

# ESD NOISE CLIPPING DIODE NNCD6.8ST to NNCD36ST

## ELECTROSTATIC DISCHARGE NOISE CLIPPING DIODE FOR CAN BUS APPLICATION

### DESCRIPTION

These products are the ESD (Electrostatic Discharge) Noise Clipping Diode that is designed to protect from both positive and negative noise.

NNCD18ST and NNCD36ST are suitable for ESD protection of CAN (Controller Area Network) bus.

### FEATURES

- Suitable to absorb positive and negative noise
- Comply with IEC61000-4-2 or higher
- Possible to high density mounting with small sized 3-pin Super Mini Mold Package (SC-70)

### APPLICATIONS

- ESD protection
- Surge absorbing

### ORDERING INFORMATION

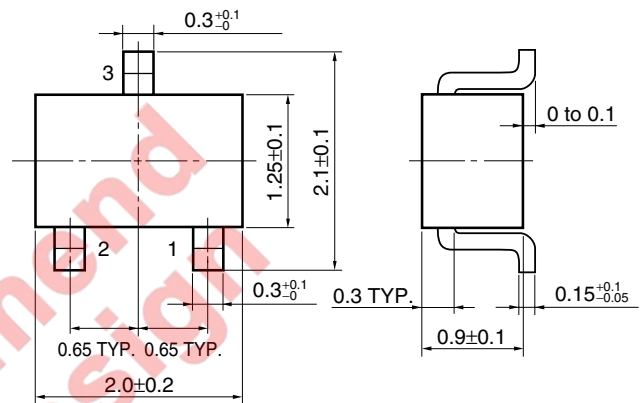
PART NUMBER	LEAD PLATING	PACKING	PACKAGE
NNCD6.8ST-T1-AT <small>Note</small>	Pure Sn (Tin)	Tape 3000 p/reel	3-pin Super Mini Mold (SC-70)
NNCD18ST-T1-AT <small>Note</small>			
NNCD27ST-T1-AT <small>Note</small>			
NNCD36ST-T1-AT <small>Note</small>			

**Note** Pb-free (This product does not contain Pb in the external electrode and other parts.)

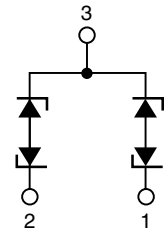
### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Parameter	Symbol	Rating	Unit	Remark
Power Dissipation	P	200	mW	When surface mounting on 50 mm x 50 mm x 1.6 mm P.C.B. (Glass Epoxy), refer to <b>Figure 1</b>
Surge Reverse Power	P <sub>RSM</sub>	85	W	t <sub>r</sub> = 10 μs, 1 pulse, refer to <b>Figure 4</b>
Junction Temperature	T <sub>j</sub>	150	°C	
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C	

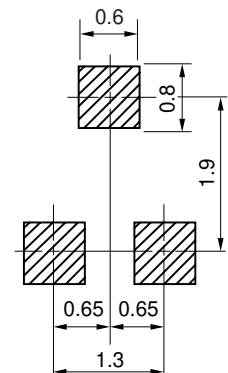
### PACKAGE DRAWING (Unit: mm)



### PIN CONFIGURATION



### RECOMMENDED MOUNT PAD (Unit: mm)



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**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)**

Type Number	Breakdown Voltage			Reverse Leakage		Capacitance		ESD Voltage	
	V <sub>BR</sub> (V) <sup>Note</sup>			I <sub>R</sub> (μA)		C <sub>t</sub> (pF)		(kV)	
	MIN.	MAX.	I <sub>Z</sub> (mA)	MAX.	V <sub>R</sub> (V)	TYP.	Condition	MIN.	Condition
NNCD6.8ST	6	8	5	0.5	3.5	50	V <sub>R</sub> = 0 V, f = 1 MHz	30	C = 150 pF, R = 330 Ω
NNCD18ST	16	20	5	0.1	12	15		30	
NNCD27ST	25	31	2	0.1	21	11		20	
NNCD36ST	33	39	2	0.1	27	9		15	

