
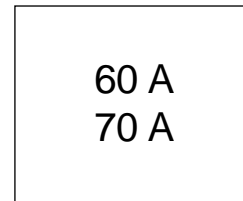


THREE PHASE BRIDGE

Power Modules

Features

- Package fully compatible with the industry standard INT-A-pak power modules series
- High thermal conductivity package, electrically insulated case
- Outstanding number of power encapsulated components
- Excellent power volume ratio, outline for easy connections to power transistor and IGBT modules
- 4000 V_{RMS} isolating voltage
- UL E78996 approved 



Description

A range of extremely compact, encapsulated three phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and heavy duty applications.

Major Ratings and Characteristics

| Parameters | 60MT.KB | 70MT.KB | Units |
|-----------------|-------------|---------|-------------------|
| I_O | 60 (75) | 70 (90) | A |
| @ T_C | 85 (61) | 85 (57) | °C |
| I_{FSM} | 420 | 480 | A |
| @ 50Hz | 440 | 500 | A |
| @ 60Hz | 870 | 1150 | A ² s |
| i^2t | 790 | 1050 | A ² s |
| @ 50Hz | 8700 | 11500 | A ² √s |
| @ 60Hz | | | |
| $i^2\sqrt{t}$ | | | |
| V_{RRM} range | 800 to 1600 | | V |
| T_{STG} range | -40 to 150 | | °C |
| T_J range | -40 to 150 | | °C |

60-70MT..KB Series

Bulletin I27500 08/97

International
 Rectifier

ELECTRICAL SPECIFICATIONS

Voltage Ratings

| Type number | Voltage Code | V_{RRM} , maximum repetitive peak reverse voltage V | V_{RSM} , maximum non-repetitive peak rev. voltage V | I_{RRM} max. @ T_J max. mA |
|-------------|--------------|--|---|--------------------------------------|
| 60-70MT..KB | 80 | 800 | 900 | 10 |
| | 100 | 1000 | 1100 | |
| | 120 | 1200 | 1300 | |
| | 140 | 1400 | 1500 | |
| | 160 | 1600 | 1700 | |

Forward Conduction

| Parameter | 60MT.KB | 70MT.KB | Units | Conditions |
|--|---------|---------|-------------------|--|
| I_O Maximum DC output current @ Case temperature | 60 (75) | 70 (90) | A | 120° Rect conduction angle |
| | 85 (61) | 85 (57) | °C | |
| I_{FSM} Maximum peak, one-cycle forward, non-repetitive surge current | 420 | 480 | A | t = 10ms No voltage |
| | 440 | 500 | | t = 8.3ms reapplied |
| | 350 | 400 | | t = 10ms 100% V_{RRM} |
| | 370 | 420 | | t = 8.3ms reapplied |
| I^2t Maximum I^2t for fusing | 870 | 1150 | A ² s | t = 10ms No voltage |
| | 790 | 1050 | | t = 8.3ms reapplied |
| | 610 | 800 | | t = 10ms 100% V_{RRM} |
| | 560 | 730 | | t = 8.3ms reapplied |
| $I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing | 8700 | 11300 | A ² √s | t = 0.1 to 10ms, no voltage reapplied |
| $V_{F(TO)1}$ Low level value of threshold voltage | 0.85 | 0.86 | V | $(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, @ T_J max. |
| $V_{F(TO)2}$ High level value of threshold voltage | 1.07 | 1.08 | V | $(I > \pi \times I_{F(AV)})$, @ T_J max. |
| r_{f1} Low level value of forward slope resistance | 8.04 | 7.35 | mΩ | $(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, @ T_J max. |
| r_{f2} High level value of forward slope resistance | 7.08 | 6.53 | mΩ | $(I > \pi \times I_{F(AV)})$, @ T_J max. |
| V_{FM} Maximum forward voltage drop | 1.75 | 1.55 | V | $I_{pk} = 100A$, $T_J = 25^\circ C$, $t_p = 400\mu s$ single junction |
| V_{INS} RMS isolation voltage | 4000 | 4000 | V | $T_J = 25^\circ C$, all terminal shorted f = 50Hz, t = 1s |

