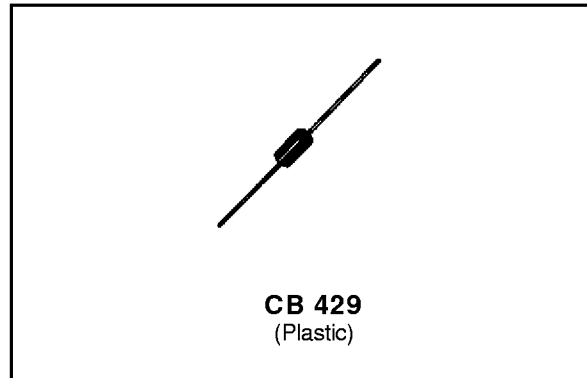


FEATURES

- BIDIRECTIONAL CROWBAR PROTECTION.
- BREAKDOWN VOLTAGE RANGE:
From 62 V To 270 V.
- HOLDING CURRENT = I_H
Suffix 12 = 120mA min.
Suffix 18 = 180mA min.
- PEAK PULSE CURRENT :
 $I_{PP} = 90 \text{ A}, 10/1000 \mu\text{s}.$

DESCRIPTION

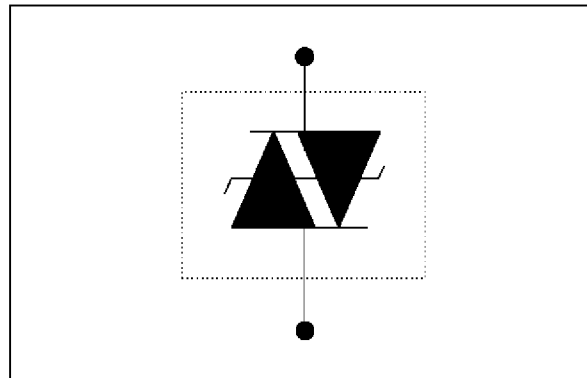
The TPBxx series has been designed to protect telecommunication equipments against lightning and transient induced by AC power lines.



IN ACCORDANCE WITH FOLLOWING STANDARDS :

| | | | |
|-----------------|---|-----------------------|--------|
| CCITT K17 - K20 | { | 10/700 μs | 1.5 kV |
| | | 5/310 μs | 38 A |
| VDE 0433 | { | 10/700 μs | 2 kV |
| | | 5/200 μs | 50 A |
| CNET | { | 0.5/700 μs | 1.5 kV |
| | | 0.2/310 μs | 38 A |

SCHEMATIC DIAGRAM



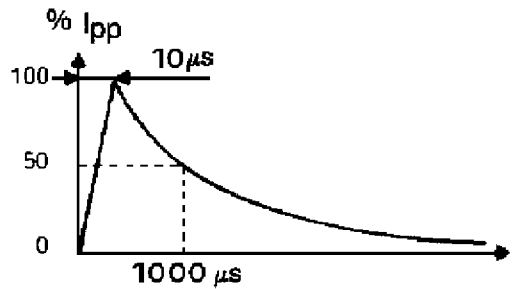
ABSOLUTE RATINGS (limiting values) ($-40^{\circ}\text{C} \leq T_{\text{amb}} \leq + 85^{\circ}\text{C}$)

| Symbol | Parameter | | Value | Unit |
|---------------------------|---|---|------------------------|--|
| P | Power dissipation on infinite heatsink | $T_{\text{amb}} = 50^{\circ}\text{C}$ | 5 | W |
| I_{PP} | Peak pulse current See note 1 | 10/1000 μs 8/20 μs | 90 150 | A |
| I_{TSM} | Non repetitive surge peak on-state current | $t_p = 20 \text{ ms}$ | 50 | A |
| di/dt | Critical rate of rise of on-state current | Non repetitive | 100 | A/ μs |
| dv/dt | Critical rate of rise of off-state voltage | 67% VBR | 5 | KV/ μs |
| T_{stg} T_j | Storage and operating junction temperature range | | - 40 to + 150 + 150 | $^{\circ}\text{C}$ $^{\circ}\text{C}$ |
| T_L | Maximum lead temperature for soldering during 10 s. | | 230 | $^{\circ}\text{C}$ |

