

## NTE4828 thru NTE4868 Surge Clamping, Transient Overvoltage Suppressor Unidirectional

### Description:

The NTE4800 Series of high power transient suppressors are Silicon PN Junction devices designed for absorption of high voltage transients associated with power disturbances, switching and induced lighting effects. These devices were designed to be used on the output of switching power supplies and may be used to replace crowbar circuits.

They are able to withstand high levels of peak current while allowing a circuit breaker to trip or a fuse to blow before shorting. This will enable the user to reset the breaker or replace the fuse and continue operation. For this type of operation, it is recommended that a sufficient mounting surface be used for dissipating the heat generated by the device during the transient or overvoltage condition.

### Features:

- Glass Passivated Junction
- 5000W Peak Pulse Power Capability on 10/1000 $\mu$ s Waveform
- Repetition Rate (Duty Cycle): 0.05%
- Low Incremental Surge Resistance
- Fast Response Time

### Absolute Maximum Ratings: ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

Minimum Peak Pulse Power Dissipation (10/1000 $\mu$ s Waveform, Note 1), $P_{PPM}$ .....	5000W
Peak Pulse Current (10/1000 $\mu$ s Waveform, Note 1), $I_{PPM}$ .....	See Table
Steady State Power Dissipation ( $T_L = +75^\circ\text{C}$ , Lead Length .375" (9.5mm), Note 2), $P_{M(AV)}$ ...	8W
Peak Forward Surge Current, $I_{FSM}$ (8.3ms Single Half Sine-Wave Superimposed on Rated Load, Note 3) .....	400A
Instantaneous Forward Voltage ( $I_F = 100\text{A}$ , Note 3), $V_F$ .....	3.5V
Operating Junction Temperature Range, $T_J$ .....	$-55^\circ$ to $+175^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-55^\circ$ to $+175^\circ\text{C}$
Lead Temperature (During Soldering, .375" (9.5mm) Lead Length, 10sec ), $T_L$ .....	$+300^\circ\text{C}$

Note 1. Non-repetitive current pulse, derated above  $T_A = +^\circ\text{C}$ .

Note 2. Mounted on Copper Leaf area of 0.79in<sup>2</sup> (20mm<sup>2</sup>).

Note 3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

NTE Type Number	Maximum Reverse Stand Off Voltage (Volts)	Breakdown Voltage @ $I_T$ (Note 4) (Volts)				Maximum Ratings			Temperature Coefficient of BV%/°C
						Clamping Voltage @ $I_{pp}$ (1msec) (Volts)	Reverse Leakage Current @ $V_R$ ( $\mu\text{A}$ )	Peak Pulse Current (Amps)	
	$V_R$	$V_{BR}$							
		Min	Typ	Max	$I_T$ mA				
4828	15.0	16.7	–	20.4	5.0	24.4	10.0	206.00	0.094
4840	24.0	26.7	–	29.5	5.0	38.9	10.0	128.00	0.101
4846	30.0	33.3	–	36.8	5.0	48.4	10.0	103.00	0.103
4848	33.0	36.7	–	40.6	5.0	53.3	10.0	94.00	0.104
4850	36.0	40.0	–	44.2	5.0	58.1	10.0	85.00	0.104
4858	48.0	53.3	–	58.9	5.0	77.4	10.0	65.00	0.106
4868	64.0	71.1	–	78.6	5.0	103.0	10.0	49.00	0.108

Note 4.  $V_{(BR)}$  measured after  $I_T$  applied for 300ms.  $I_T$  = Square Wave Pulse or equivalent..

