CURVE**



**Fig.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



**Fig.3- TYPICAL REVERSE CHARACTERISTIC**

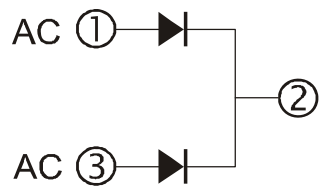
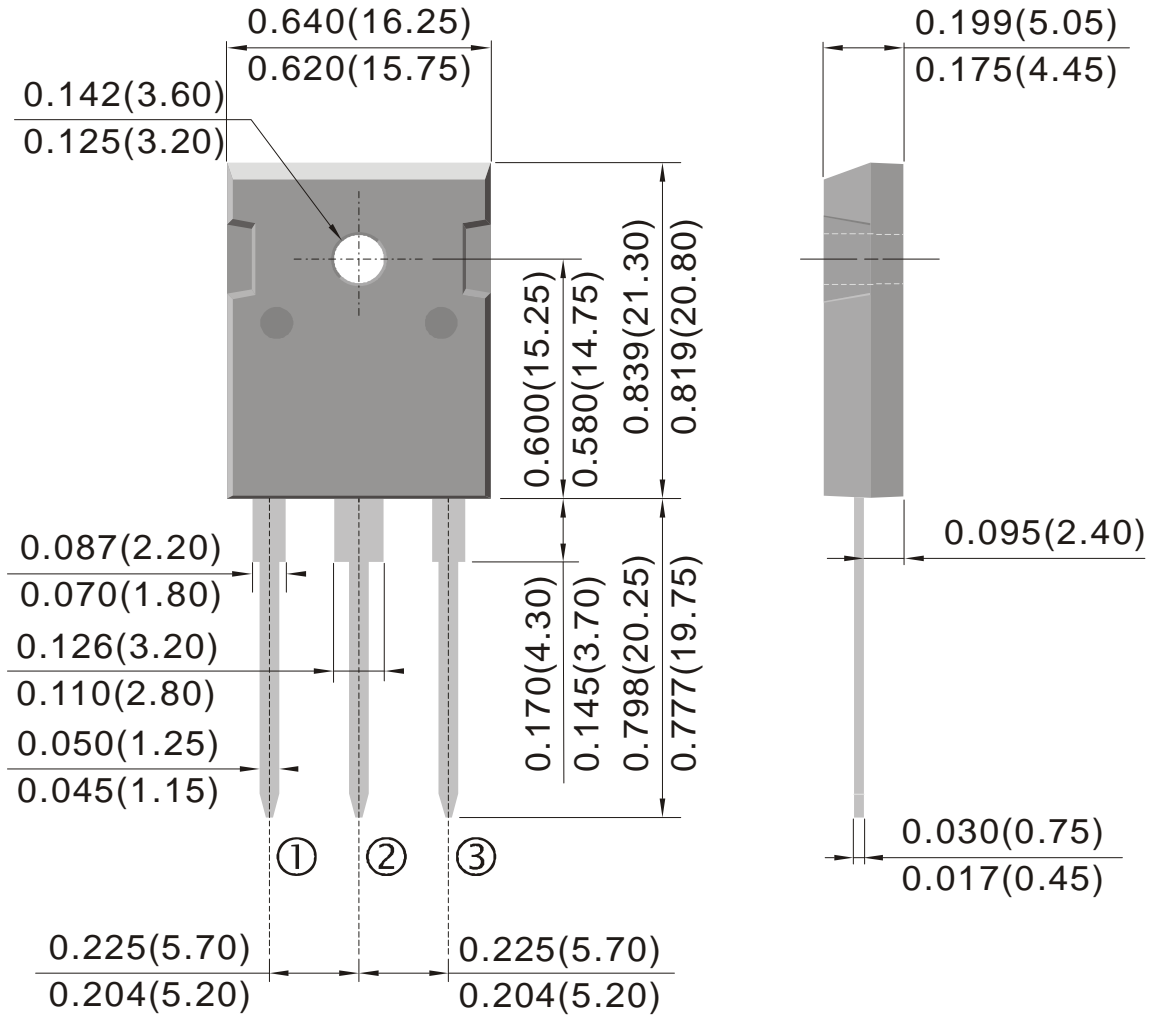


**Fig.4- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC**

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**T0-247AD**

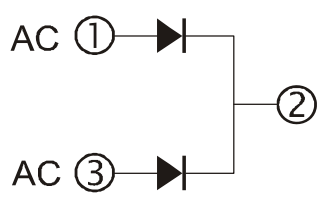


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**T0-247S**

| Ref. | Dimensions  |       |       |        |       |       |
|------|-------------|-------|-------|--------|-------|-------|
|      | Millimeters |       |       | Inches |       |       |
|      | Min.        | Typ.  | Max.  | Min.   | Typ.  | Max.  |
| A    | 4.85        |       | 5.16  | 0.191  |       | 0.203 |
| D    | 2.20        |       | 2.60  | 0.086  |       | 0.102 |
| E    | 0.40        |       | 0.80  | 0.015  |       | 0.031 |
| F    | 1.00        |       | 1.40  | 0.039  |       | 0.055 |
| F1   |             | 3.00  |       |        | 0.118 |       |
| F2   |             | 2.00  |       |        | 0.079 |       |
| F3   | 1.90        |       | 2.40  | 0.075  |       | 0.094 |
| F4   | 3.00        |       | 3.40  | 0.118  |       | 0.134 |
| G    |             | 10.90 |       |        | 0.429 |       |
| H    | 15.45       |       | 16.03 | 0.608  |       | 0.631 |
| L    | 19.85       |       | 21.09 | 0.781  |       | 0.830 |
| L1   | 3.70        |       | 4.30  | 0.146  |       | 0.169 |
| L2   | 18.30       |       | 19.13 | 0.720  |       | 0.753 |
| L3   | 14.20       |       | 20.30 | 0.559  |       | 0.799 |
| L4   | 34.05       |       | 41.38 | 1.341  |       | 1.629 |
| L5   | 5.35        |       | 6.30  | 0.211  |       | 0.248 |
| M    | 2.00        |       | 3.00  | 0.079  |       | 0.118 |
| V    |             | 5°    |       |        | 5°    |       |
| V2   |             | 60°   |       |        | 60°   |       |
| Dia. | 3.55        |       | 3.65  | 0.140  |       | 0.144 |



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**TO-3P**

