# Moulded Module Assembly

# PBT 91 / PBH 91

(Thyristor - Thyristor Module /
Thyristor - Diode Module)





## Technical Data

Typical applications : DC Motor control, Temperature control, Professional light dimming.

| Type No. | | $V_{RRM}$ (Volts) | $V_{RSM}$ (Volts) |
|---|---|---|---|
| PBT 91/04 | PBH 91/04 | 400 | 500 |
| PBT 91/06 | PBH 91/06 | 600 | 700 |
| PBT 91/08 | PBH 91/08 | 800 | 900 |
| PBT 91/10 | PBH 91/10 | 1000 | 1100 |
| PBT 91/12 | PBH 91/12 | 1200 | 1300 |
| PBT 91/14 | PBH 91/14 | 1400 | 1500 |
| PBT 91/16 | PBH 91/16 | 1600 | 1700 |

## Features

- Heat transfer through ceramic isolated Cu base
- Isolation between contacts & mounting base is 2.5KV(rms)
- Weight 120 gm (Approx)

dv/dt ≥ 200 V/µs typ. (Higher upto 1000 V/µs available on request)

| Symbol | Conditions | Values |
|---|---|---|
| $I_{F(AV)}$ | Sin 180 ; Tcase = 90 °C | 90 A |
| $I_{(RMS)}$ | Absolute maximum | 180 A |
| $I_{TSM}$ | Tvj = 25 °C; Half Sine; 10 ms; 0 $V_{RRM}$ | 2000 A |
| | Tvj = 125 °C; Half Sine; 10 ms; 0 $V_{RRM}$ | 1750 A |
| $I^2t$ | Tvj = 25 °C; Half Sine; 10 ms | 20000 $A^2s$ |
| | Tvj = 125 °C; Half Sine; 10 ms | 15000 $A^2s$ |
| di/dt | Tvj = 125 °C | 100 A/µs |
| tq | Tvj = 125 °C; di/dt=10A/µs; dv/dt=50V/µs reapplied | typ. 100µs |
| $I_H$ | Tvj = 25 °C | (typ. 150/Max.250)mA |
| $I_L$ | Tvj = 25 °C; $R_G$ = 33Ω | (typ. 300/Max.600)mA |
| $V_T$ | Tvj = 25 °C ; $I_T$ = 300 A | 1.65V max |
| $V_O$ | Tvj = 125 °C | 0.9V |
| $R_0$ | Tvj = 125 °C | 2.0 mΩ |
| $I_{DRM}/I_{RRM}$ | Tvj = 125 °C | 20 mA max |
| $V_{GT}$ | Tvj = 25 °C ; D.C. value | 3 V |
| $I_{GT}$ | Tvj = 25 °C ; D.C. value | 150 mA |
| $R_{th(j-c)}$ | cont. ; per thyristor/ per module | 0.28/0.14 °C/W |
| | Sin. 180 ; per thyristor/ per module | 0.30/0.15 °C/W |
| | rec. 120 ; per thyristor/ per module | 0.32/0.16 °C/W |
| $R_{th(c-h)}$ | | 0.20/0.10 °C/W |
| $T_{vj}$ | | + 125 °C |
| $T_{stg}$ | | -40.....+ 125 °C |
| $V_{ISOL}$ | A.C. 50 Hz: r.m.s.; 1sec | 3.0 KV |
| | A.C. 50 Hz: r.m.s.; 1min | 2.5 KV |

