

Telecommunication Protection

Reverse Voltage - 62 to 270V

Power Dissipation: 1.7 W

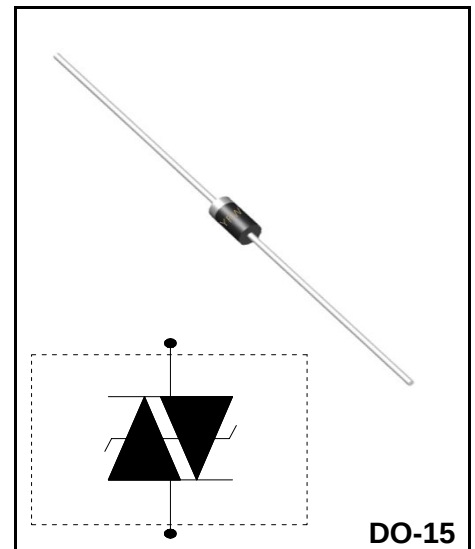
FEATURES

- ◆ Bidirectional crowbar protection
- ◆ Voltage range: from 62V to 270V.
- ◆ Holding current: $I_H = 150\text{mA}$ min
- ◆ Repetitive peak pulse current: $I_{pp} = 50\text{A}, 10/1000\mu\text{s}$.

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 transient over-voltages makes them particularly suited to protect sensitive telecommunication equipment.

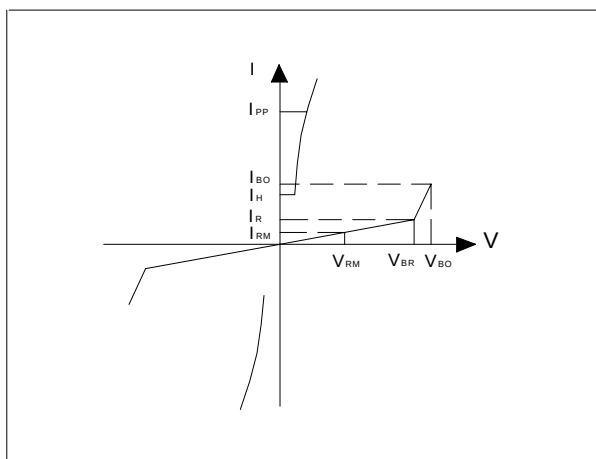


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Power dissipation on infinite heatsink $T_{amb} = 50^\circ\text{C}$	P	1.7	W
Peak pulse current $10/1000\mu\text{s}$ $8/20\mu\text{s}$	I_{pp}	50 100	A
Non repetitive surge peak on-state current $t_p = 20\text{ms}$	I_{FSM}	30	A
I^2t value for fusing $t_p = 20\text{ms}$	I^2t	9	A^2s
Critical rate of rise of off-state voltage V_{RM}	dV/dt	5	$\text{KV}/\mu\text{s}$
Operating Temperature Range	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$
Maximum lead temperature for soldering during 10s at 5mm from case	T_L	230	$^\circ\text{C}$
Junction to leads ($L_{lead} = 1.0\text{mm}$)	$R_{th(j-l)}$	60	$^\circ\text{C}/\text{W}$
Junction to ambient on printed circuit ($L_{lead} = 10\text{mm}$)	$R_{th(j-a)}$	100	$^\circ\text{C}/\text{W}$

Type	IRM @ VRM max.		VBR @ IR min.		VBO @ IBO max. note1		IH min. note2	C max. note3
	μA	V	V	mA	V	mA	mA	PF
TPA62	2	56	62	1	82	800	150	150
TPA68	2	61	68	1	90	800	150	150
TPA100	2	90	100	1	133	800	150	100
TPA120	2	10 8	120	1	160	800	150	100
TPA130	2	11 7	130	1	173	800	150	100
TPA180	2	16 2	180	1	240	800	150	100
TPA200	2	18 0	200	1	267	800	150	100
TPA220	2	19 8	220	1	293	800	150	100
TPA240	2	21 6	240	1	320	800	150	100
TPA270	2	24 3	270	1	360	800	150	100

ELECTRICAL CHARACTERISTICS (TA=25°C)