Thermal and Mechanical Specifications

| Parameter | 60MT.KB | 70MT.KB | Units | Conditions |
|---|------------|---------|-------|--|
| T_J Max. junction operating temperature range | -40 to 150 | | °C | |
| T_{stg} Max. storage temperature range | -40 to 150 | | °C | |
| R_{thJC} Max. thermal resistance, junction to case | 0.37 | 0.29 | K/W | DC operation per module |
| | 2.22 | 1.75 | | DC operation per junction |
| | 0.40 | 0.34 | | 120° Rect conduction angle per module |
| | 2.42 | 2.01 | | 120° Rect conduction angle per junction |
| R_{thCS} Max. thermal resistance, case to heatsink | 0.03 | | K/W | Per module Mounting surface smooth, flat and greased |
| T Mounting torque ± 10% to heatsink to terminal | 4 to 6 | | Nm | A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow for the spread of the compound. Lubricated threads. |
| | 3 to 4 | | | |
| wt Approximate weight | 225 | | g | |

60-70MT..KB Series

Bulletin I27500 08/97

Outline Table (with optional barriers)

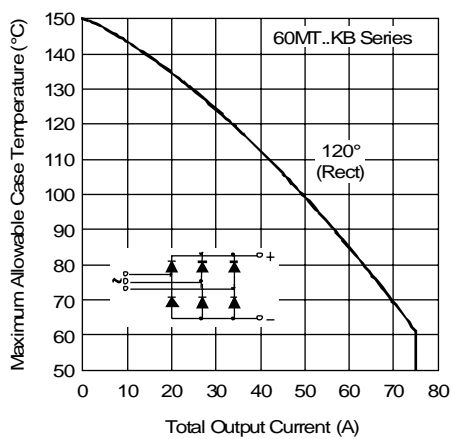
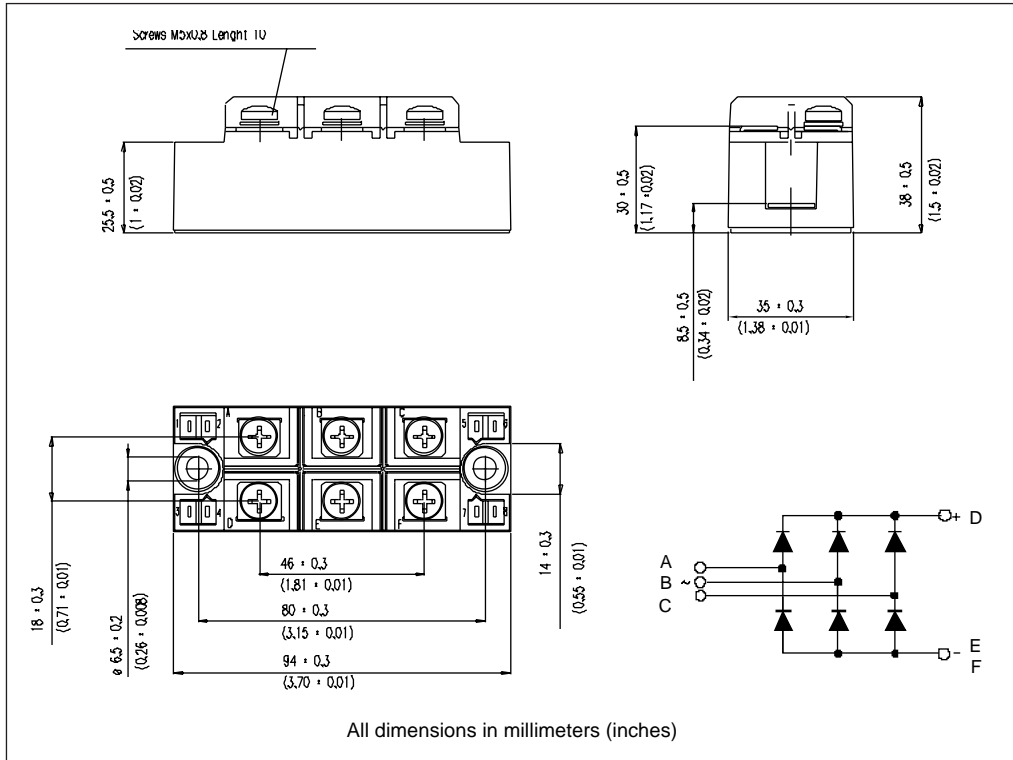


