SGS-THOMSON MICROELECTRONICS

THDT 58 D

TRISIL

DESCRIPTION

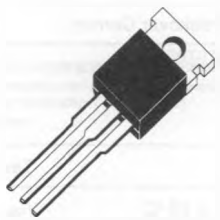
This protection device has been especially designed for subscriber line-card and terminal protection. By itself, it enables to protect integrated SLIC against transient overvoltages. A diode clips positive overloads and breakover device negative overloads.

Its ion-implanted technology confers excellent electrical characteristics on it.

This is why this THDT 58 D easily corresponds to the main protection standard norms which are related to the overvoltages on subscribers 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



TO 220 AB
(Plastic)

ABSOLUTE RATINGS (limiting values) (T_j = 25 °C)

Symbol	Parameter		Value	Unit
I_{pp}	Peak Pulse Current	1 ms expo	75	A
		8-20 µs expo*	150	
I_{FSM} I_{TSM}	Non Repetitive Surge Peak on-state Current	t_p = 20 ms	30	A
di/dt	Critical Rate of Rise of on-state Current	Non Repetitive	100	A/µs
T_{stg} T_j	Storage and Operating Junction Temperature Range		– 40 to 150 150	°C °C
T_L	Maximum Lead Temperature for Soldering During 10 s at 4 mm from Case		230	°C

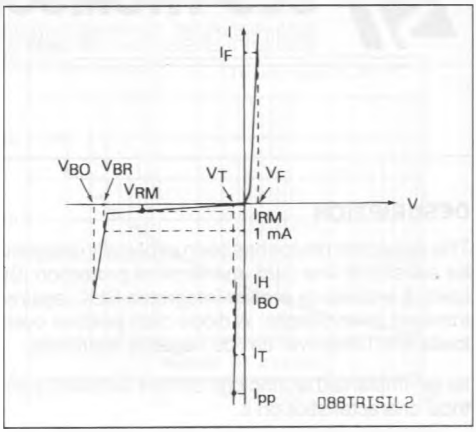
* ANSI STD C62.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to Case for DC	5	°C/W
$R_{th(j-a)}$	Junction to Ambient	60	°C/W

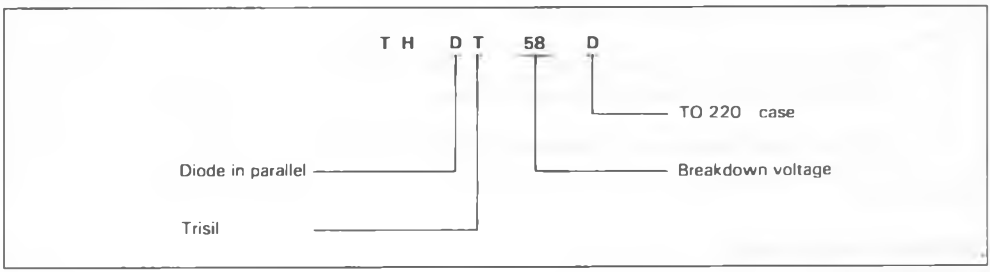
ELECTRICAL CHARACTERISTICS

Symbol	Parameter
V_{RM}	Stand-off Voltage
V_{BR}	Breakdown Voltage
V_{BO}	Clamping Voltage
I_H	Holding Current
V_T	On-state Voltage
V_F	Forward Voltage Drop
I_{BO}	Breakover Current
I_{pp}	Peak-pulse Current



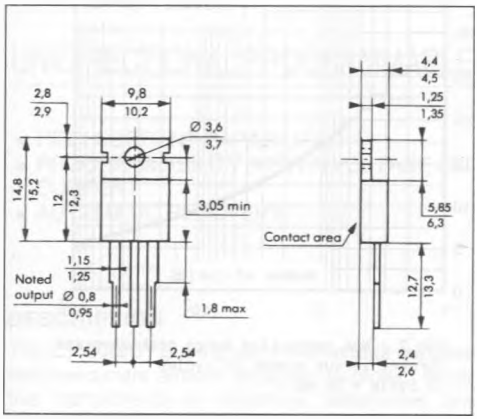
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
I_{RM}	T_j = 25 °C	V_{RM} = – 56 V				– 10	µA
V_{BR}	T_j = 25 °C	I_R = – 1 mA		– 58	– 60		V
V_{BO}	T_j = 25 °C	t_p = 100 µs				– 80	V
I_{BO}	T_j = 25 °C	t_p = 100 µs		– 150		– 800	mA
I_H	T_j = 25 °C	I_T = – 2 A		– 150			mA
V_T	T_j = 25 °C	I_T = – 5 A	t_p = 100 µs			– 3	V
V_F	T_j = 25 °C	I_F = 5 A	t_p = 100 µs			3	V
α_T					10		10^{-4}/°C
C	T_j = 25 °C	F = 1 MHz	V_R = – 5 V			500	pF
dv/dt	T_j = 25 °C	Exponential Ramp 67 % V_{BR}		5000			V/µs