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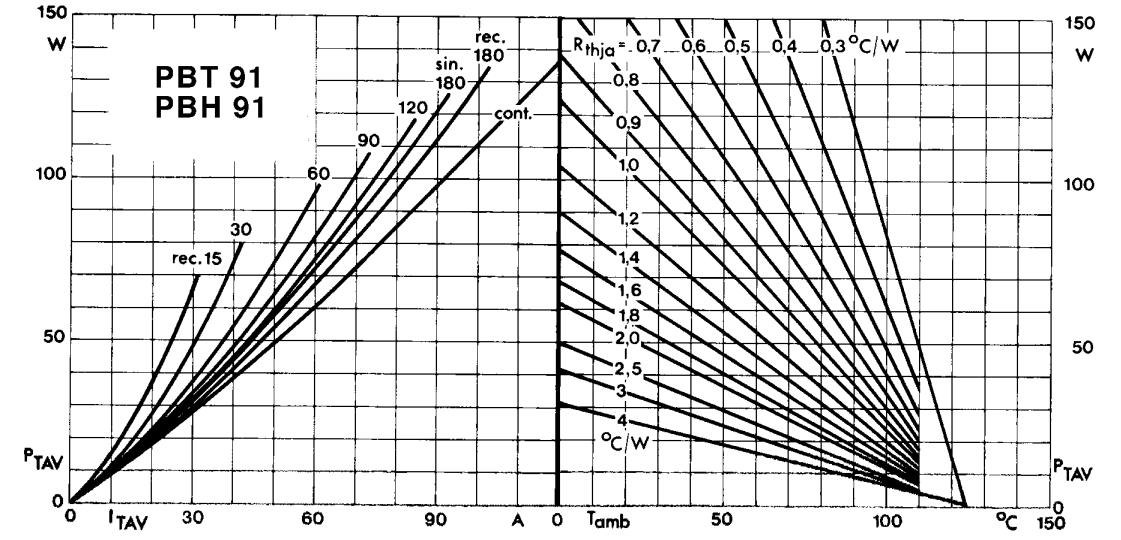
