

December 22, 1997

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### HIGH CURRENT, HIGH DENSITY, ISOLATED, SILICON POWER RECTIFIERS

### QUICK REFERENCE DATA

- Low thermal impedance
- Small size and low weight
- High current applications
- Isolated for direct heatsink mounting
- High surge ratings

- $V_R = 150V - 1000V$
- $I_F = 15A$
- $t_{rr} = 10nS - 2\mu S$
- $I_{FSM} \geq 150A$

### ABSOLUTE MAXIMUM RATINGS

| Device Type | Working Reverse Voltage<br>( $V_{RRM}$ ) | Average Rectified Current<br>( $I_{F(AV)}$ ) @ $T_{mb}$ |       |       | 1 Cycle Surge<br>$I_{FSM}$ $t_P = 8.3mS$ |         | Repetitive Surge<br>( $I_{FRM}$ ) | Operating & Storage Temperature Range |               |
|-------------|------------------------------------------|---------------------------------------------------------|-------|-------|------------------------------------------|---------|-----------------------------------|---------------------------------------|---------------|
|             |                                          | @ 55°C                                                  | 100°C | 125°C | @ 25 °C                                  | @ 100°C | @ 25 °C                           | ( $T_{OP}$ )                          | ( $T_{STG}$ ) |
|             | Volts                                    | Amps                                                    | Amps  | Amps  | Amps                                     | Amps    | Amps                              | °C                                    |               |
| ISOPAC0103  | 1000                                     | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0119  | 1000                                     | 10                                                      | 8     | 6     | 150                                      | 80      | 15                                | -55 to +175                           |               |
| ISOPAC0112  | 600                                      | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0104  | 400                                      | 15                                                      | 11    | 8     | 150                                      | 80      | 25                                | -55 to +175                           |               |
| ISOPAC0111  | 150                                      | 15                                                      | 10    | 7     | 175                                      | 175     | 24                                | -55 to +150                           |               |
| ISOPAC0203  | 1000                                     | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0219  | 1000                                     | 10                                                      | 8     | 6     | 150                                      | 80      | 15                                | -55 to +175                           |               |
| ISOPAC0212  | 600                                      | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0204  | 400                                      | 15                                                      | 11    | 8     | 150                                      | 80      | 25                                | -55 to +175                           |               |
| ISOPAC0211  | 150                                      | 15                                                      | 10    | 7     | 175                                      | 175     | 24                                | -55 to +150                           |               |
| ISOPAC0403  | 1000                                     | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0419  | 1000                                     | 10                                                      | 8     | 6     | 150                                      | 80      | 15                                | -55 to +175                           |               |
| ISOPAC0412  | 600                                      | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0404  | 400                                      | 15                                                      | 11    | 8     | 150                                      | 80      | 25                                | -55 to +175                           |               |
| ISOPAC0411  | 150                                      | 15                                                      | 10    | 7     | 175                                      | 175     | 24                                | -55 to +150                           |               |
| ISOPAC0603  | 1000                                     | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0619  | 1000                                     | 10                                                      | 8     | 6     | 150                                      | 80      | 15                                | -55 to +175                           |               |
| ISOPAC0612  | 600                                      | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC0604  | 400                                      | 15                                                      | 11    | 8     | 150                                      | 80      | 25                                | -55 to +175                           |               |
| ISOPAC0611  | 150                                      | 15                                                      | 10    | 7     | 175                                      | 175     | 24                                | -55 to +150                           |               |
| ISOPAC1203  | 1000                                     | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC1219  | 1000                                     | 10                                                      | 8     | 6     | 150                                      | 80      | 15                                | -55 to +175                           |               |
| ISOPAC1212  | 600                                      | 15                                                      | 11    | 8     | 150                                      | 100     | 25                                | -55 to +175                           |               |
| ISOPAC1204  | 400                                      | 15                                                      | 11    | 8     | 150                                      | 80      | 25                                | -55 to +175                           |               |
| ISOPAC1211  | 150                                      | 15                                                      | 10    | 7     | 175                                      | 175     | 24                                | -55 to +150                           |               |