THERMAL RESISTANCES

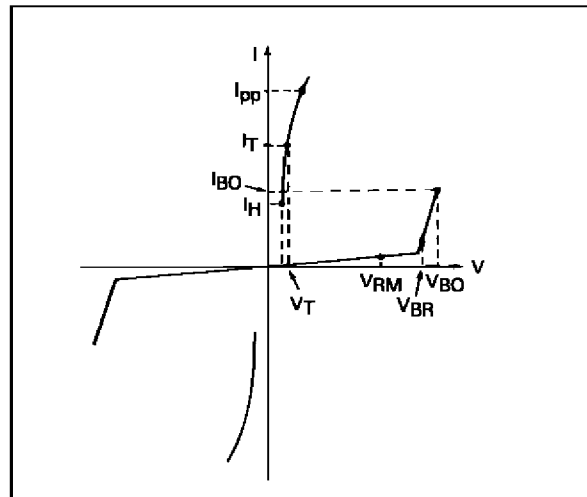
| Symbol | Parameter | Value | Unit |
|---------------|--|-------|------|
| $R_{th(j-l)}$ | Junction to leads. On infinite heatsink. | 20 | °C/W |
| $R_{th(j-a)}$ | Junction to ambient. On printed circuit. $L_{lead} = 10\text{ mm}$ | 75 | °C/W |

Note 1: 10/1000 μs wave form.



ELECTRICAL CHARACTERISTICS

| Symbol | Parameter |
|----------|--------------------|
| V_{RM} | Stand-off voltage |
| V_{BR} | Breakdown voltage |
| V_{BO} | Breakover voltage |
| I_H | Holding current |
| V_T | On-state voltage |
| I_{BO} | Breakover current |
| I_{PP} | Peak pulse current |



