

DUAL ASYMETRICAL TRANSIENT SUPPRESSOR

PRODUCT PREVIEW

DESCRIPTION

This Thyristor Surge Suppressor device has been especially designed to protect subscriber line cards against overvoltage. Two diodes clamp positive overloads while negative surges are suppressed by two protection thyristors.

Particular attention has been given to the internal wire bonding. The "4-point" configuration ensures a reliable protection, eliminating overvoltages introduced by the parasitic inductances of the wiring (Ldi/dt), especially for very fast transient overvoltages.

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

COMPLIES WITH THE FOLLOWING STANDARDS:

CCITT K20:	10/700 μ s	1 kV
	5/310 μ s	38 A
VDE 0433:	10/700 μ s	2 kV
	5/310 μ s	50 A
VDE 0878:	1.2/50 μ s	1.5 kV
	1/20 μ s	40 A
I3124:	0.5/700 μ s	1 Kv
	0.2/310 μ s	38 A
FCC part 68:	02/10 μ s	2.5 kv
	02/10 μ s	125 A (*)
BELLCORE		
TR-NWT-001089:	02/10 μ s	2.5 kv
	02/10 μ s	125 A (*)
	10/1000 μ s	1 kV
	10/1000 μ s	40 A (*)

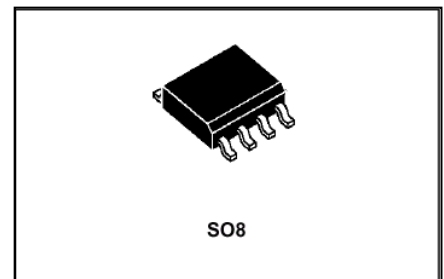
(*) with series resistors or PTC.

UL94V-0 TCPxx packages comply with requirements of UL94V-0

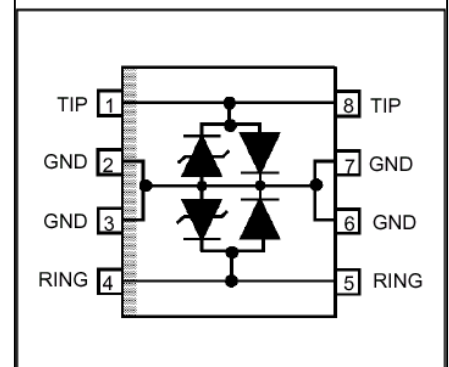
KEY FEATURES

- DUAL ASYMETRICAL TRANSIENT SUPPRESSOR
- PEAK PULSE CURRENT:
 $I_{pp}=40A, 10/1000\mu s$
- HOLDING CURRENT:150mA min.
- BREAKDOWN VOLTAGE:
TCP058A: 58 V
TCP065A: 65 V
TCP072A: 60 V
TCP082A: 70 V
TCP080A: 80 V
TCP120A: 120 V
- LOW DYNAMIC CHARACTERISTICS
- STAND CCITT K20 AND LSSGR

APPLICATIONS/BENEFITS



SCHEMATIC DIAGRAM



DUAL ASYMETRICAL TRANSIENT SUPPRESSOR

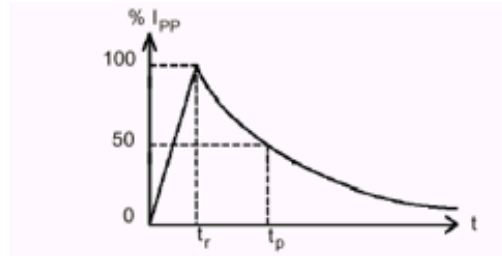
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ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25°C)

Symbol	Parameter	Value	Unit
I _{PP}	Peak pulse current (see note 1)	10/1000 μs	40
		5/310 μs	50
		2/10 μs	125
I _{TSM}	Non repetitive surge peak on-state current F = 50 Hz	t = 300 ms	10
		t = 1 s	50
		t = 5 s	1
I _{TSM}	F=50Hz, 60x1s, 2mn between pulse	1	A
T _{stg}	Storage temperature range	-55 to + 150	°C
T _j	Maximum junction temperature	150	
T _L	Maximum lead temperature for soldering during 10s	260	°C

Note 1: Pulse waveform:

10/1000 μs tr = 10 μs tp = 1000 μs
 5/310 μs tr = 5 μs tp = 310 μs
 2/10 μs tr = 2 μs tp = 10 μs

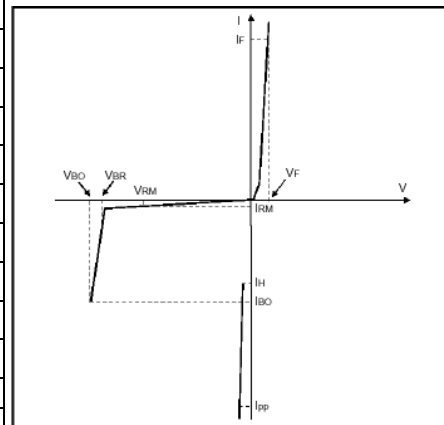


THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-a)}	Junction to ambient	170	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb}= 25°C)

Symbol	Parameter
V _{RM}	Stand-off voltage
I _{RM}	Leakage current at stand-off voltage
V _{BR}	Breakdown voltage
V _{BO}	Breakover voltage
I _H	Holding current
V _F	Forward voltage drop
V _{FP}	Peak forward voltage
I _{BO}	Breakover current
I _{PP}	Peak pulse current
C	Capacitance
αT	Temperature coefficient



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1 - PARAMETERS RELATED TO DIODE LINE / GND

Symbol	Test Conditions	Min	Typ	Max	Unit
V_F	$I_F=1A$ $t_p=100 \mu s$			2	V

2 - PARAMETERS RELATED TO PROTECTION THYRISTOR

Types	I_{RM} @ V_{RM}		I_R @ V_{BR}		V_{BO}	I_{BO}		I_H	C
	max		min		max	min	max	min	max
	μA	V	mA	V	V	V	mA	mA	pF
TCP058A	10	56	1	58	80	100	400	150	100
TCP065A	10	63	1	65	85	100	400	150	100
TCP072A	10	56	1	60	72	100	400	150	100
TCP082A	10	66	1	70	82	100	400	150	100
TCP080A	10	70	1	80	120	100	400	150	100
TCP120A	10	105	1	120	180	100	400	150	100



TCP058A thru TCP120A

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NOTES