

### MAIN APPLICATIONS

ISDN equipment where transient overvoltage and electrostatic discharge protection is required, such as:

- S interface on NT equipment
- S interface of terminal equipment

### DESCRIPTION

The NTSP1 is a monolithic diode structure especially designed to protect ISDN S/T interfaces against transient overvoltage and ESD surges.

### FEATURES

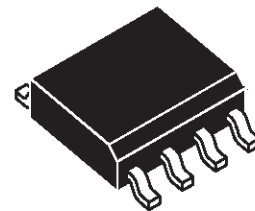
- Peak pulse current :  $I_{PP} = 10 \text{ A max (5 / 310 } \mu\text{s)}$
- Clamping voltage :  $V_{CL} = 3 \text{ V max}$
- Low leakage current :  $I_R = 1 \mu\text{A}$
- Capacitance :  $C = 40 \text{ pF typ.}$

### BENEFITS

- Monolithic diode structure for high reliability
- Transient overvoltage and ESD surges protection
- Board space saving

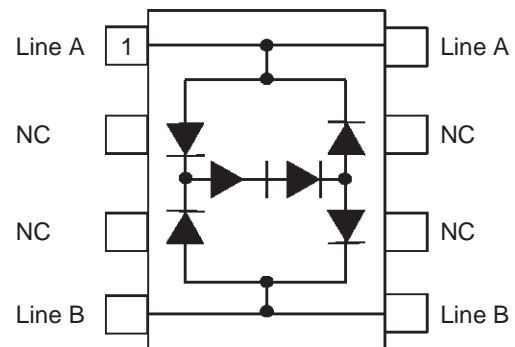
### COMPLIES WITH THE FOLLOWING STANDARDS :

CCITT K21	1 kV, 10/700 $\mu\text{s}$ (with serial resistance of 100 $\Omega$ ) see test circuit
CCITT K22	1 kV, 1.2/50 $\mu\text{s}$ (with serial resistance of 50 $\Omega$ )
IEC 1000-4-5	2 kV, 1.2/50 $\mu\text{s}$ (with serial resistance of 100 $\Omega$ )
IEC 1000-4-2	15 kV (air discharge) 8 kV (contact discharge)