ELECTRICAL CHARACTERISTICS

| Type | I _{RM} @ V _{RM} | | V _{BR} @ I _R | | V _{BO} @ I _{BO} | | V _T | C | I _H |
|------------------------|-----------------------------------|-----|----------------------------------|----|-----------------------------------|-----|----------------|-----|--------------------------|
| | max | | min | | max | max | max | max | min |
| | μA | V | V | mA | V | mA | V | pF | note2 |
| P TPB62A - 12 or 18 | 2 | 56 | 62 | 1 | 82 | 300 | 3.5 | 300 | Suffix 12 for 120 mA. |
| TPB62B - 12 or 18 | 2 | 56 | 62 | 1 | 75 | 300 | 3.5 | 300 | |
| P TPB68A - 12 or 18 | 2 | 61 | 68 | 1 | 90 | 300 | 3.5 | 300 | |
| TPB68B - 12 or 18 | 2 | 61 | 68 | 1 | 82 | 300 | 3.5 | 300 | |
| (1) TPB75A - 12 or 18 | 2 | 67 | 75 | 1 | 100 | 300 | 3.5 | 300 | |
| (1) TPB75B - 12 or 18 | 2 | 67 | 75 | 1 | 91 | 300 | 3.5 | 300 | |
| (1) TPB82A - 12 or 18 | 2 | 74 | 82 | 1 | 109 | 300 | 3.5 | 300 | |
| (1) TPB82B - 12 or 18 | 2 | 74 | 82 | 1 | 99 | 300 | 3.5 | 300 | |
| (1) TPB91A - 12 or 18 | 2 | 82 | 91 | 1 | 121 | 300 | 3.5 | 300 | |
| (1) TPB91B - 12 or 18 | 2 | 82 | 91 | 1 | 110 | 300 | 3.5 | 300 | |
| P TPB100A - 12 or 18 | 2 | 90 | 100 | 1 | 133 | 300 | 3.5 | 200 | |
| TPB100B - 12 or 18 | 2 | 90 | 100 | 1 | 121 | 300 | 3.5 | 200 | |
| P TPB110A - 12 or 18 | 2 | 99 | 110 | 1 | 147 | 300 | 3.5 | 200 | Suffix 18 for 180 mA. |
| TPB110B - 12 or 18 | 2 | 99 | 110 | 1 | 133 | 300 | 3.5 | 200 | |
| P TPB120A - 12 or 18 | 2 | 108 | 120 | 1 | 160 | 300 | 3.5 | 200 | |
| TPB120B - 12 or 18 | 2 | 108 | 120 | 1 | 145 | 300 | 3.5 | 200 | |
| P TPB130A - 12 or 18 | 2 | 117 | 130 | 1 | 173 | 300 | 3.5 | 200 | |
| TPB130B - 12 or 18 | 2 | 117 | 130 | 1 | 157 | 300 | 3.5 | 200 | |
| (1) TPB150A - 12 or 18 | 2 | 135 | 150 | 1 | 200 | 300 | 7 | 150 | |
| (1) TPB150B - 12 or 18 | 2 | 135 | 150 | 1 | 181 | 300 | 7 | 150 | |
| (1) TPB160A - 12 or 18 | 2 | 144 | 160 | 1 | 213 | 300 | 7 | 150 | |
| (1) TPB160B - 12 or 18 | 2 | 144 | 160 | 1 | 193 | 300 | 7 | 150 | |
| P TPB180A - 12 or 18 | 2 | 162 | 180 | 1 | 240 | 300 | 7 | 150 | |
| TPB180B - 12 or 18 | 2 | 162 | 180 | 1 | 217 | 300 | 7 | 150 | |
| P TPB200A - 12 or 18 | 2 | 180 | 200 | 1 | 267 | 300 | 7 | 150 | |
| TPB200B - 12 or 18 | 2 | 180 | 200 | 1 | 241 | 300 | 7 | 150 | |
| P TPB220A - 12 or 18 | 2 | 198 | 220 | 1 | 293 | 300 | 7 | 150 | |
| TPB220B - 12 or 18 | 2 | 198 | 220 | 1 | 265 | 300 | 7 | 150 | |
| P TPB240A - 12 or 18 | 2 | 216 | 240 | 1 | 320 | 300 | 7 | 150 | |
| TPB240B - 12 or 18 | 2 | 216 | 240 | 1 | 289 | 300 | 7 | 150 | |
| P TPB270A - 12 or 18 | 2 | 243 | 270 | 1 | 360 | 300 | 7 | 150 | |
| TPB270B - 12 or 18 | 2 | 243 | 270 | 1 | 325 | 300 | 7 | 150 | |

All parameters tested at 25°C, except where indicated.

P : Preferred device.