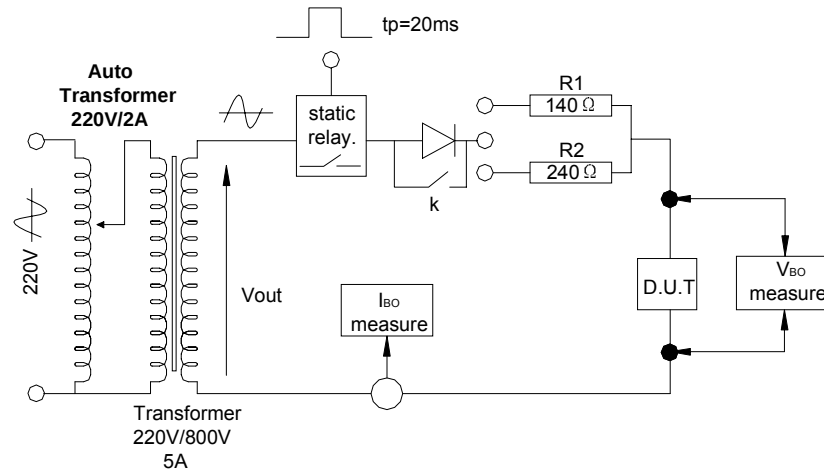


Note2: See test circuit2.

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

TEST CIRCUIT 1 FOR IBO AND VBO PARAMETERS:



TEST PROCEDURE :

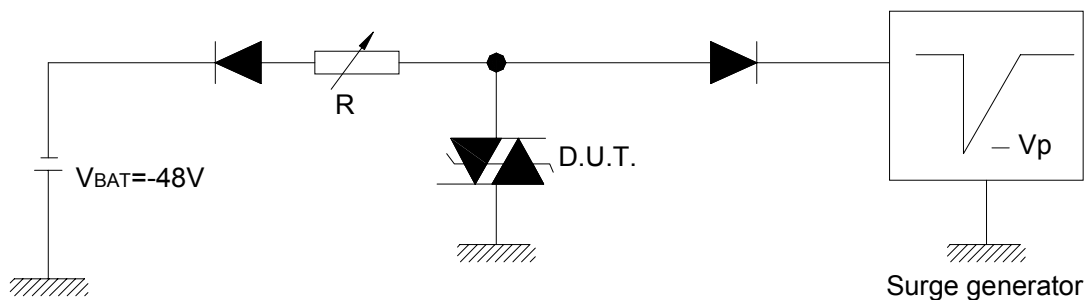
Pulse Test duration ($t_p = 20\text{ms}$):

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

V_{OUT} Selection

- Device with $V_{BO} < 200$ Volt
 - $V_{OUT} = 250 V_{RMS}$, $R1 = 140 \Omega$.
- Device with $V_{BO} \geq 200$ Volt
 - $V_{OUT} = 480 V_{RMS}$, $R2 = 240 \Omega$.

TEST CIRCUIT 2 FOR IH PARAMETER:



This is a GO-NOGOTest which allows to confirm the holding current (I_H) 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 : $I_{pp} = 10\text{A}$, $10/1000$ ms.
- 3) The D.U.T. will come back off-state within 50ms max.

FIG.1 -- NON REPETITIVE SURGE PEAK ON-STATE CURRENT VERSUS OVERLOAD DURATION (T_J Initial=25°C).

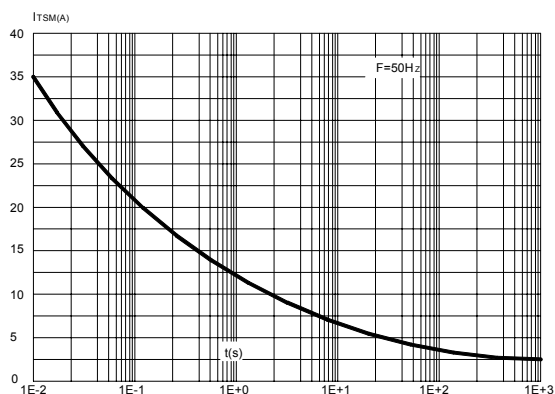


FIG.2 -- RELATIVE VARIATION OF FORWARDING CURRENT VERSUS JUNCTION TEMPERATURE.

