# **Bi-directional ESD Protection Diodes**

In recent years, the trend towards miniature technology acceleration in semiconductors brings with it the significant problem of noise suppression and ESD protection. With this situation in mind, NEC Electronics released two new product series, NNCD\*\*DT and NNCD\*\*ST, in addition to the previous NNCD product lineup. These new products are designed for use with miniature, lightweight and low-profile features. These devices are ideal for noise suppression and ESD protection with bidirectional features as well.

### **Features**

- Suitable for positive/negative surge noise absorption
- Bi-directional ESD protection
- IEC 61000-4-2, level 4 compliance
- High-density surface mounting possible with JEITA SC-70 and SC-76 package

### **Applications**

- ESD protection
- Surge noise absorption

#### **NNCD Series**



#### Product Specification Outline \*Under development

#### **Breakdown Voltage** Capacitance **ESD Voltage** Ct (pF) (kV) **Product Name** VBR (V) Conditions Conditions Min Тур. Тур. NNCD6.8MDT 6.8 8 30 NNCD18DT 18 20 30 NNCD20DT 20 20 30 NNCD27DT 27 15 $V_{R} = 0 V$ 15 C = 150 pF,f = 1 MHz R = 330 Ω NNCD36DT 36 12 12 NNCD6.8ST 8 50 30 NNCD18ST 20 20 30 NNCD27ST 31 15 15

## NEC Electronics Website: www.necel.com

### **Application Example**

• ECU (Electronic Control Unit)



#### **Maximum Ratings**

Parameter	Symbol	Rating	Unit	Remark
Power dissipation	Р	200	mW	
Reverse surge power	Prsm	85/2.2 <sup>Note</sup>	W	t⊤= 10 μs
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

Note Applicable to NNCD6.8MDT.

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