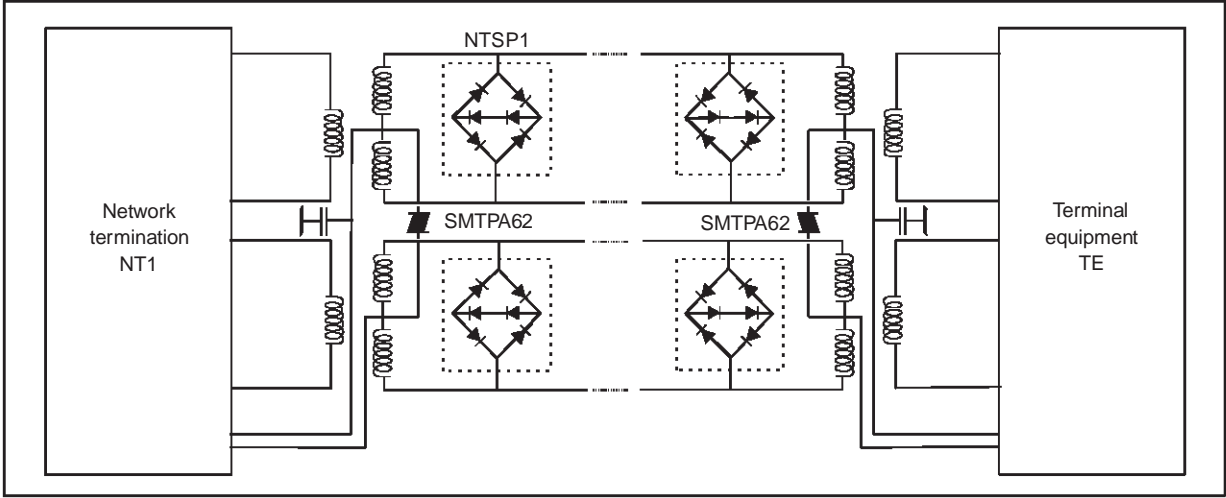
**SO8**

### FUNCTIONAL DIAGRAM



**NTSP1**

**APPLICATION EXAMPLE : typical connection diagram**



**ABSOLUTE MAXIMUM RATINGS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ )

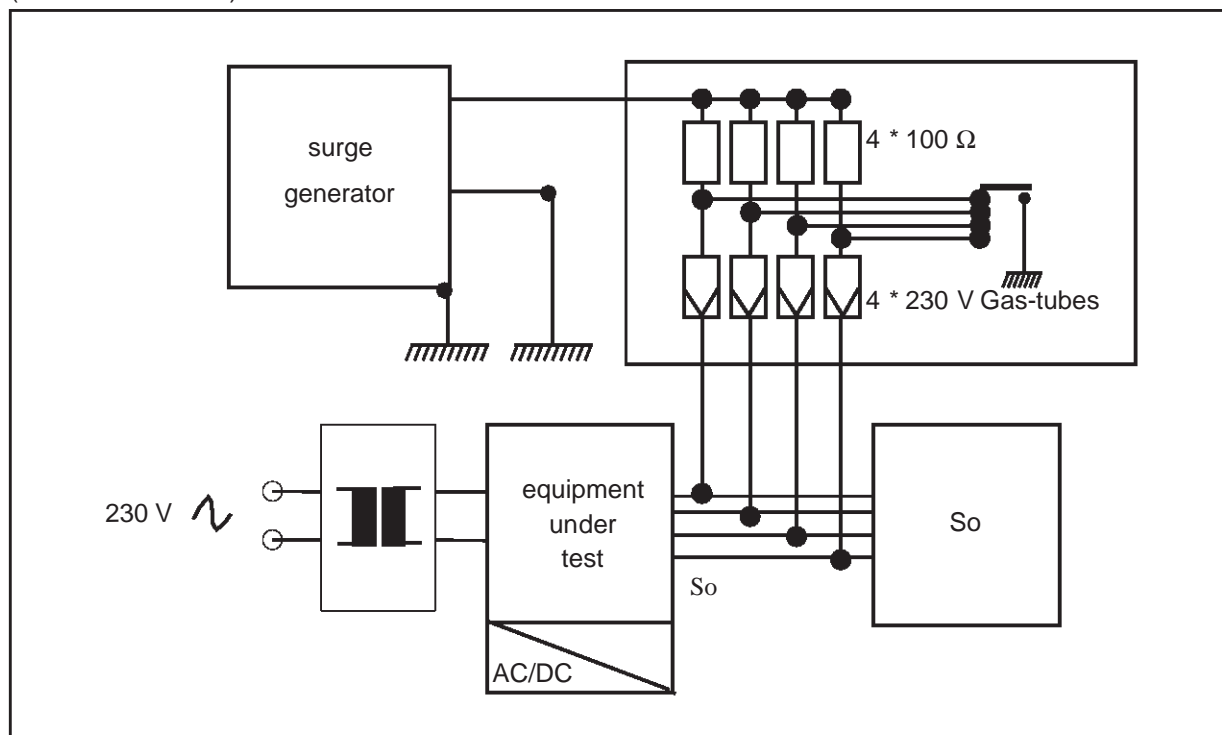
Symbol	Parameter	Test condition	Value	Unit
$I_{PP}$	Peak pulse current	1 kV 10/700 $\mu\text{s}$ (see test circuit) 2 kV 1.2/50 $\mu\text{s}$ (see test circuit)	10 20	A
$T_{stg}$	Storage temperature range		-40 to +150	$^{\circ}\text{C}$
$T_L$	Lead temperature for soldering during 10 s		260	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ )

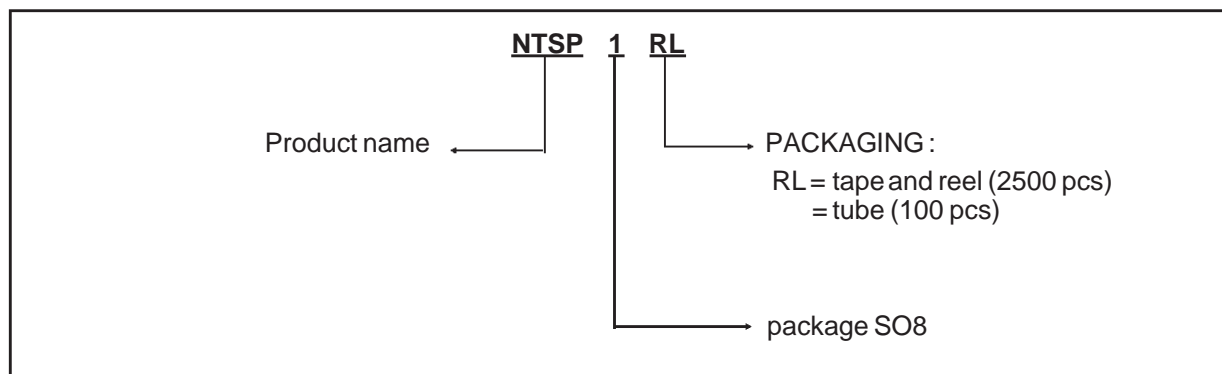
Type	Parameter	Test condition	Typ.	Max.	Unit
$V_{CL}$	Clamping voltage	1 mA, measured at 50 Hz at $I_{PP}$ , 10/700 $\mu\text{s}$ at $I_{PP}$ , 1.2/50 $\mu\text{s}$		3 15 25	V
$I_R$	Leakage current	$V_R = 1.2\text{ V}$ , $25\text{ }^{\circ}\text{C}$ $V_R = 1.2\text{ V}$ , $70\text{ }^{\circ}\text{C}$		1 5	$\mu\text{A}$ $\mu\text{A}$
$C$	Capacitance	$V_R = 1.2\text{ V}$ , $F = 1\text{ MHz}$	40		pF