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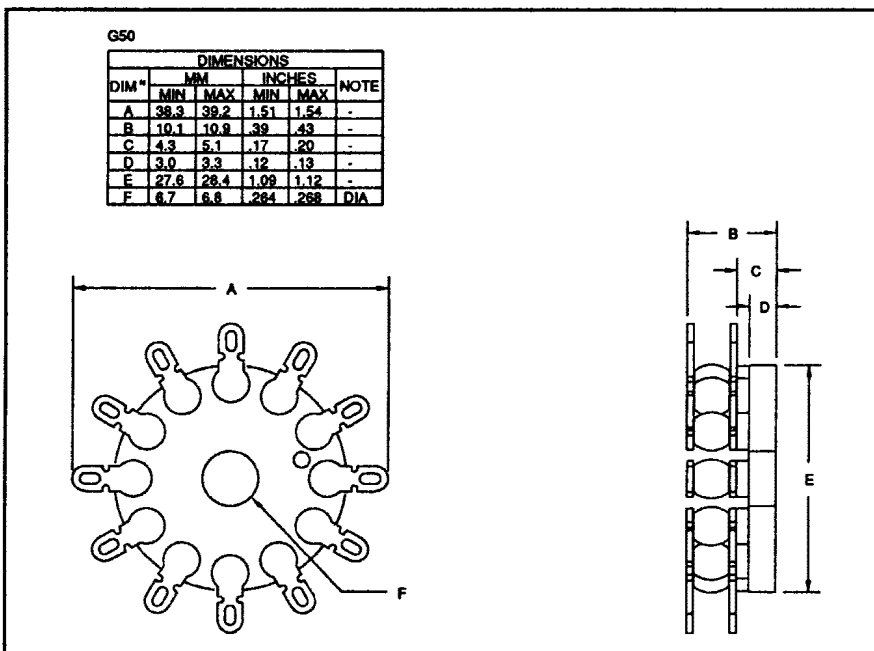
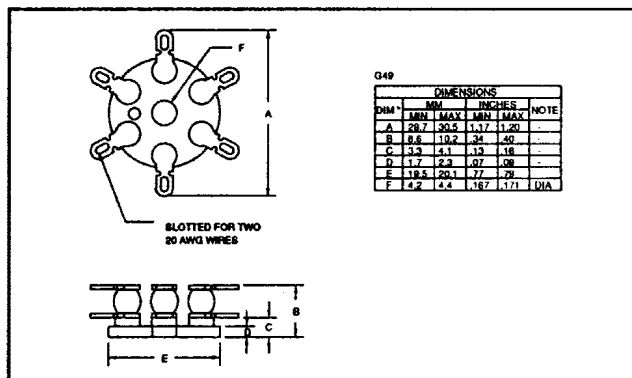
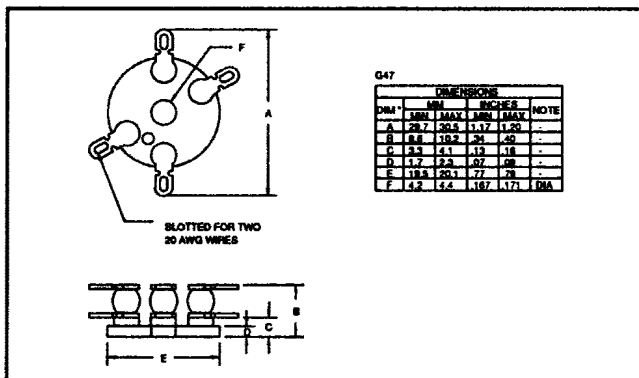
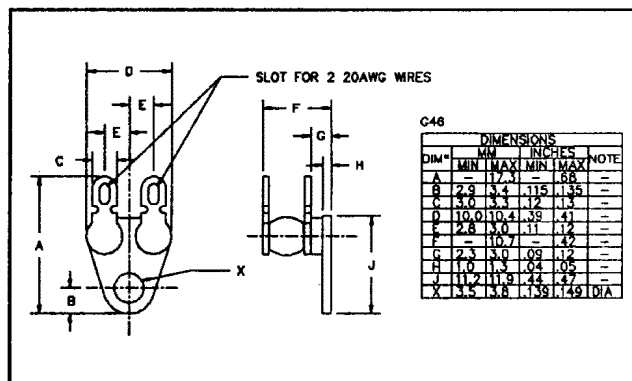
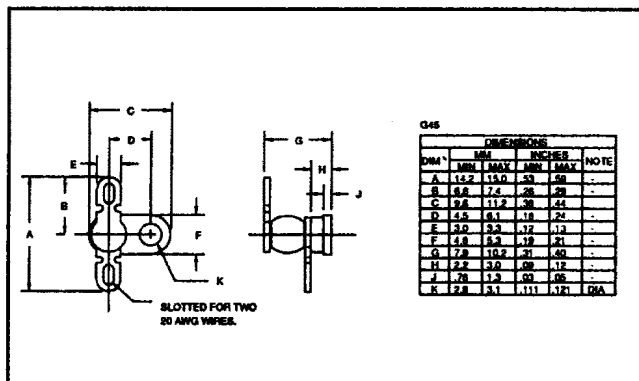
**ELECTRICAL CHARACTERISTICS** (apply per junction)

