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NTE4901 Surge Clamping, Overvoltage Transient Suppressor, Bidirectional

Description:

The NTE4901 is a bidirectional transient voltage suppressor diode in an axial lead type package designed for protecting integrated circuits, MOS, hybrids and other voltage-sensitive semiconductors and components.

Features:

- High Surge Capability
- Very Fast Clamping Time

Absolute Maximum Ratings:

Peak Pulse Power (1ms Exponential Pulse, Initial $T_J = +25^\circ\text{C}$, Note 1), P_P 1.5kW
 Power Dissipation ($T_A = +75^\circ\text{C}$, On Infinite heatsink), P_D 5W
 Non-Repetitive Surge Peak Forward Current (Initial $T_J = +25^\circ\text{C}$, $t = 10\text{ms}$), I_{FSM} 250A
 Operating Junction Temperature, T_J $+175^\circ\text{C}$
 Storage temperature Range, T_{stg} -65° to $+175^\circ\text{C}$
 Lead Temperature (During Soldering, 4mm from case, 10sec max.), T_L $+230^\circ\text{C}$
 Thermal Resistance, Junction-to-Case (On Infinite Heatsink), R_{thJ-C} 20°C/W

Note 1. For surges higher than the maximum value, the diode will present a short-circuit anode-cathode.

Electrical Characteristics: (Note 2, Note 3)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Stand-Off Voltage	V_{RM}	$I_{RM} = 300\mu\text{A}$	-	-	5	V
Breakdown Voltage	$V_{(BR)}$	$I_R = 1\text{mA}$, Note 4	6	-	-	V
Clamping Voltage	$V_{(CL)}$	1ms expo	-	-	7.1	V
			$I_{PP} = 1\text{A Max}$	-	-	7.5
Peak Pulse Current	I_{PP}	1ms expo	-	-	160	A
		8-20 μs expo	-	-	1340	A
Temperature Coefficient of $V_{(BR)}$			-	-	5.7	$10^{-4}/^\circ\text{C}$
Capacitance	C	$V_R = 0$, $f = 1\text{MHz}$	-	11000	-	pF

Note 2. The NTE4901 is bidirectional device; electrical characteristics apply in both directions.

Note 3. Clamping time (0V o $V_{(BR)}$): $t_{clamping} < 5\text{ns}$.

Note 4. Pulse Test: Pulse Width $\leq 50\text{ms}$, Duty Cycle $< 2\%$.