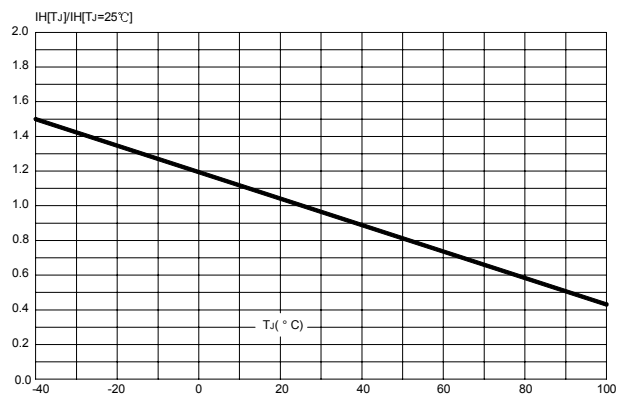


FIG.3 -- RELATIVE VARIATION OF JUNCTION CAPACITANCE VERSUS REVERSE APPLIED VOLTAGE

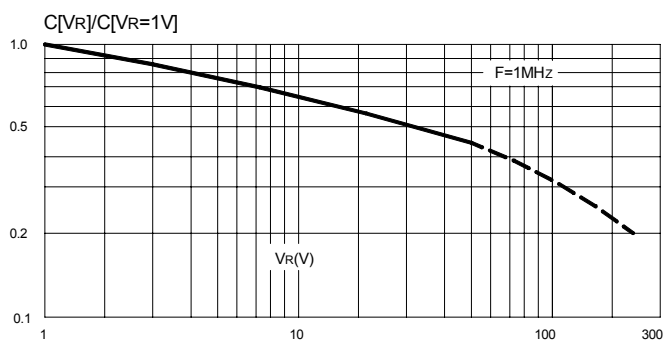


FIG.4 -- ON-STATE CURRENT VERSUS ON-STATE VOLTAGE

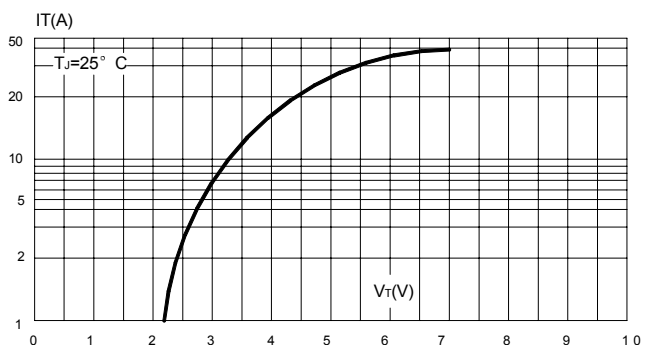
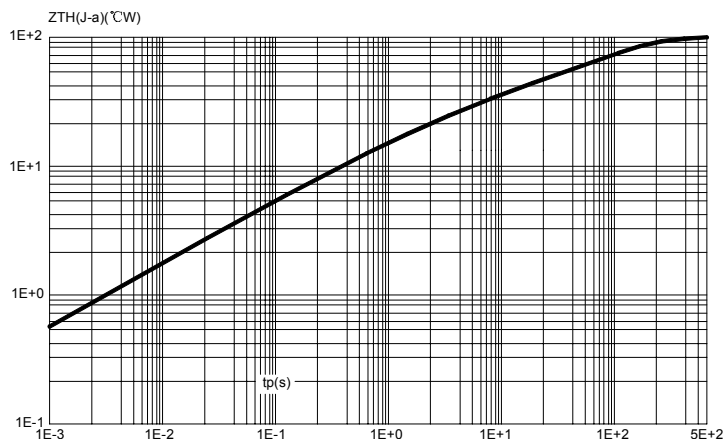


FIG.5 -- TRANSIENT THERMAL IMPEDANCE JUNCTION TO AMBIENT VERSUS PULSE DURATION



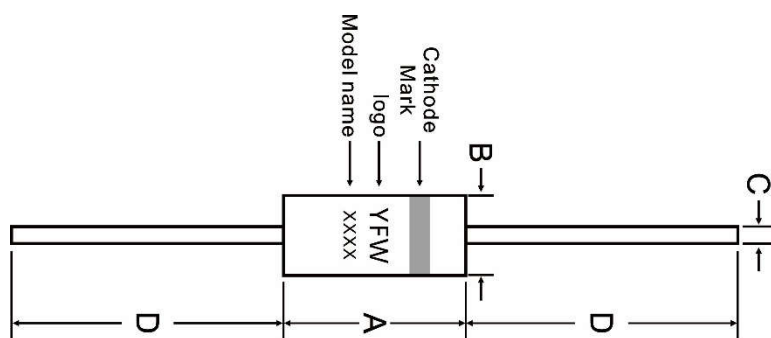
Ordering information

Package	Packing Description	Packing Quantity
DO-15	bulk	500PCS/Inner Box 30000PCS/Carton
	ammo pack	3000PCS/Inner Box 30000PCS/Carton

Package Dimensions

DO-15

Dim.	Millimeter(mm)		INCHES	
	Min.	Max.	Min.	Max.
A	5.80	7.60	0.230	0.300
B	2.60	3.60	0.104	0.140
C	0.71	0.86	0.028	0.034
D	25.4	-	1.00	-



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