| Device Type | Maximum Leakage Current @ $V_{RWM}$ |                           | Maximum Forward Voltage @ 9.0 A | Maximum Reverse Recovery Time |
|-------------|-------------------------------------|---------------------------|---------------------------------|-------------------------------|
|             | $T_j = 25^\circ\text{C}$            | $T_j = 100^\circ\text{C}$ |                                 |                               |
|             | $\mu\text{A}$                       | $\mu\text{A}$             | Volts                           | nS                            |
| ISOPAC0103  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0119  | 1.0                                 | 25                        | 2.2                             | 150                           |
| ISOPAC0112  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0104  | 1.0                                 | 20                        | 1.5                             | 150                           |
| ISOPAC0111  | 10.0                                | 500                       | 1.1                             | 30                            |
| ISOPAC0203  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0219  | 1.0                                 | 25                        | 2.2                             | 150                           |
| ISOPAC0212  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0204  | 1.0                                 | 20                        | 1.5                             | 150                           |
| ISOPAC0211  | 10.0                                | 500                       | 1.1                             | 30                            |
| ISOPAC0403  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0419  | 1.0                                 | 25                        | 2.2                             | 150                           |
| ISOPAC0412  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0404  | 1.0                                 | 20                        | 1.5                             | 150                           |
| ISOPAC0411  | 10.0                                | 500                       | 1.1                             | 30                            |
| ISOPAC0603  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0619  | 1.0                                 | 25                        | 2.2                             | 150                           |
| ISOPAC0612  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC0604  | 1.0                                 | 20                        | 1.5                             | 150                           |
| ISOPAC0611  | 10.0                                | 500                       | 1.1                             | 30                            |
| ISOPAC1203  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC1219  | 1.0                                 | 25                        | 2.2                             | 150                           |
| ISOPAC1212  | 1.0                                 | 20                        | 1.2                             | 2000                          |
| ISOPAC1204  | 1.0                                 | 20                        | 1.5                             | 150                           |
| ISOPAC1211  | 10.0                                | 500                       | 1.1                             | 30                            |

 $R_{\theta JMB} = 3^\circ\text{C/W}$  per junction.

Non-isolated forms are available, consult factory for details.

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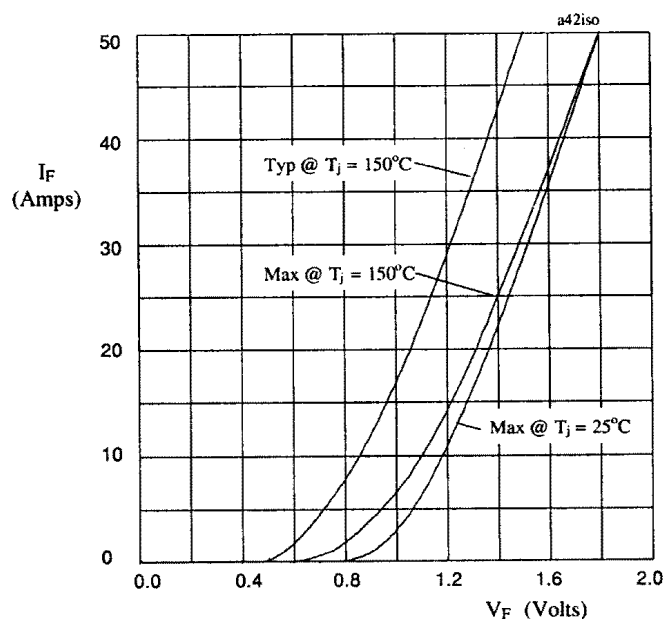


