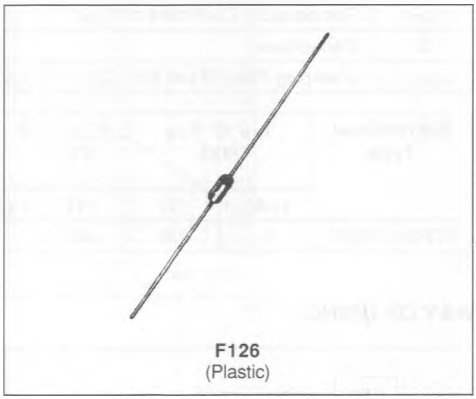
SGS-THOMSON MICROELECTRONICS

BZW04-376BT

BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR



F126
(Plastic)

DESCRIPTION

Transient voltage suppressor diode especially useful in protecting triacs.
When occurs an overvoltage, the transil induces a triggering current inside the triac. That avoids any damaging over shoot of its breakover voltage.

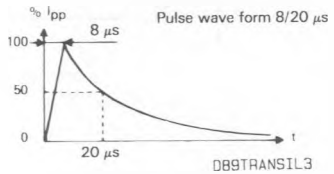
ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{pp}	Peak Pulse Current for 8-20 µs Exponential Pulse	T_j Initial = 25 °C See note 1	1	A
P	Power Dissipation on Infinite Heatsink	T_{amb} = 50 °C	1.7	W
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 150 150	°C °C
T_L	Maximum Lead Temperature for Soldering During 10 s at 4 mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads on Infinite Heatsink for L_{lead} = 10 mm	60	°C/W

Note : 1. For surges upper than the maximum values, the diode will present a short-circuit anode-cathode.

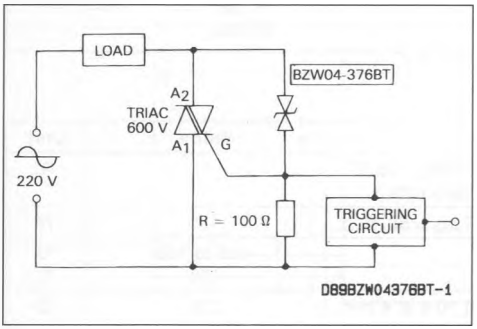


ELECTRICAL CHARACTERISTICS (T_j = 25°C)

Symbol	Parameter	Value
V_{RM}	Stand-off Voltage	See table
$V_{(BR)}$	Breakdown Voltage	
$V_{(CL)}$	Clamping Voltage	
I_{pp}	Peak Pulse Current	
α_T	Temperature Coefficient of $V_{(BR)}$	
C	Capacitance	
$t_{clamping}$	Clamping Time (0 volt to $V_{(BR)}$)	5 ns max.

Bidirectional Type	I_{RM} @ V_{RM} max.		$V_{(BR)}$ @ I_R typ.		V_{CL} @ I_{pp} max. 8-20 µs expo.		α_T max.	C typ. V_R = 0 f = 1 MHz
	(µA)	(V)	(V)	(mA)	(V)	(A)	(10^{-4}/°C)	(pF)
BZW04-376BT	5	376	480	1	600	1	11	35

WAY OF USING



Without TRANSIL, an overvoltage can turn on the triac by exceeding its breakover voltage and can damage it with the TRANSIL, when the overvoltage reaches its breakdown voltage a gate current turns on the triac safety.

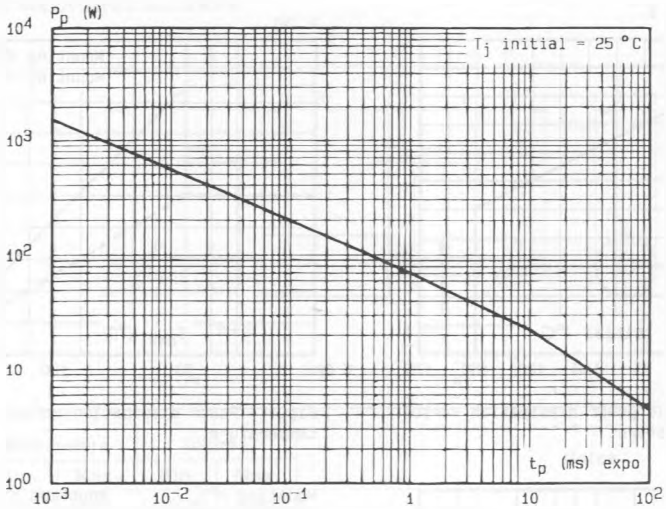


Fig.1 - Peak pulse power versus exponential pulse duration.

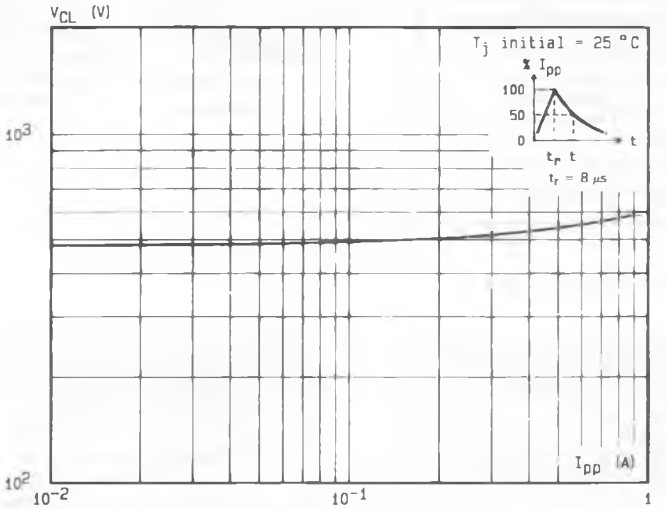


Fig.2 - Clamping voltage versus peak pulse current exponential waveform t = 20 µs.