Fig. 1 - Current Ratings Characteristics

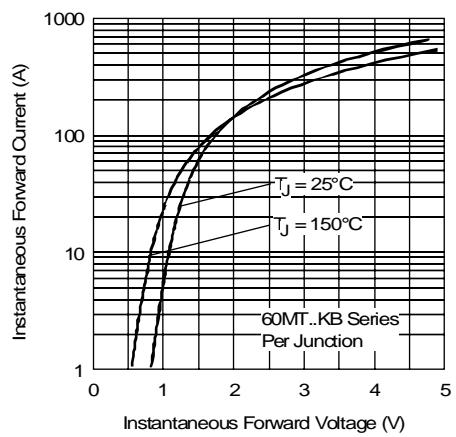


Fig. 2 - Forward Voltage Drop Characteristics

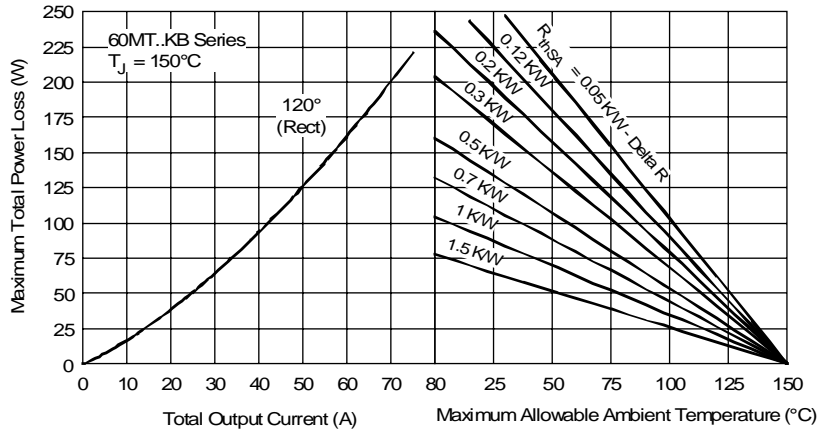


Fig. 3 - Total Power Loss Characteristics

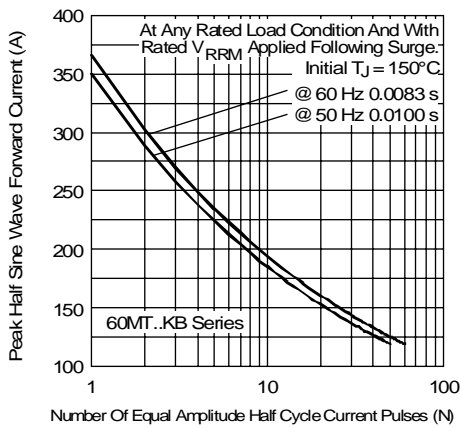


Fig. 4 - Maximum Non-Repetitive Surge Current

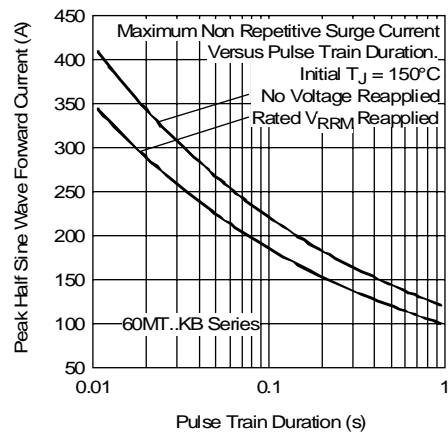


Fig. 5 - Maximum Non-Repetitive Surge Current

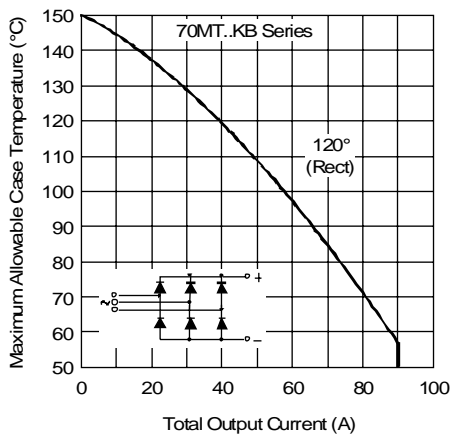


Fig. 6 - Current Ratings Characteristics