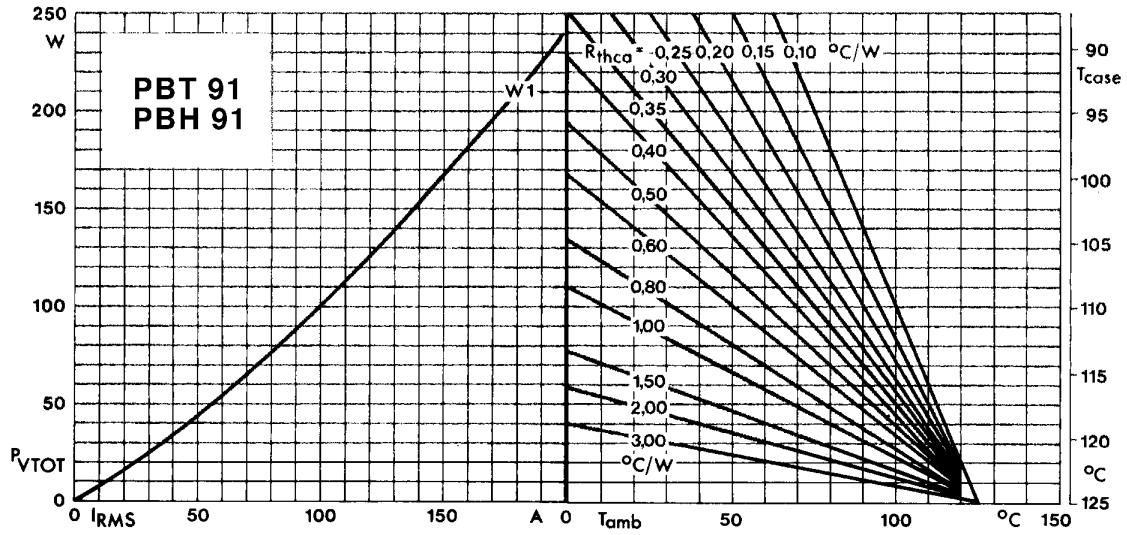
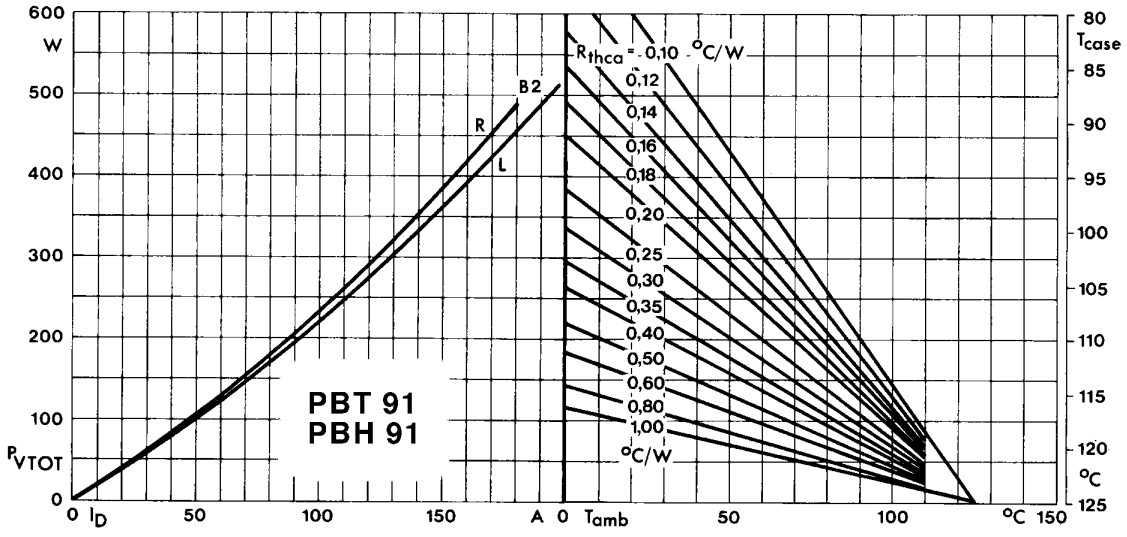
AN ISO 9002 COMPANY



