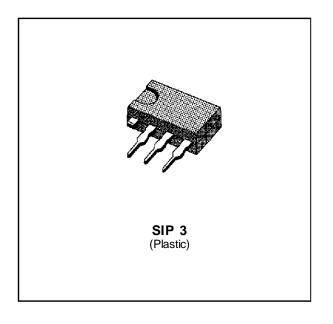


THBT200S

TRISIL FOR LINE CARD PROTECTION

FEATURES

- DUAL BIDIRECTIONAL CROWBAR PROTECTION.
- PEAK PULSE CURRENT:
 I_{PP} = 75 A, 10/1000 μs.
- HOLDING CURRENT = 150 mA min
- BREAKDOWN VOLTAGE = 200 V min.
- BREAKOVER VOLTAGE = 290 V max.



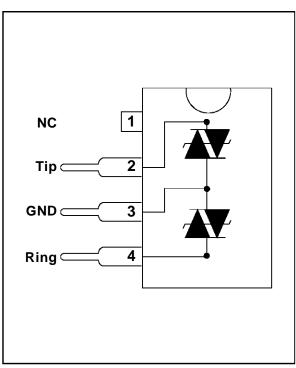
DESCRIPTION

This protection device has been especially designed to protect subscriber line cards using SLICS without integrated ring generator. THBT200 device protects ring generator relays against transient overvoltages.

IN ACCORDANCE WITH FOLLOWING STANDARDS:

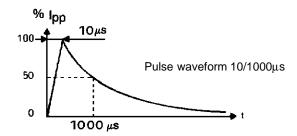
CCITT K17 - K20	{ 10/700 μs 5/310 μs	1.5 kV 38 A
VDE 0433	{ 10/700 μs 5/200 μs	2 kV 50 A
CNET	{ 0.5/700 μs 0.2/310 μs	1.5 kV 38 A

SCHEMATIC DIAGRAM



ABSOLUTE RATINGS (limiting values) (-40°C \leq T_{amb} \leq + 85°C)

Symbol	Parameter	Value	Unit	
lpp	Peak pulse current	10/1000 μs 8/20 μs	75 150	А
ITSM	Non repetitive surge peak on-state current	30	А	
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} Tj	Storage and operating junction temperature rar	- 40 to + 150 + 150	°C °C	
TL	Maximum lead temperature for soldering during	260	°C	

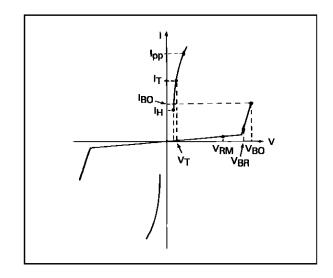


THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
R _{th} (j-a)	Junction-to-ambient	70	°C/W

ELECTRICAL CHARACTERISTICS

Symbol	Parameter		
V _{RM}	Stand-off voltage		
V _{BR}	Breakdown voltage		
V _{BO}	Breakover voltage		
lΗ	Holding current		
VT	On-state voltage		
IBO	Breakover current		
IPP	Peak pulse current		



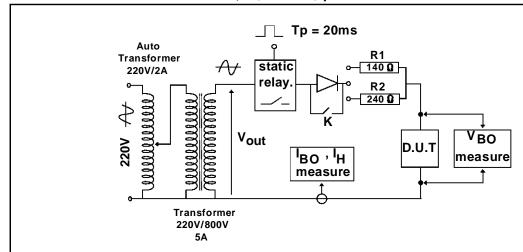
PARAMETERS RELATED TO ONE TRISIL.

Туре	I _{RM} @	V _{RM}	VBR	@ I R	V _{BO}	@	l _{BO}	Ιн	VT	С
	max		min		max	min	max	min	max	max
						note1		note1	note2	note3
	μ Α	V	V	mA	٧	mA	mA	mA	٧	pF
THBT200S	10	180	200	1	290	150	800	150	8	200

All parameters tested at 25°C, except where indicated

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

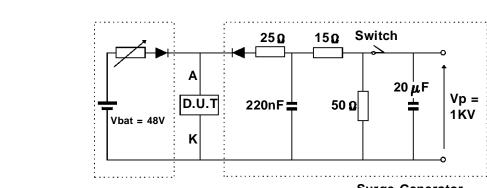
REFERENCE TEST CIRCUIT FOR I_H, I_{BO} and V_{BO} parameters :



TEST PROCEDURE:

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

FUNCTIONAL HOLDING CURRENT (IH) 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 , $10/700 \mu s$.
 - 3) The D.U.T will come back to the OFF-State within a duration of 50 ms max.