ORDER CODE

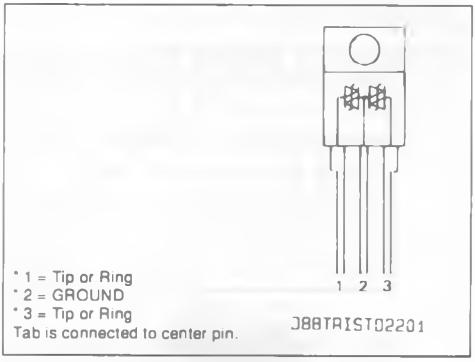


PACKAGE MECHANICAL DATA

TO 220 AB Plastic

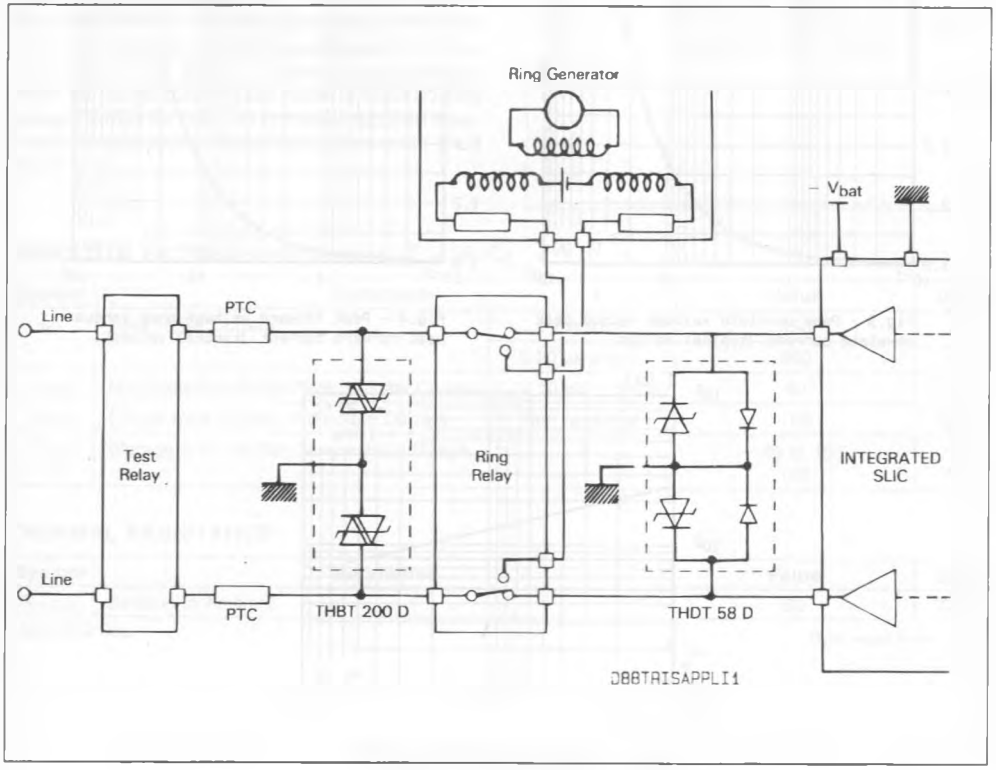


PIN CONNECTIONS



Cooling method : by conduction (Method C)
Marking : type number
Weight : 2 g.

APPLICATION CIRCUIT



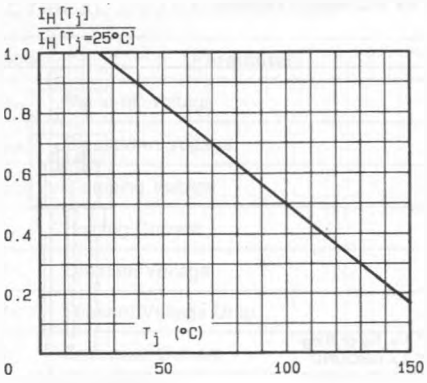


Fig.1 - Relative variation of holding current versus junction temperature.

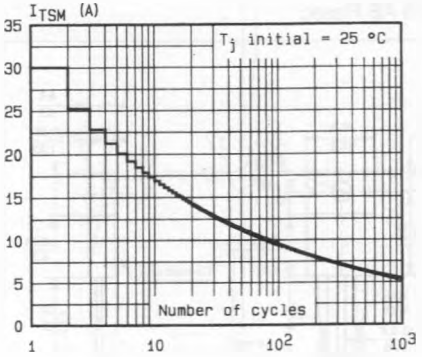


Fig.2 - Non_repetitive surge peak on-state current versus number of cycles (1 cycle = 20 ms).

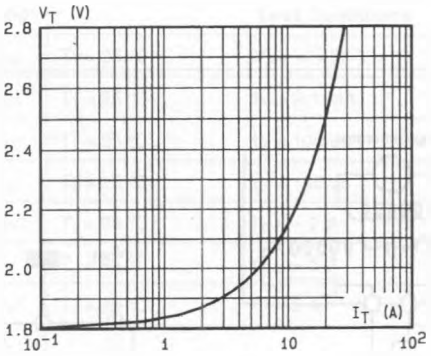


Fig.3 - Peak on-state voltage versus peak on-state current (typical values).

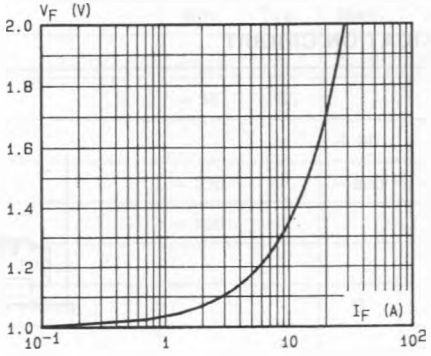


Fig.4 - Peak forward voltage drop versus peak forward current (typical values).

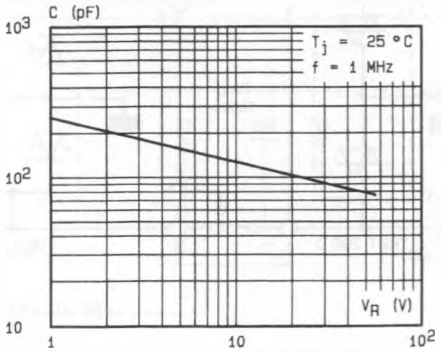


Fig.5 - Capacitance versus reverse applied voltage (typical values).