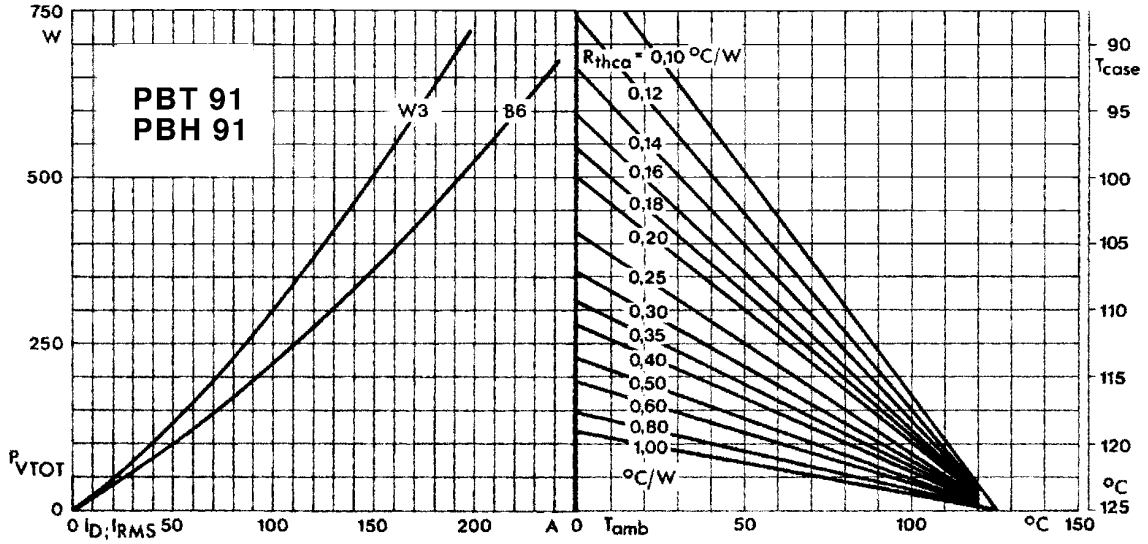

Power dissipation per thyristor vs. on-state current and ambient temperature



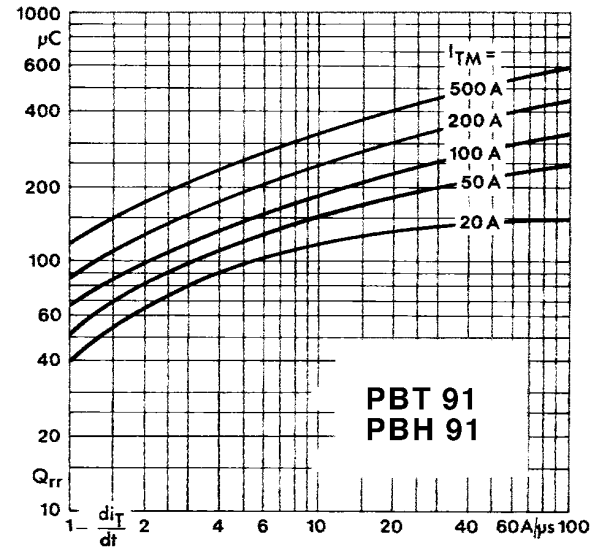

Power dissipation per module vs. rms current and case temperature



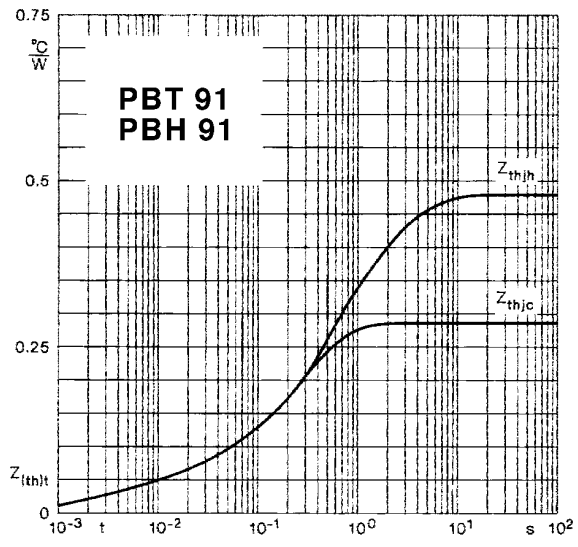

Power dissipation of two modules vs. direct current and case temperature



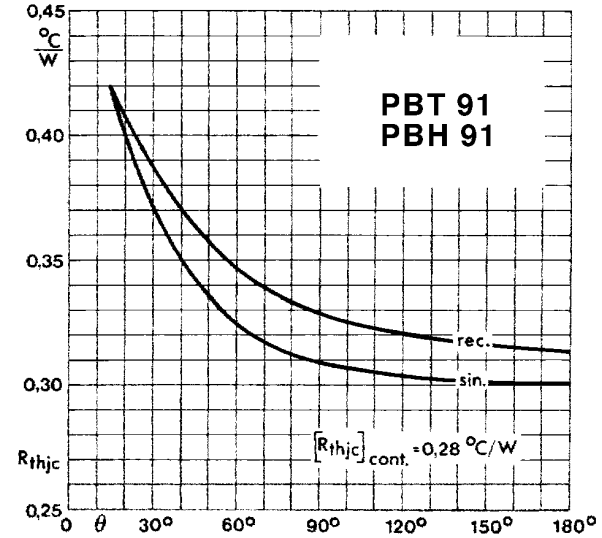

Power dissipation of three modules vs. direct and rms current and case temperature