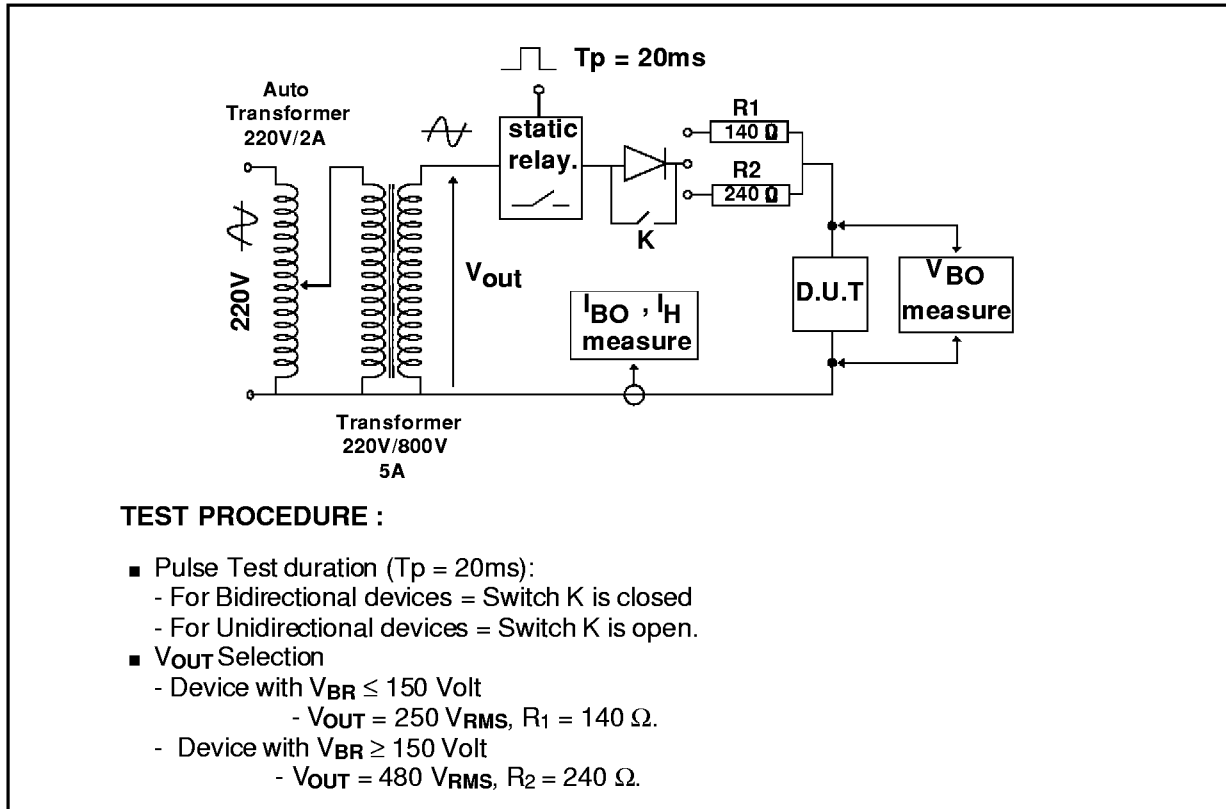
(1): These voltages are on request

Note 2 : See the reference test circuit for I_H, I_{BO} and V_{BO} parameters.

Note 3 : Square pulse T_p = 1 ms - I_T = 5A.

Note 4 : V_R = 1V, F = 1MHz.

REFERENCE TEST CIRCUIT FOR I_H , I_{BO} and V_{BO} parameters :



FUNCTIONAL HOLDING CURRENT (I_H) TEST CIRCUIT = GO - NOGO TEST.

