Normal Capacitance ESD Protection Diode

1 Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30-kV Contact Discharge
  - ±30-kV Air Gap Discharge
- Peak Reverse Working Voltage: 5.0V (Maximum)
- IO Capacitance:
  - 10 pF (Typical)
- DC Breakdown Voltage: 5.5V (Minimum)
- Low Leakage Current: 1μA (Maximum)
- Industrial Temperature Range: –55°C to +150°C
- Package DFN1006-2L

2 Applications

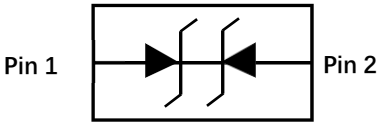
- End Equipment
  - TWS and Smart Wearable
  - TV and Monitors
  - Cellular handsets and accessories
  - Portable electronics
  - Communication systems
  - Computers and peripherals

3 Description

The SLEN25NCBH is a bidirectional ESD protection diode for power circuit protection. The SLEN25NCBH is rated to dissipate ESD strikes at the maximum level specified in the IEC 61000-4-2 international standard (Level 4).

The low dynamic resistance and low clamping voltage ensure system level protection against transient events.

4 Pin Configuration and Bottom View



DFN1006-2L

5 Device Information

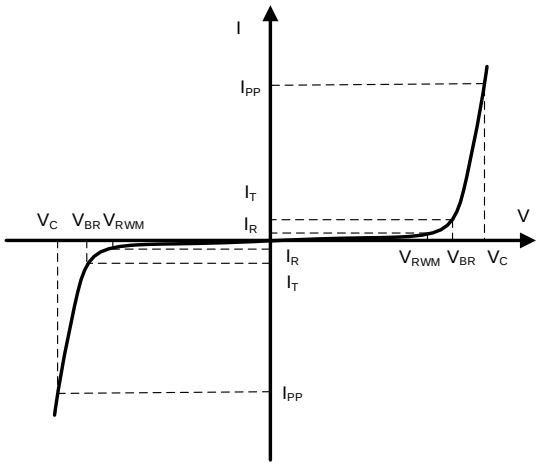
PART NUMBER	PACKAGE	BODY SIZE (NOM)
SLEN25NCBH	DFN1006-2L	1.00 mm x 0.60mm

6 Absolute maximum Ratings @25℃

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp=8/20μs)	P_{PP}	80	W
Peak Pulse Current (tp=8/20μs)	I_{PP}	8	A
Operating Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃
ESD Protection-Contact Discharge	V_{ESD}	±30	kV
ESD Protection-Air Discharge	V_{ESD}	±30	kV

7 Electronics Parameter Definiations

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance



8 Electrical characteristics (@25℃ unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T = 1mA	5.7			V
Reverse Leakage Current	I_R	V_{RWM} = 5V, T=25℃			1	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20μs			8.5	V
Clamping Voltage	V_C	I_{PP} = 8A, t_P = 8/20μs			10	V
Junction Capacitance	C_j	V_R=0V, f = 1MHz		10	15	pF

