TPA Series

Telecommunication Protection

RoHS COMPLIANT

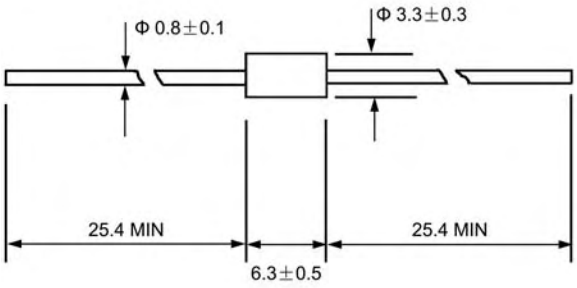


BREAKDOWN VOLTAGE: 62 --- 270 V
POWER DISSIPATION: 1.7 W

Features

- ◇ Bidirectional crowbar protection
- ◇ Voltage range:from 62V to 270V.
- ◇ Holding current:I_H=150mA min
- ◇ Repetitive peak pulse current:I_{PP}=50A,10/1000 μs.

DO-15



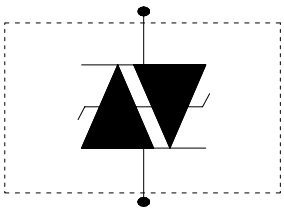
Dimensions in millimeters

DESCRIPTION

The TPA series are designed for protecting sensitive telecommunication equipment against lightning and transient voltages induced by AC power lines.

The devices provide bidirectional protection by crowbar action.Their characteristic response to transien over-voltages makes them particularly suited to protect volatge sensitive telecommunication equipment.

SCHEMATIC DIAGRAM



Complies with the following standards:	Peak surge voltage (V)	Voltage waveform (μ s)	Current waveform (μ s)	Admissible Ipp (A)	Necessary resistor (Ω)
(CCITT)ITU-K20	1000	10/700	5/310	25	--
(CCITT)ITU-K17	1500	10/700	5/310	38	--
VDE0433	2000	10/700	5/310	50	--
VDE0878	2000	1.2/50	1/20	50	--
IEC-1000-4-5	level 3 level4	10/700 1.2/50	5/310 8/20	50 100	-- --
FCC Part 68,lightning surge type A	1500 800	10/160 10/560	10/160 10/560	75 55	12.5 6.5
FCC Part 68,lightning surge type B	1000	9/720	5/320	25	--
BELLCORE TR-NWT-001089 First level	2500 1000	2/10 10/1000	2/10 10/1000	150 50	11.5 10
BELLCORE TR-NWT-001089 Second level	5000	2/10	1/20	150	11.5
CNET131-24	1000	0.5/700	0.8/310	25	--

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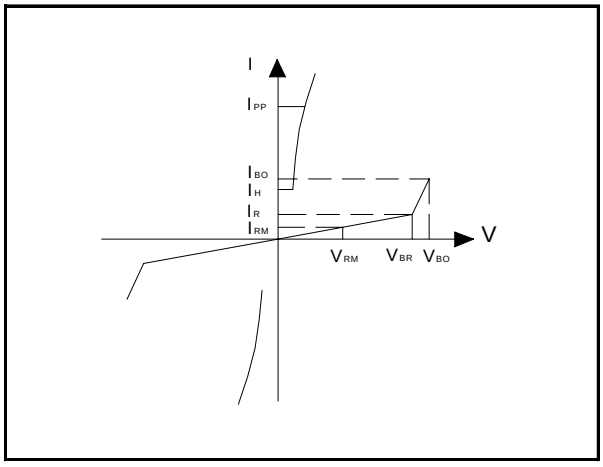
ABSOLUTE MAXIMUM RATINGS (T_A=25℃)

Symbol	Parameter		Value	Unit
P	Power dissipation on infinite heatsink	T_{amb}=50℃	1.7	W
Ipp	Peak pulse current	10/1000 μs 8/20 μs	50 100	A
I_{FSM}	Non repetitive surge peak on-state current	tp=20ms	30	A
I^2t	I^2t vallue for fusing	tp=20ms	9	A^2s
dV/dt	Critical rate of rise of off-state voltage	V_{RM}	5	KV/μs
T_{stg} T_j	Storage temperature range Maximum junction temperature		-55to+150 150	℃ ℃
T_L	Maximum leadtemperature for soldering during 10sat 5mmform case		230	℃

THERMAL RESISTANCES

Symbol	Parameter	Value	Unlt
R_{th}(j-l)	Junction to leads (L_{lead}=10mm)	60	℃/W
R_{th}(j-a)	Junction to ambient on printed circuit (L_{lead}=10mm)	100	℃/W