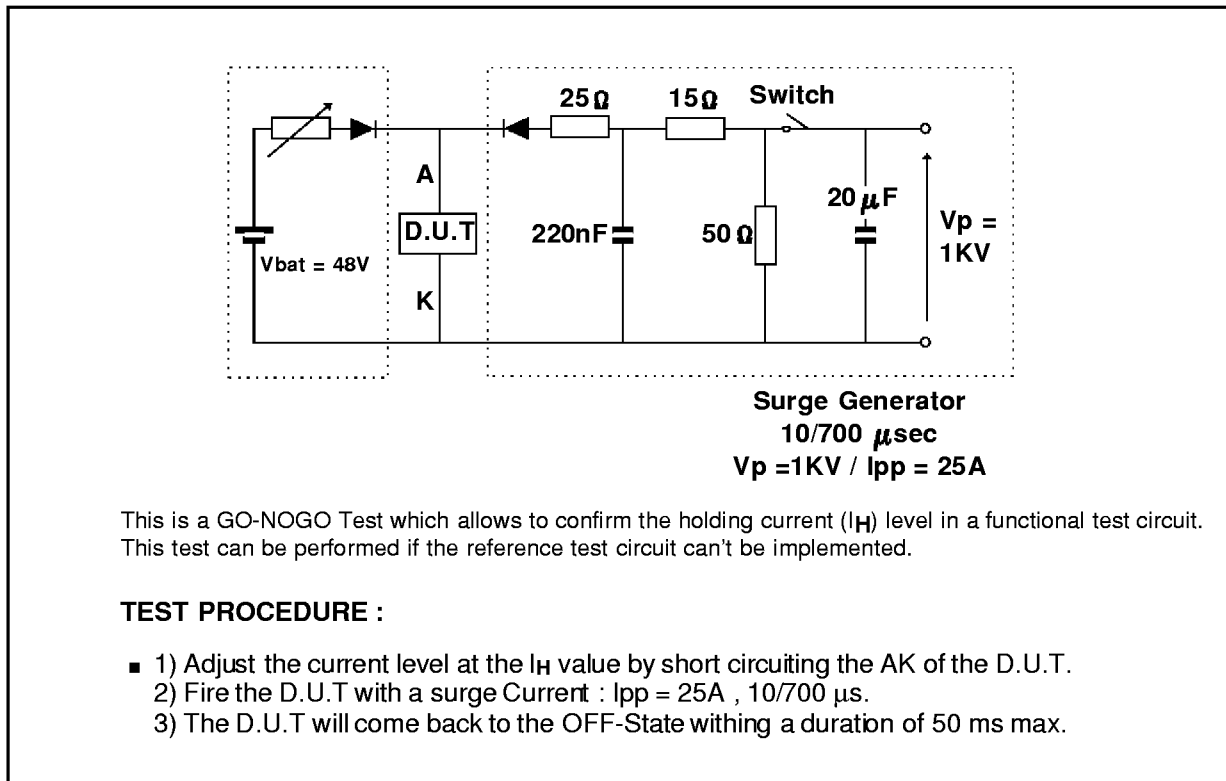


Figure 1 : Non repetitive surge peak on state current versus number of cycles. (with sinusoidal

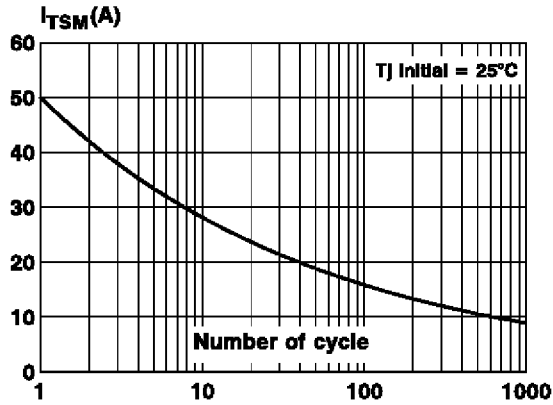


Figure 2 : On - state characteristics (typical values).