# TEST CIRCUIT

(Transversal mode)



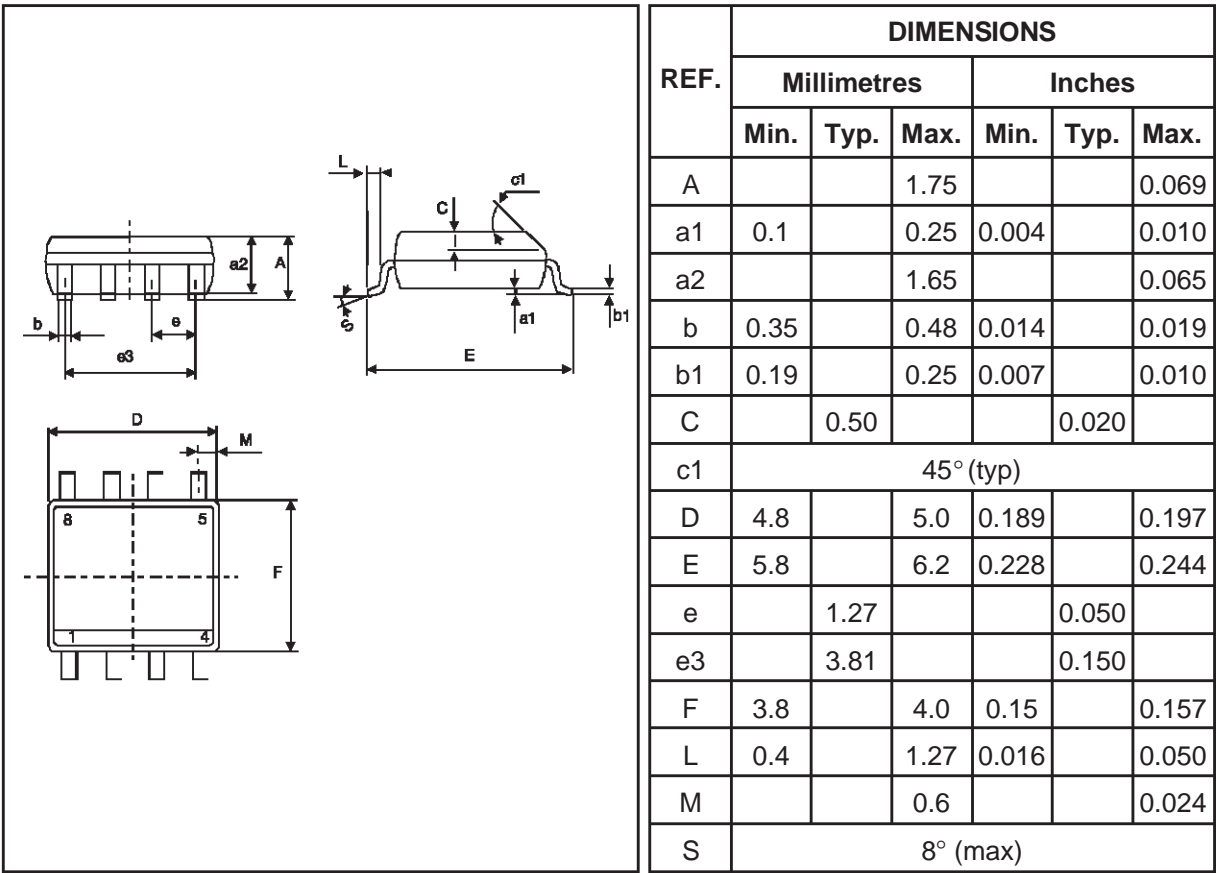
## ORDER CODE



NTSP1

PACKAGE MECHANICAL DATA

SO8 (Plastic)



Weight : 0.08g

MARKING

Type	Marking
NTSP1	NTSP1

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