**Note** V<sub>BR</sub> is tested with pulse (40 ms).

**TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)**

Figure 1. POWER DISSIPATION vs. AMBIENT TEMPERATURE

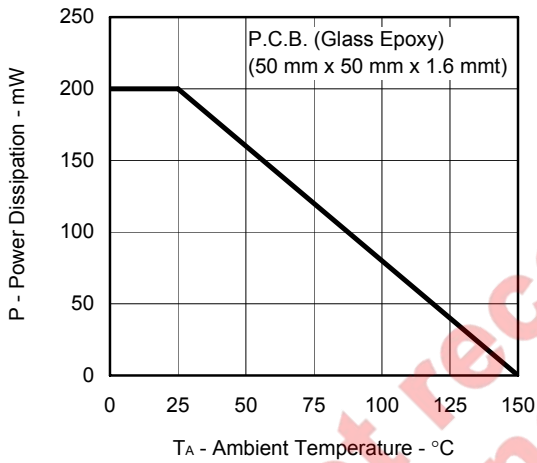


Figure 2. I<sub>T</sub> - V<sub>BR</sub> CHARACTERISTICS

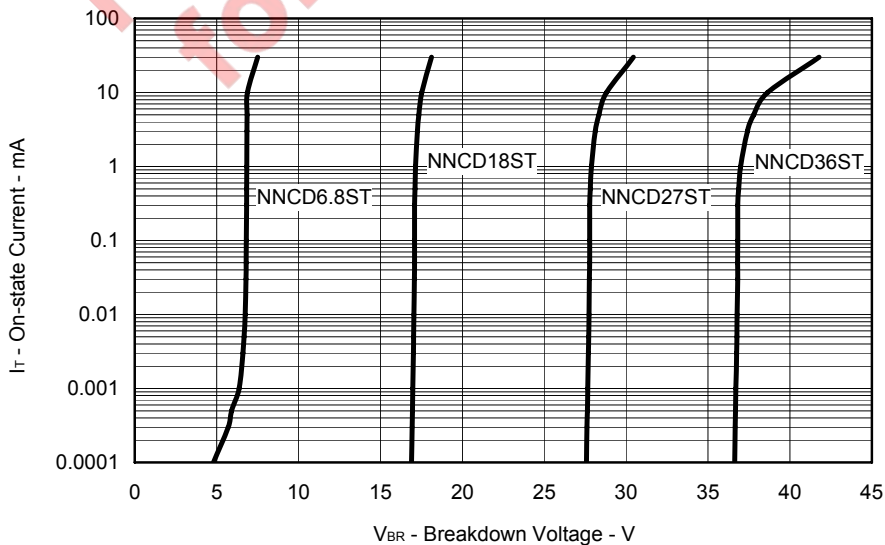


Figure 3. TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

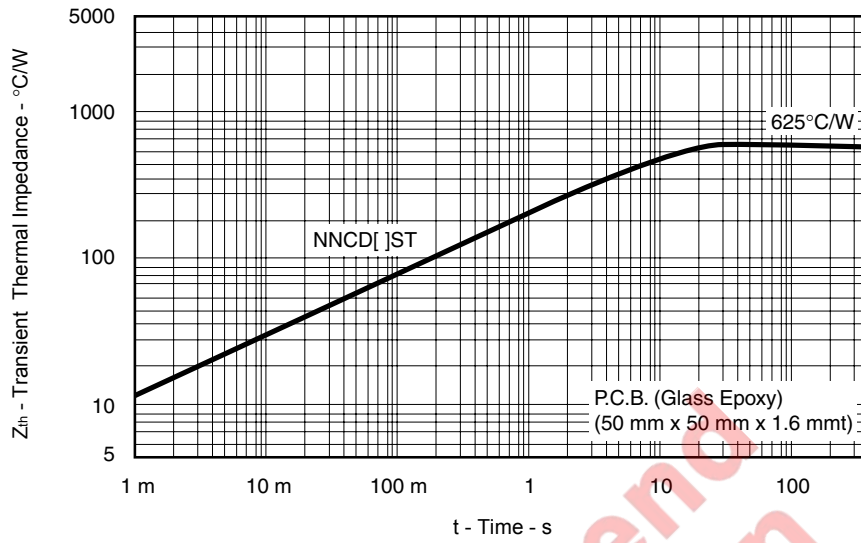
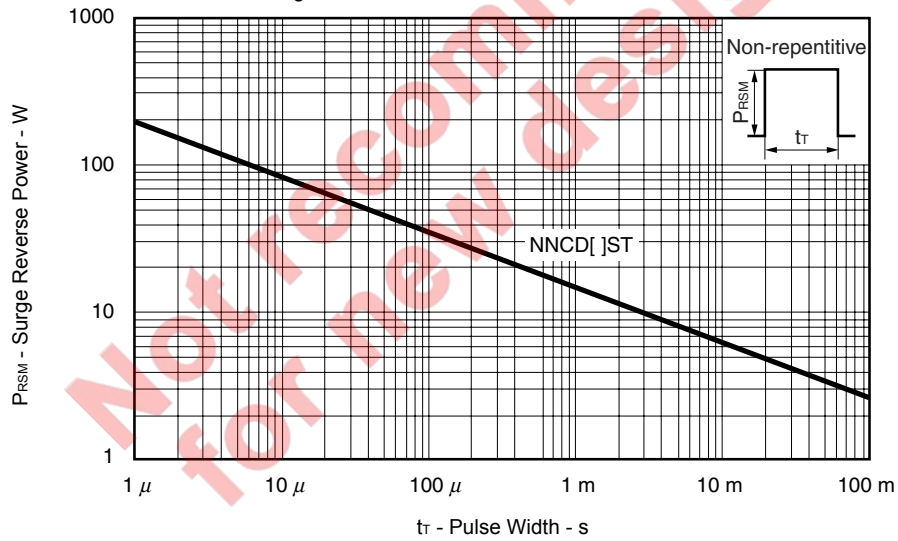


Figure 4. SURGE REVERSE POWER RATINGS



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