Figure 1. Forward voltage drop as a function of forward current for ISOPAC\*\*03 & ISOPAC\*\*12.

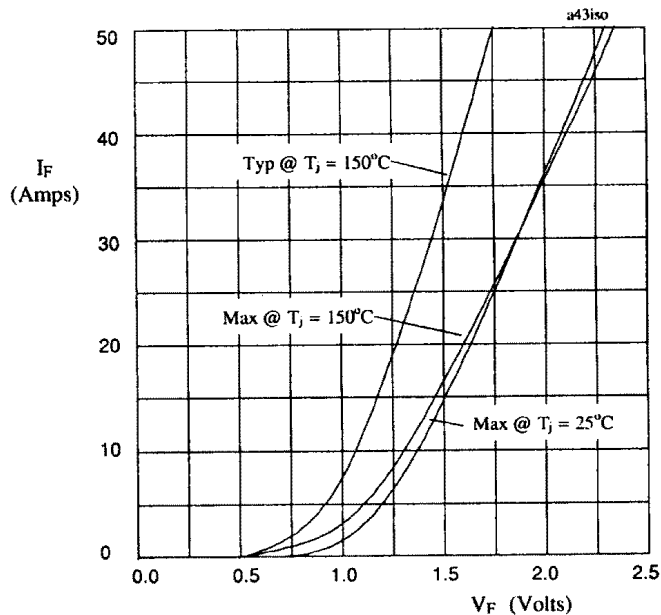


Figure 2. Forward voltage drop as a function of forward current for ISOPAC\*\*04.

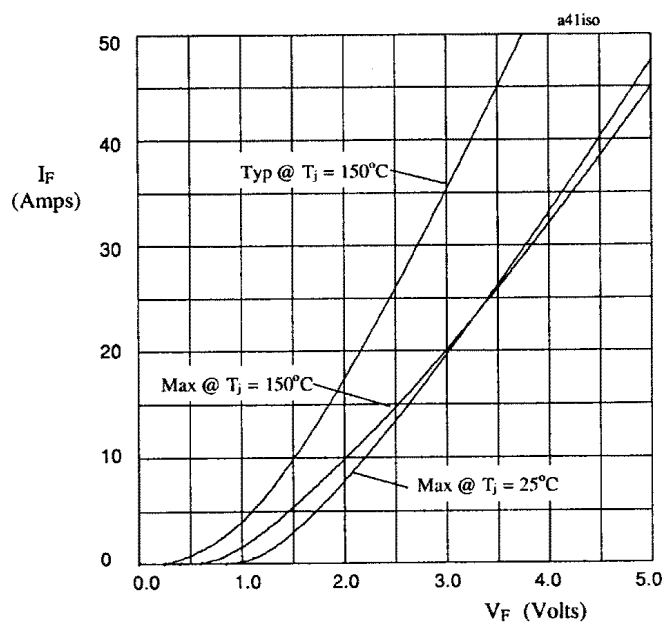


Figure 3. Forward voltage drop as a function of forward current for ISOPAC\*\*19.