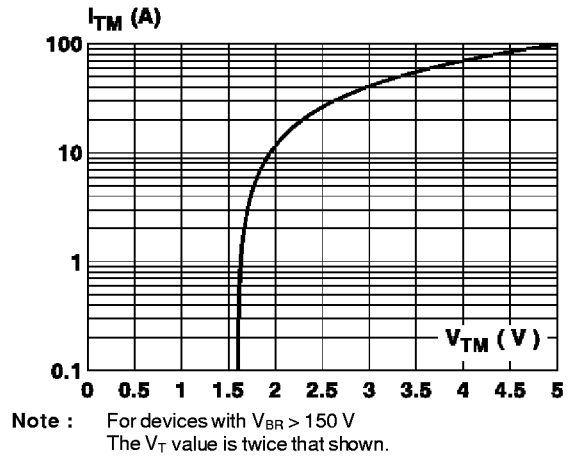
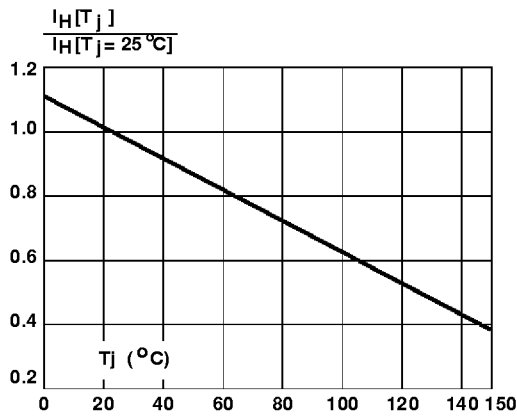
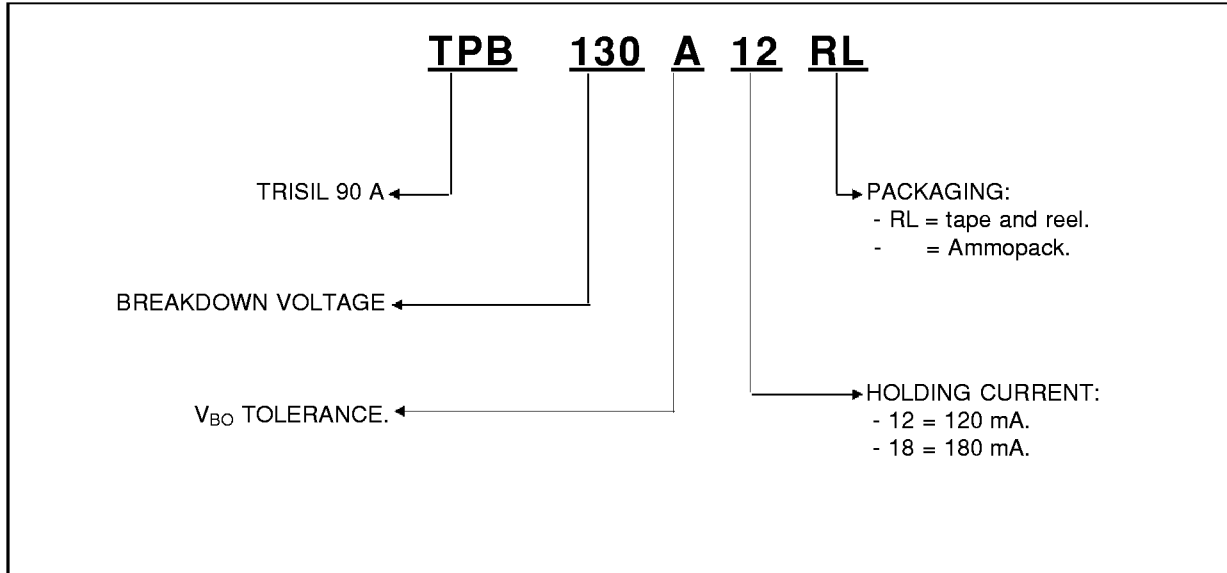


Figure 3 : Relative variation of holding current versus junction temperature.



TPBxxx

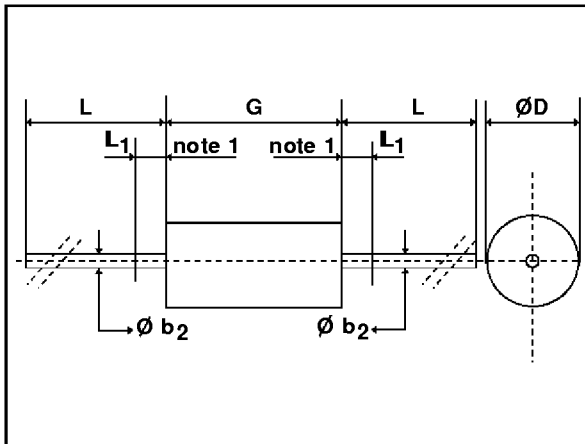
ORDER CODE



MARKING : Logo, Date Code, Part Number.

PACKAGE MECHANICAL DATA.

CB 429 Plastic.



| Ref | Millimeters | | Inches | |
|------------------|-------------|------|--------|-------|
| | min | max | min | max |
| Ø b ₂ | - | 1.06 | - | 0.042 |
| Ø D | - | 5.1 | - | 0.20 |
| G | - | 9.8 | - | 0.386 |
| L | 26 | - | 1.024 | - |
| L ₁ | - | 1.27 | - | 0.050 |

note 1: The diameter Ø b₂ is not controlled over zone L₁.

Packaging : Standard packaging is in tape and reel.

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