Type	I_{RM} @ V_{RM} max.		V_{BR} @ I_R min.		V_{BO} @ I_{BO} max. note1		I_H min. note2	C max. note3
	μA	V	V	mA	V	mA	mA	pF
TPA62	2	56	62	1.0	82	800	150	150
TPA68	2	61	68	1.0	90	800	150	150
TPA100	2	90	100	1.0	133	800	150	100
TPA120	2	108	120	1.0	160	800	150	100
TPA130	2	117	130	1.0	173	800	150	100
TPA180	2	162	180	1.0	240	800	150	100
TPA200	2	180	200	1.0	267	800	150	100
TPA220	2	198	220	1.0	293	800	150	100
TPA240	2	216	240	1.0	320	800	150	100
TPA270	2	243	270	1.0	360	800	150	100



ELECTRICAL CHARACTERISTICS (T_A=25℃)

Symbol	Parameter
V_{RM}	Stand-off voltage
I_{RM}	Leakage current at stand-off voltage
V_R	Continuous reverse voltage
V_{BR}	Breakdown voltage
V_{BO}	Breakover voltage
I_H	Holding current
I_{BO}	Breakover current
I_{PP}	Peak pulse current
C	Capacitance

Note1: Measured at 50Hz (1 cycle) See test circuit 1.

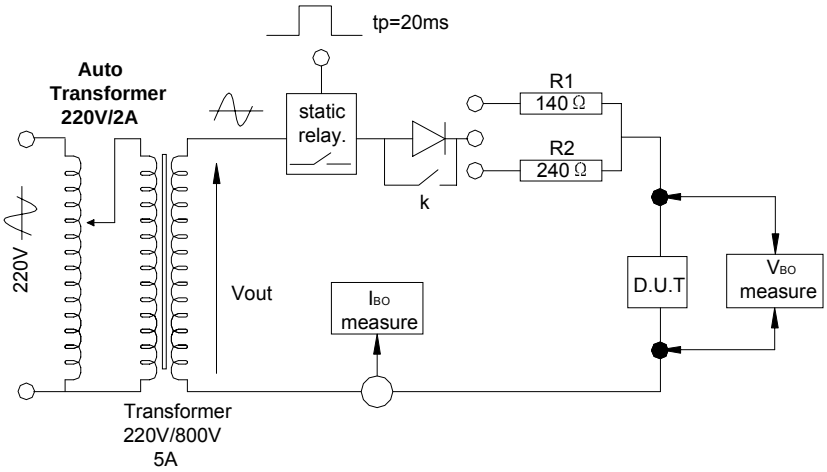
Note2: See test circuit2.

Note3: V_R=1V,F=1MHz, Refer to fig.3 for C versus V_R.

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TEST CIRCUIT 1 FOR IBO AND VBO PARAMETERS:



TEST PROCEDURE :

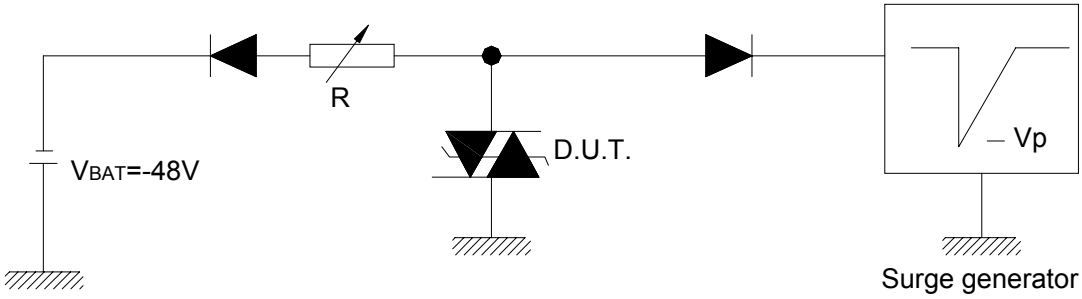
Pulse Test duration (tp = 20ms):

- For Bidirectional devices = SwitchK is closed
- For Unidirectional devices = Switch K is open.

V_{OUT} Selection

- Device with V_{BO} < 200 Volt
  - V_{OUT} = 250 V_{RMS}, R1 = 140 Ω.
- Device with V_{BO} ⩾200 Volt
  - V_{OUT} = 480 V_{RMS}, R2 = 240Ω.

TEST CIRCUIT 2 FOR IH PARAMETER:



This is a GO-NOGOTest which allows to confirm the holding current (IH) level in a functional test circuit.

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 = 10A , 10/1000 ms.
3) The D.U.T will come back off-state within 50ms max.