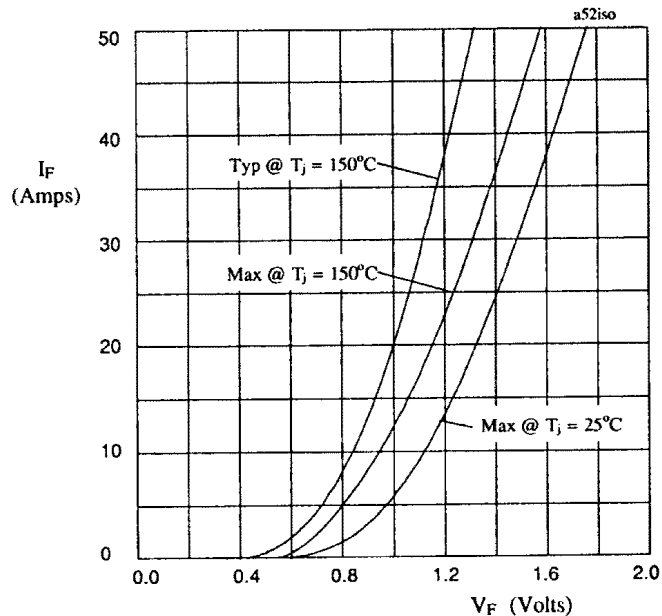


Figure 4. Forward voltage drop as a function of forward current for ISOPAC\*\*11.

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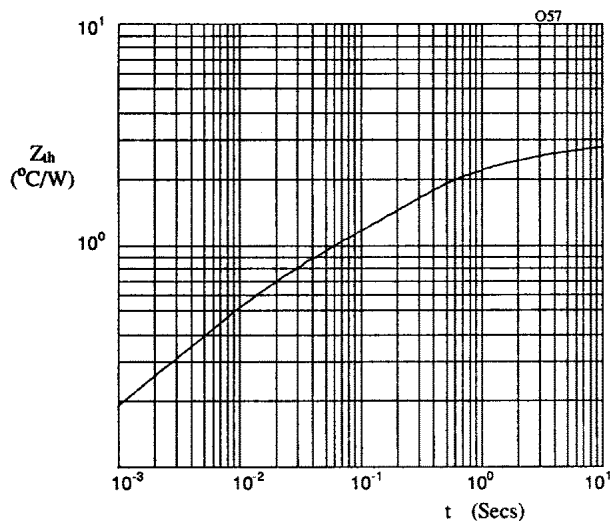


Figure 5. Typical transient thermal impedance characteristic.

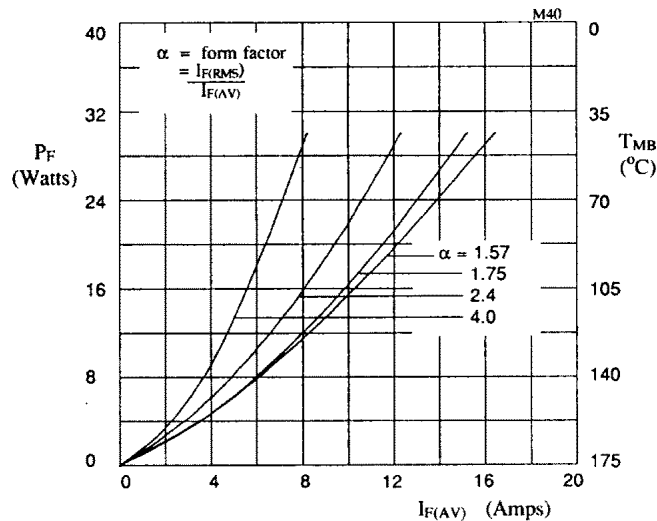


Figure 6. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for ISOPAC\*\*03 and ISOPAC\*\*12.

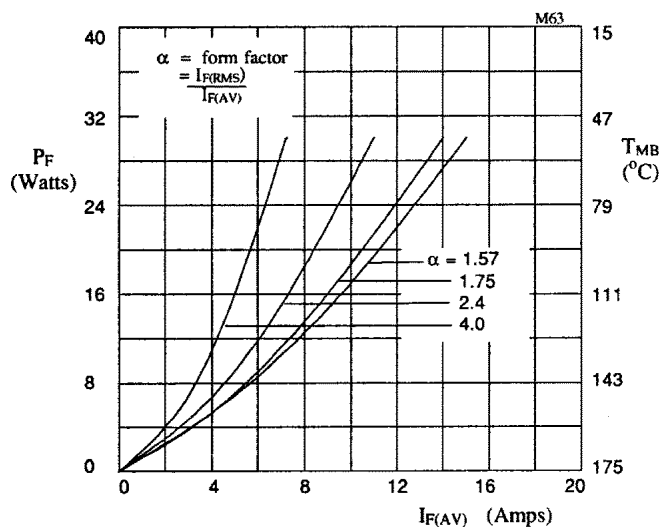


Figure 7. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for ISOPAC\*\*04.