Note : The curves of the figure 2 are specified for a junction temperature of 25 °C before surge. The given results may be extrapolated for other junction temperatures by using the following formula : $\Delta V_{(BR)} = \alpha_{T(V(BR))} \times [T_j - 25] \times V_{(BR)}$
For intermediate voltages, extrapolate the given results.

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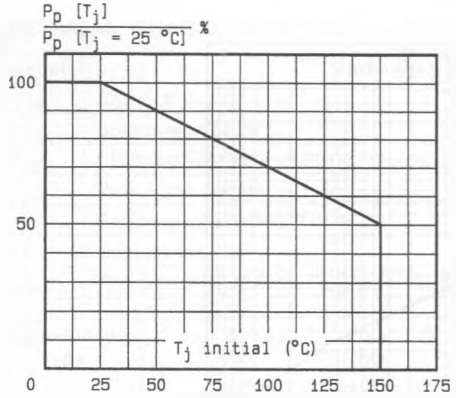


Fig.3 - Allowable power dissipation versus junction temperature.

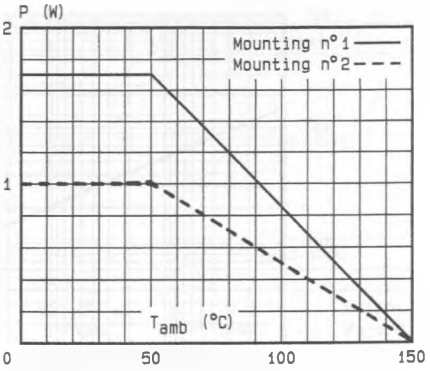


Fig.4 - Power dissipation versus ambient temperature.

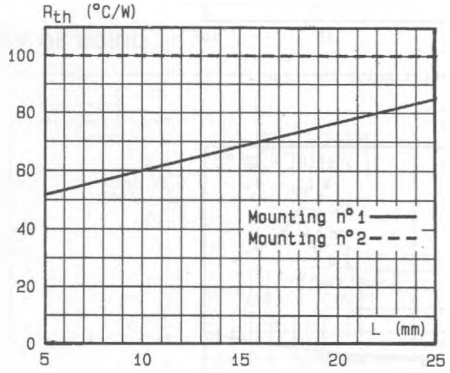
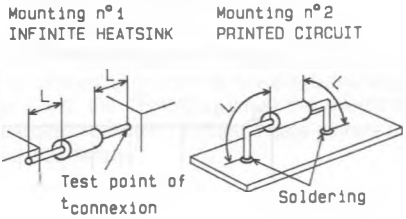


Fig.5 - Thermal resistance versus lead length.



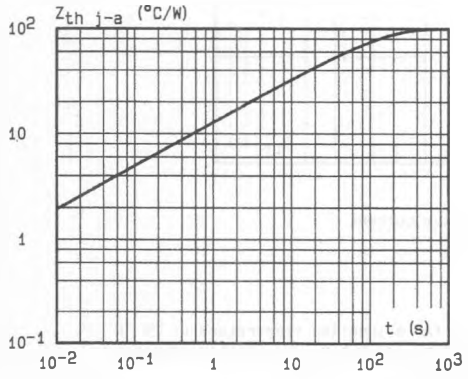


Fig.6 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

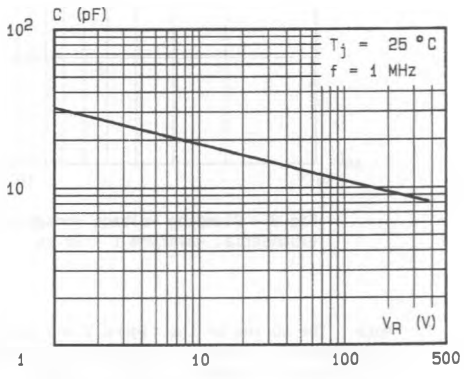


Fig.7 - Capacitance versus reverse applied voltage (typical values).

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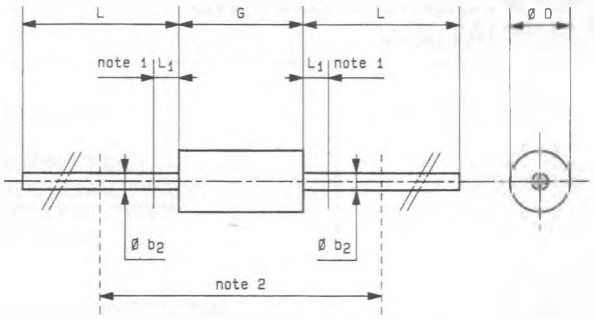
PACKAGE MECHANICAL DATA

F126 Plastic



Ref.	Millimeters		Inches		Notes
	Min.	Max.	Min.	Max.	
Ø b_2	0.76	0.86	0.029	0.034	1 - The lead diameter Ø b_2 is not controlled over zone L_1. 2 - The minimum axial lengh within which the device may be placed with its leads bent at right angles is 0.59" (15 mm).
Ø D	2.95	3.05	0.116	0.120	
G	6.05	6.35	0.238	0.250	
L	26	–	1.024	–	
L_1	–	1.27	–	0.050	

Cooling method : by convection (method A)
Marking : type number
Weight : 0.4 g