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FIG.1 -- NON REPETITIVE SURGE PEAK ON-STATE CURRENT VERSUS OVERIOAD DURATION (T_J INIt!AI=25°C).

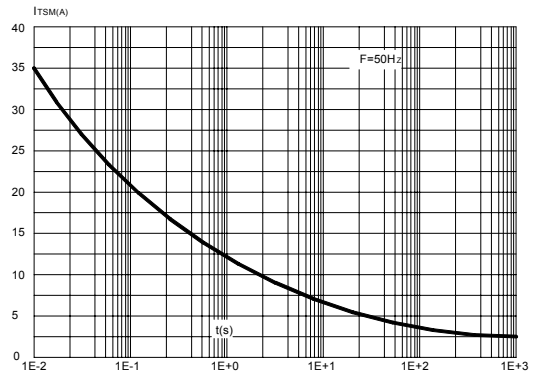


FIG.2 -- REIATIVE VARIATION OF GOIDING CURRENT VERSUS JUNCTION TEMPERATURE.

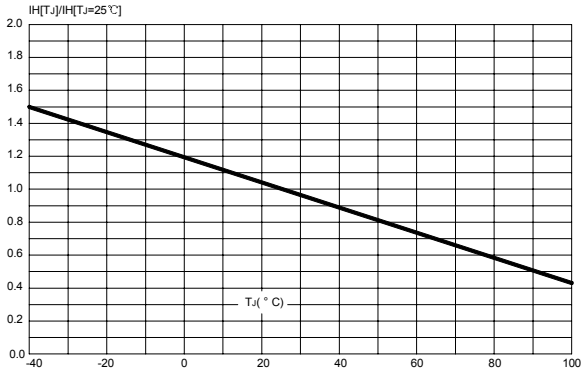


FIG.3 -- REIATIVE VARIATION OF JUNCTION CAPACITANCE VERSUS REVERSE APPLIED VOITAGE

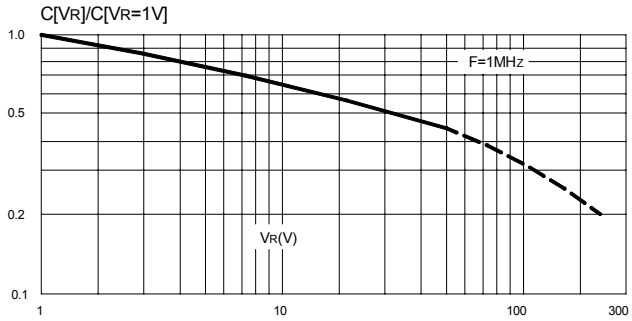


FIG.4 -- ON-STATE CURRENT VERSUS ON-STATE VOITAGE

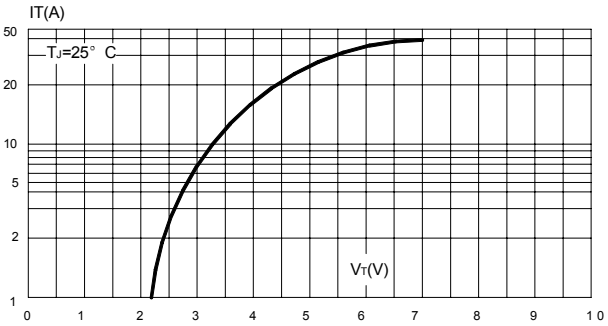
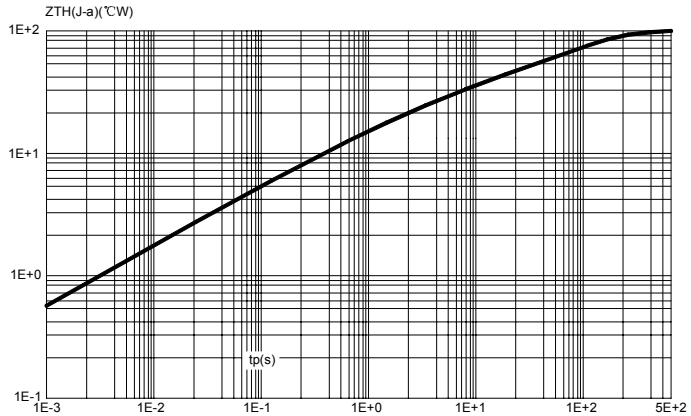


FIG.5 -- TRANSIENT THERMAI IMPEDANCE JUNCTION TO AMBIENT VERSUS PUISE DURATION



PACKAGE	SPQ/PCS	CARTON SPQ/PCS	CARTON SIZE/CM	CARTON GW/KG	CARTON NW/KG
DO-15	3000/AMMO	30000	42X28X31	12.00	10.00

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