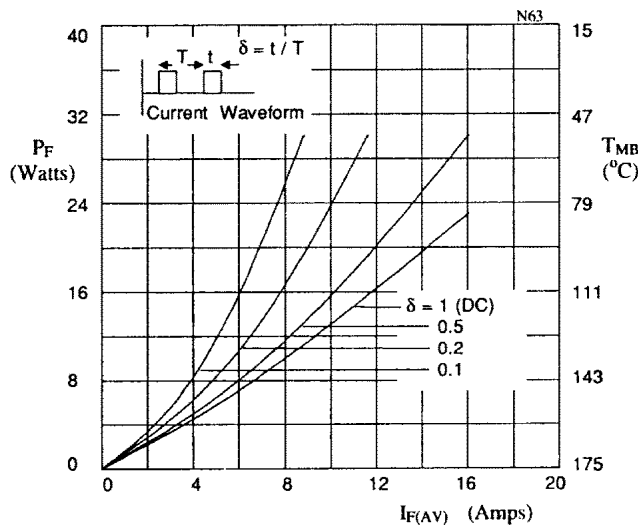


Figure 8. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for square wave operation, for ISOPAC\*\*04.

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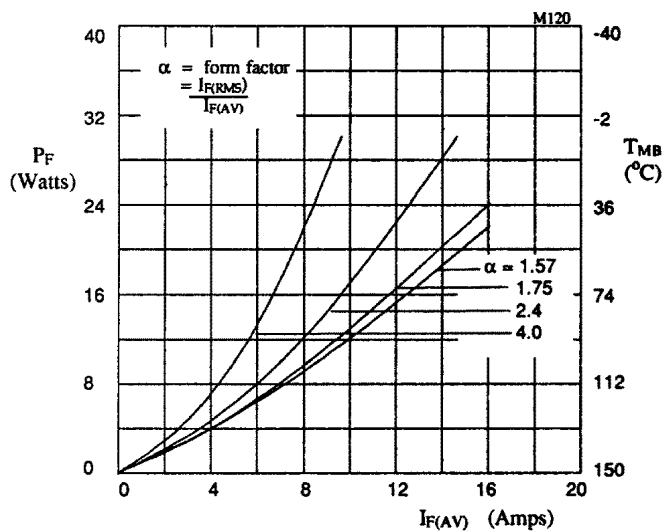


Figure 9. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for ISOPAC\*\*11.

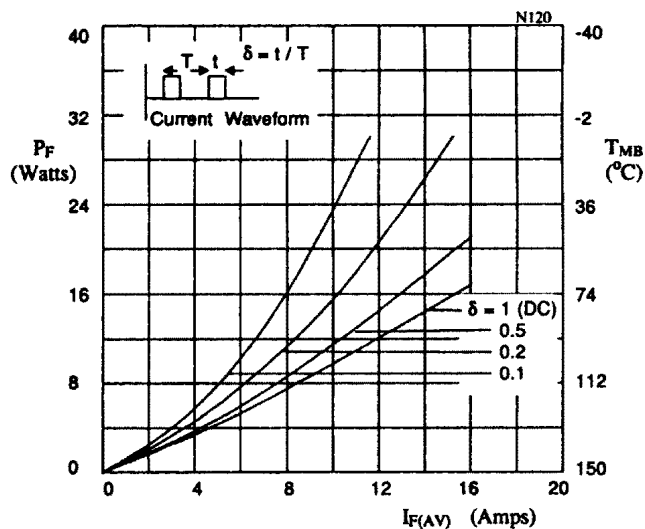


Figure 10. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for square wave operation, for ISOPAC\*\*11.