SGS-THOMSON MICROELECTRONICS

TPB200S
TPB245S/TPB265S

SURGE ARRESTORS

FEATURES

- SOLID STATE SURGE ARRESTOR PACKAGED IN AXIAL DIODE.
- VOLTAGE RANGE = 200 V TO 265 V
- TIGHT VOLTAGE TOLERANCE
- FAST RESPONSE TIME
- VERY LOW AND STABLE LEAKAGE CURRENT
- REPETITIVE SURGE CAPABILITY I_{PP} = 100 A, 10/1000 µs.
- FAIL-SAFE WHEN DESTROYED

CB429
Plastic

DESCRIPTION

Bidirectional device used for primary protection in telecom equipments.
Providing long service life, and adapted for sensitive electronic equipments protection.
If destroyed the component will continue to guarantee a protection with a permanent short circuit, meaning "fail save criteria" . This particular behaviour will also allow an easy failure detection on the line.

ABSOLUTE RATINGS (limiting values) - 40°C < T_{amb} < +80°C

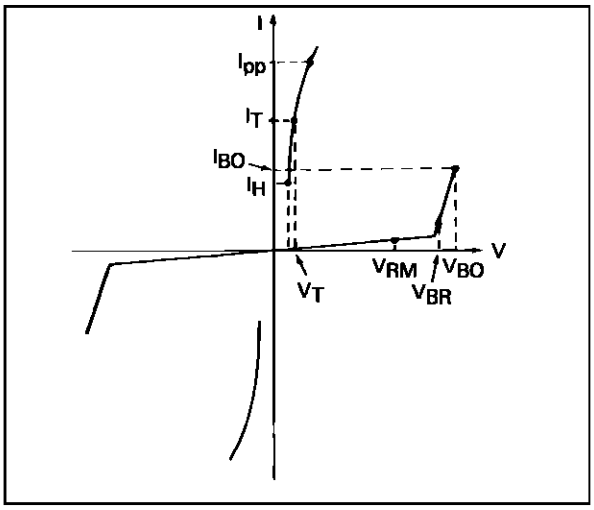
Symbol	Parameter		Value	Unit
I_{PP}	Peak Pulse Current.	10/1000 µs	100	A
		8/20 µs	200	A
	Fail Save Criteria.	8/20 µs	10	kA
I_{TSM}	Non Repetitive Surge Peak on-state Current. One cycle.	60 Hz	30	A
		50Hz	25	A
	Non Repetitive Surge Peak on-state Current F = 50 Hz.	1s	14	A
		2s	10	A
dv/dt	Critical Rate of Rise of on-state Voltage.	67% V_{BR}	10	kV/µs
T_L	Maximum Lead Temperature to Soldering During 10 s.		250	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
RTH (j-a)	Junction-leads Thermal Resistance	20	°C/W

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
IPP	Peak pulse current

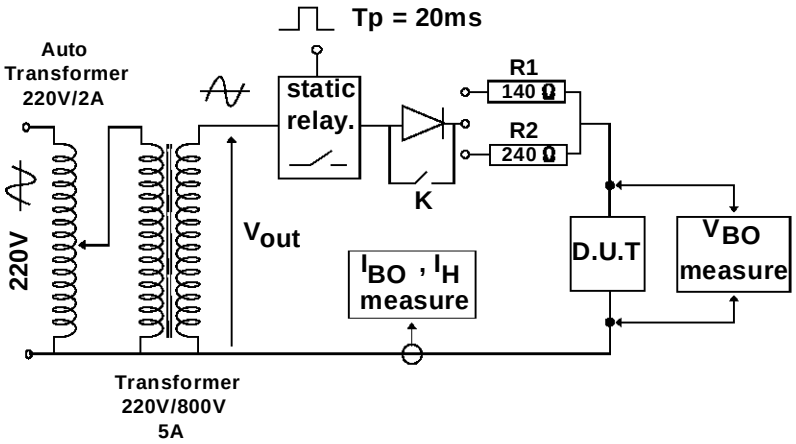


Types	I_R @ V_{RM} max		VBR @ I_R min		V_{BO} @ I_{BO} max		I_H min note1	V_T max note2	C max note3
	µA	V	V	mA	V	mA	mA	V	pF
TPB200S	10	170	200	1	265	600	260	3.5	200
TPB245S	10	210	245	1	350	600	260	3.5	200
TPB265S	10	225	265	1	400	600	260	3.5	200

All parameters tested at 25°C, except where indicated

Note 1 : See the reference test circuit for I_H, I_{BO} and V_{BO} parameters.
Note 2 : Square pulse Tp = 500 µs - I_T = 5A.
Note 3 : V_R = 1V, F = 1MHz.