9 Typical Characteristics

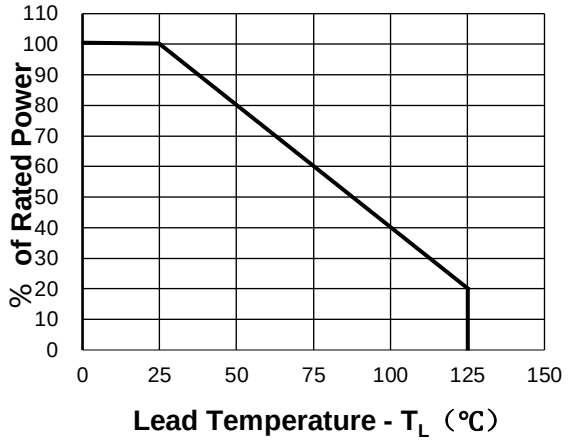


Fig 1. Power Derating Curve

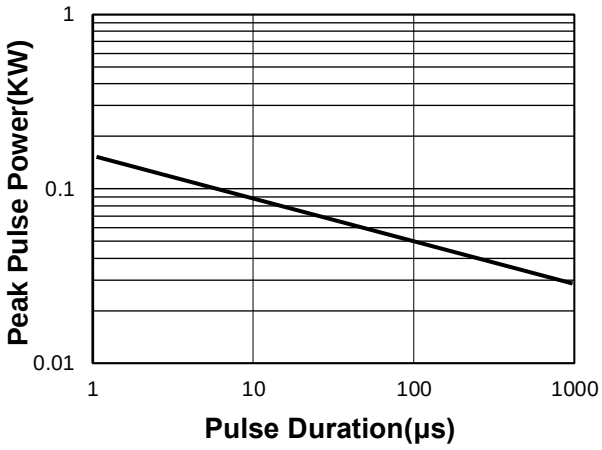


Fig 2. Peak Pulse Power vs. Pulse Time

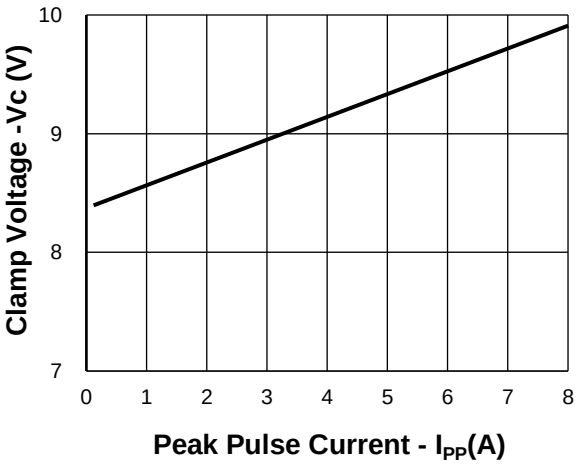


Fig 3. Clamping Voltage vs. Peak Pulse Current

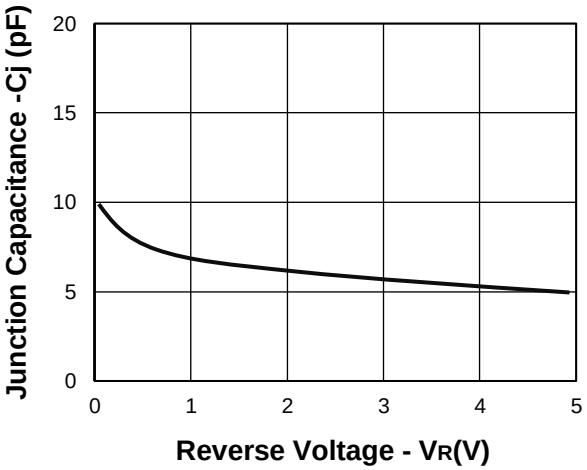


Fig 4. Junction Capacitance vs. Reverse Voltage

10 Product dimension

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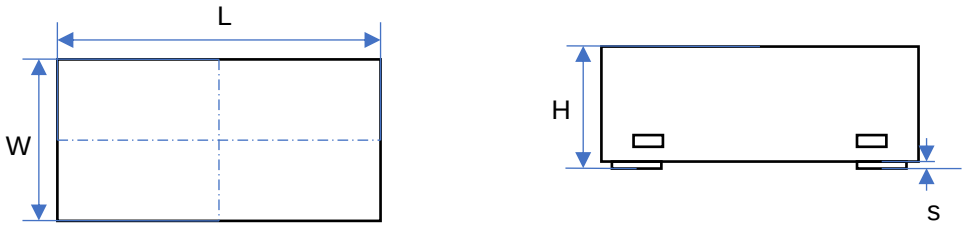
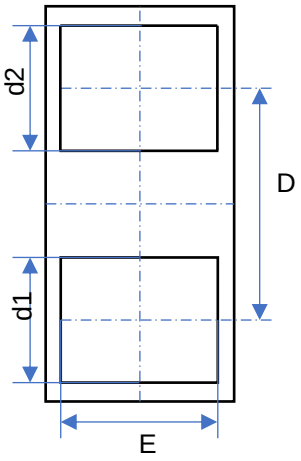
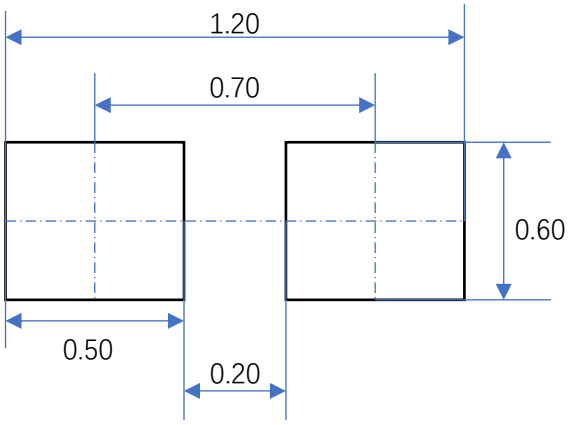


DIM	UNITS（mm）		
	MIN.	TYP.	MAX.
L	0.95	1.00	1.08
W	0.55	0.60	0.68
H	0.39	-	0.50
s	0.00	0.02	0.05
D	0.60	0.65	0.70
E	0.40	-	0.60
d1	0.20	-	0.30
d2	0.20	-	0.30



11 PCB Layout Footprints



12 Ordering Information

Part Number	Packaging	Reel Size
SLEN25NCBH	10000/Tape & Reel	7 inch