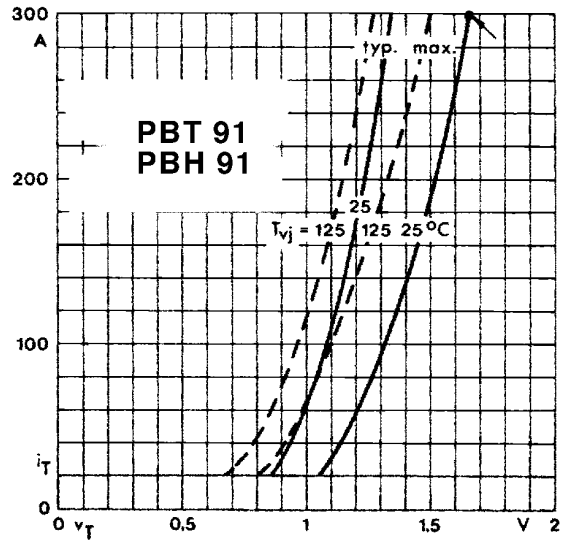

Recovered charge vs. current decrease



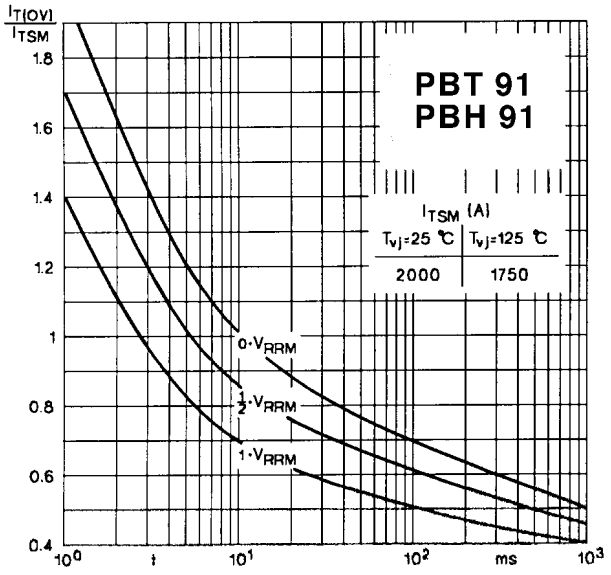

Transient thermal impedance vs. time




Thermal resistance vs. conduction angle

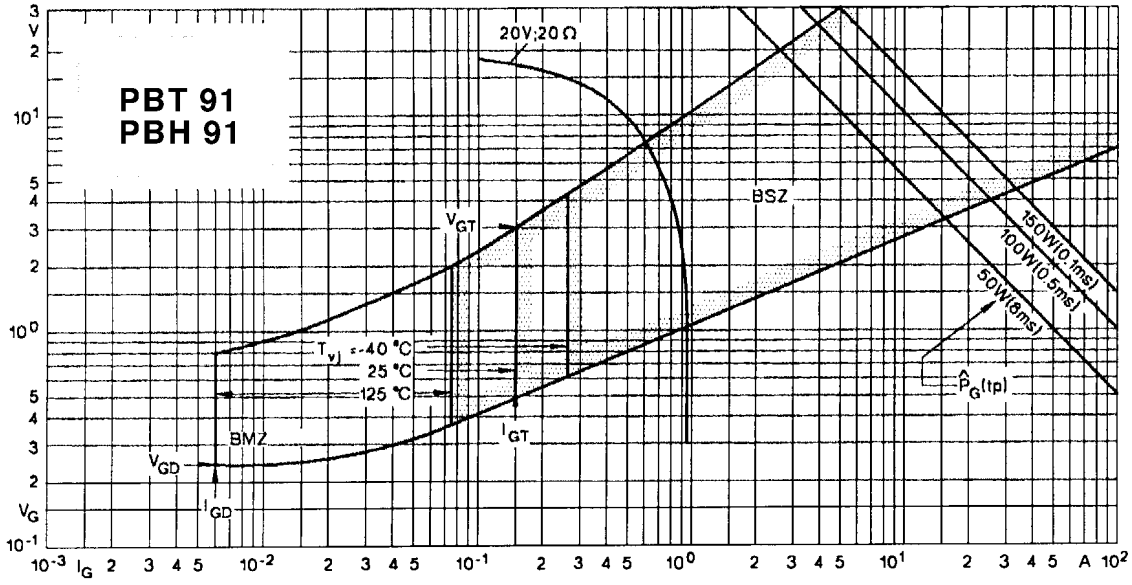



On-state characteristics



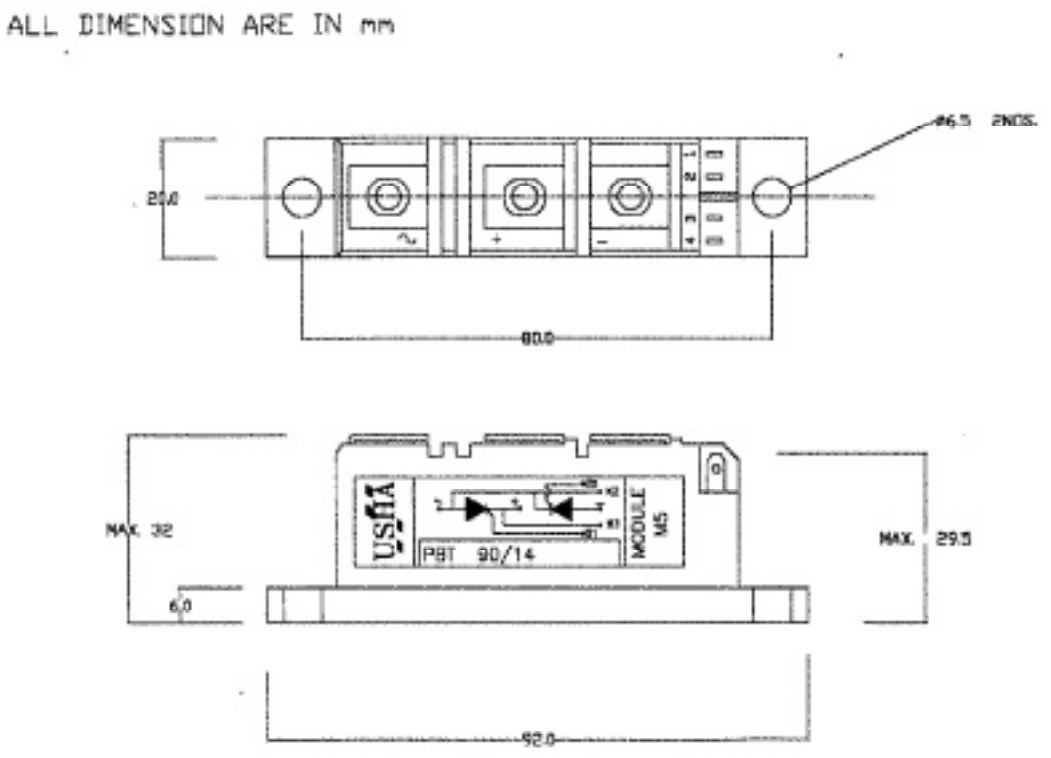

Surge overload current vs. time

$$ NOTE : If this test is repeated by the user either as a goods inwards check or as a test of the final equipment, in accordance with IEC Publication 146 (1973),clause 492.1, only a voltage slowly increasing up to 3000V a.c. should be used.




Gate trigger characteristics

## *MECHANICAL DETAILS*




ALL DIMENSIONS IN MM
MOUNTING TORQUE CASE TO HEAT SINK = 5 N.M.
MOUNTING TORQUE BUSBARS TO TERMINALS = 3N.M.

## *MOUNTING INSTRUCTIONS*

- GREASE THE BASE PLATE WITH HEAT SINK COMPOUND BEFORE USE.
- MOUNTING TORQUE NOT TO EXCEED 4Nm FOR BOTH THE BOLTS.
- USE ONLY M5 SCREWS.