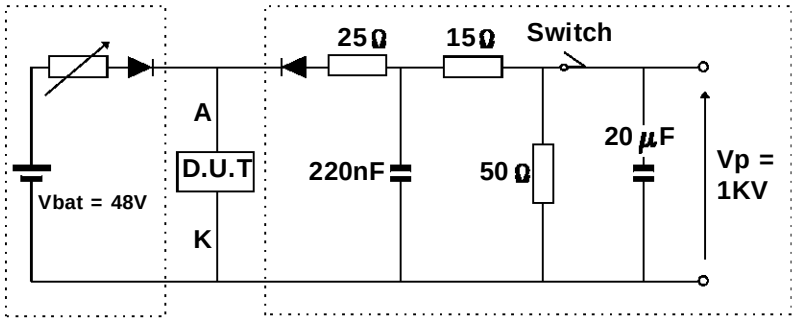
REFERENCE TEST CIRCUIT FOR I_H, I_{BO} and V_{BO} parameters :



TEST PROCEDURE :

- Pulse Test duration (Tp = 20ms):
  - For Bidirectional devices = Switch K is closed
  - For Unidirectional devices = Switch K is open.
- V_{OUT} Selection
  - Device with $V_{BR} \leq 150$ Volt
    - $V_{OUT} = 250\ V_{RMS}$, $R_1 = 140\ \Omega$.
  - Device with $V_{BR} \geq 150$ Volt
    - $V_{OUT} = 480\ V_{RMS}$, $R_2 = 240\ \Omega$.

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



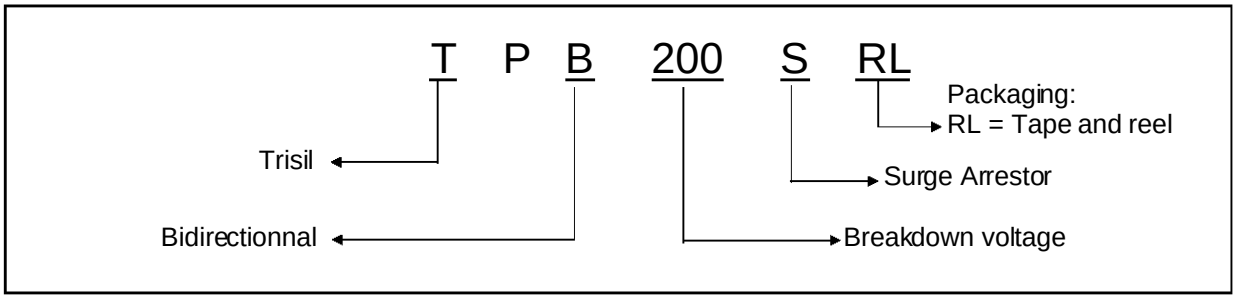
Surge Generator
10/700 µsec
Vp =1KV / Ipp = 25A

This is a GO-NOGO Test which allows to confirm the holding current (I_H) level in a functional test circuit. This test can be performed if the reference test circuit can't be implemented.

TEST PROCEDURE :

- 1) Adjust the current level at the I_H value by short circuiting the AK of the D.U.T.
  2) Fire the D.U.T with a surge Current : Ipp = 25A , 10/700 µs.
  3) The D.U.T will come back to the OFF-State within a duration of 50 ms max.

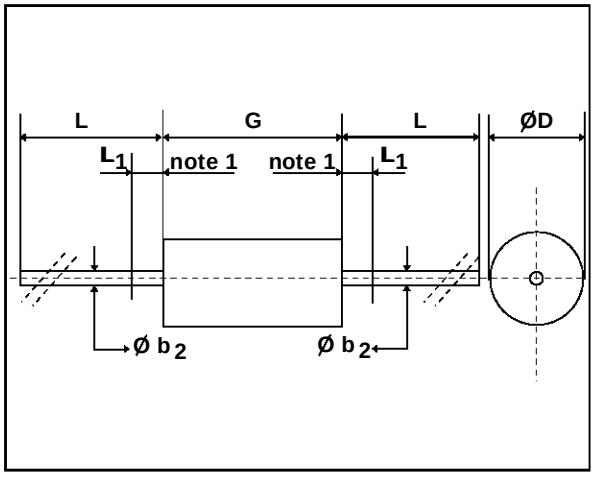
ORDER CODE



MARKING

Type	Marking
TPB200S TPB245S TPB265S	TPB200S TPB245S TPB265S

PACKAGE MECHANICAL DATA



Ref	Millimeters		Inches	
	min	max	min	max
∅ b_2	-	1.06	-	0.042
∅ D	-	5.1	-	0.20
G	-	9.8	-	0.386
L	26	-	1.024	-
L1	-	1.27	-	0.050

note 1:The diameter ∅ b_2 is not controllec over zone L1.

Packaging : Products are supplied in tape and reel.