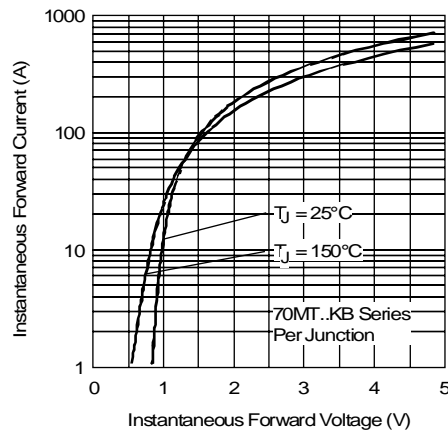


Fig. 7 - Forward Voltage Drop Characteristics

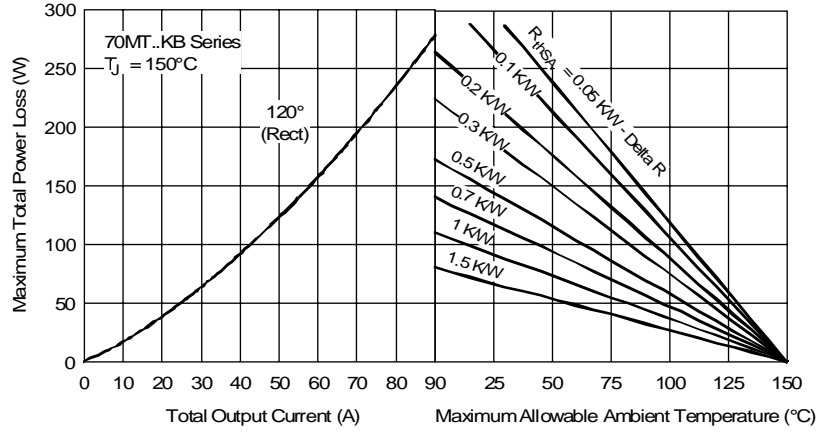


Fig. 8 - Total Power Loss Characteristics

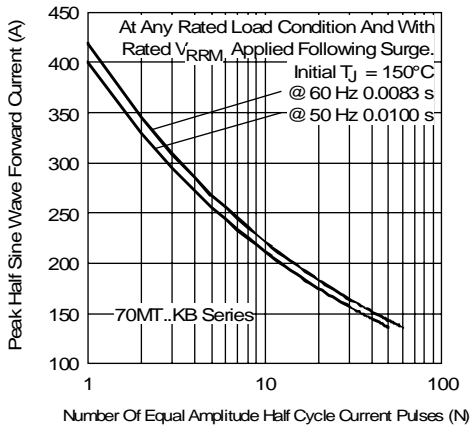


Fig. 9 - Maximum Non-Repetitive Surge Current

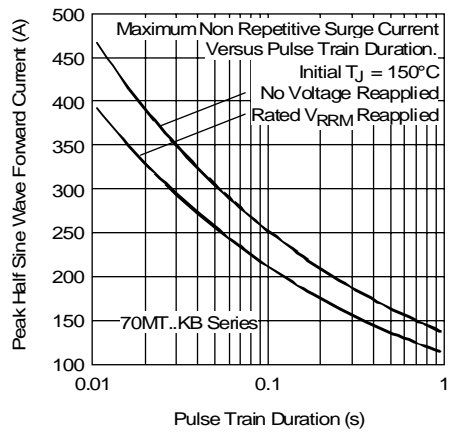


Fig. 10 - Maximum Non-Repetitive Surge Current

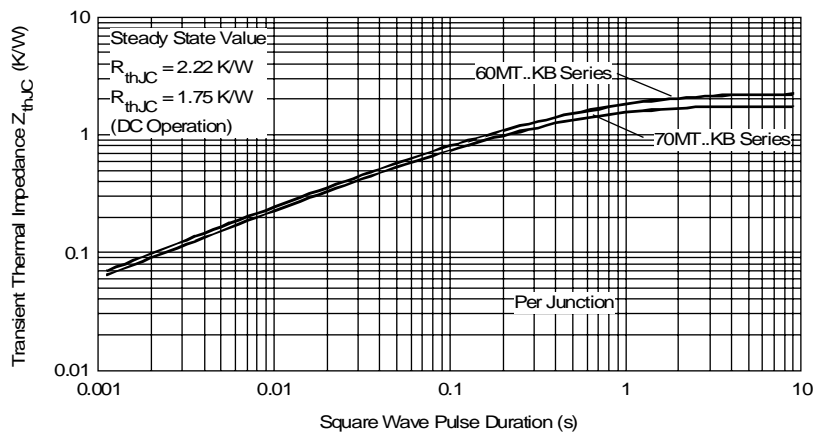


Fig. 11 - Thermal Impedance Z_{thJC} Characteristic