Figure 1: Relative variation of holding current versus junction temperature.

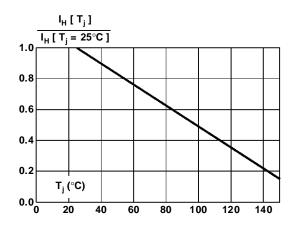


Figure 3: Peak on state voltage versus peak on state current (typical values).

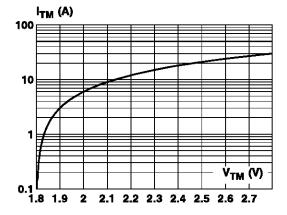


Figure 2: Non repetitive surge peak on state current versus number of cycles (1 cycle = 20

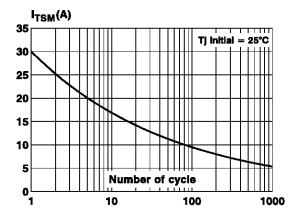
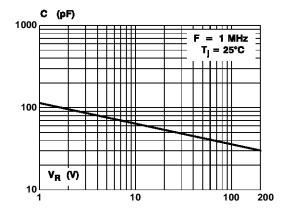
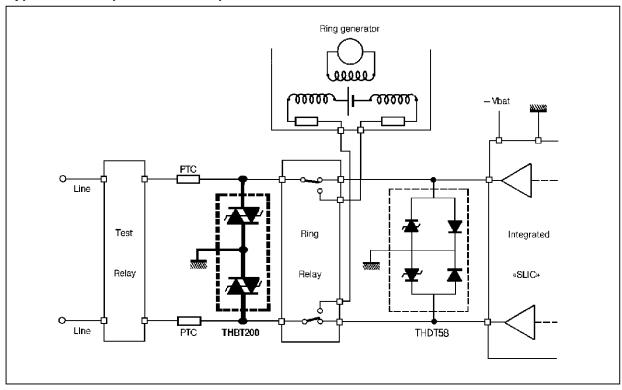


Figure 4: Capacitance versus reverse applied voltage (typical values).

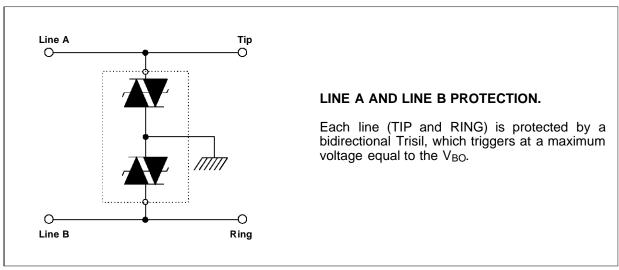


APPLICATION CIRCUIT

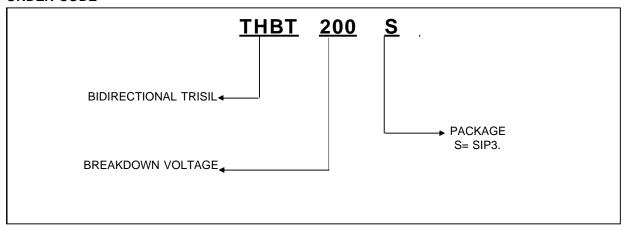
Typical line card protection concept



FUNCTIONAL DESCRIPTION



ORDER CODE

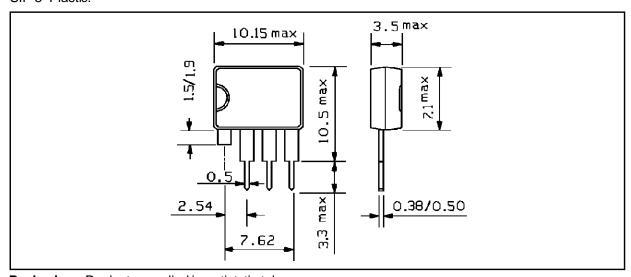


MARKING

Package	Type	Marking
SIP3	THBT200S	THBT200S

PACKAGE MECHANICAL DATA (in millimeters)

SIP 3 Plastic.



Packaging: Products supplied in antistatic tubes.

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