GESD5B04JDO

Bi-directional ESD Protection Array

DESCRIPTION

GESD5B04JDO is a four channels low capacitance Bi-directional ESD protection array, GESD5B04JDO is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD) Level 4 (±15KV air, ±8KV contact discharge), IEC61000-4-4(electrical fast transient-EFT) (40A,5/50ns), very fast charged device model (CDM) ESD and cable discharge event (CDE) etc.

GESD5B04JDO uses ultra-small DFN2510 package. Each GESD5B04JDO device can protect four high-speed data lines. The combined features of low capacitance, ultra-small size and high ESD robustness make GESD5B04JDO ideal for high-speed data ports and high-frequency line applications. The low clamping voltage of the GESD5B04JDO guarantees a minimum stress on the protected IC.

FEATURES

✧Transient protection for high-speed data lines
IEC 61000-4-2(ESD) ±30KV(Contact)
IEC 61000-4-2(ESD) ±30KV(Air)
IEC 61000-4-4(EFT) 40A (5/50ns)
Cable Discharge Event (CDE)
✧Package optimized for high-speed lines
✧Ultra-small package(2.5mm*1.0mm*0.5mm)
✧Protects four data lines
✧Low leakage current
✧Low clamping voltage

MACHANICAL DATA

✧DFN2510 package
✧Flammability Rating: UL 94V-0
✧High temperature soldering guaranteed: 260℃/10s
✧Reel size: 7 inch

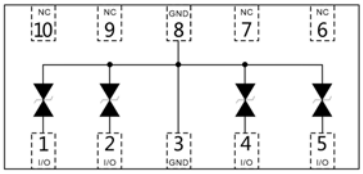
ORDERING INFORMATION

✧Device: GESD5B04JDO
✧Package: DFN2510
✧Marking: 5B04O
✧Material: Halogen free& RoHS compliant
✧Packing: Tape & Reel
✧Quantity per reel: 3,000pcs

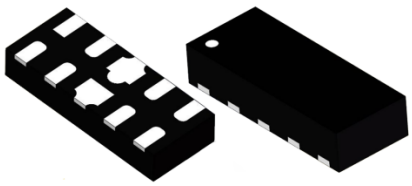
APPLICATIONS

✧PD Charger or Adapter
✧USB Type-C
✧High-speed data lines

PIN CONFIGURATION



PACKAGE OUTLINE



ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Unit
P_{PP}	Peak Pulse Power (8/20μs)	90	W
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	±30 ±30	kV
T_{OPT}	Operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA Any I/O pin to GND	5.6			V
I_R	Reverse Leakage Current	V_{RWM} = 5V Any I/O pin to GND			0.5	μA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs Any I/O pin to GND			8.5	V
		I_{PP} = 6A, t_p = 8/20μs Any I/O pin to GND			15	V
C_{ESD}	Parasitic Capacitance	V_R = 0V, f = 1MHz Between I/O and GND			15	pF

Note: I/O are pin 1/2/4/5; GND are pin 3/8; pin 6/7/9/10 are NC and can be connected with any pin.

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20μs Waveform per IEC61000-4-5

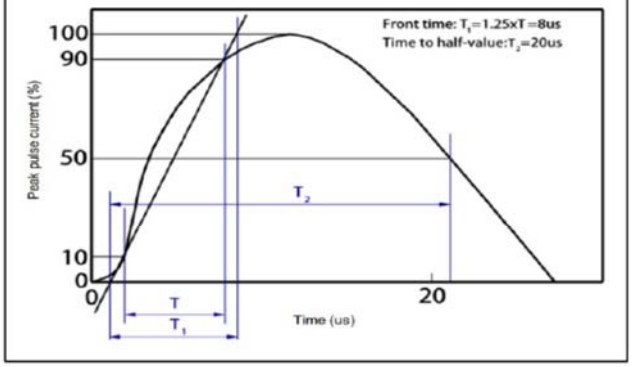


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

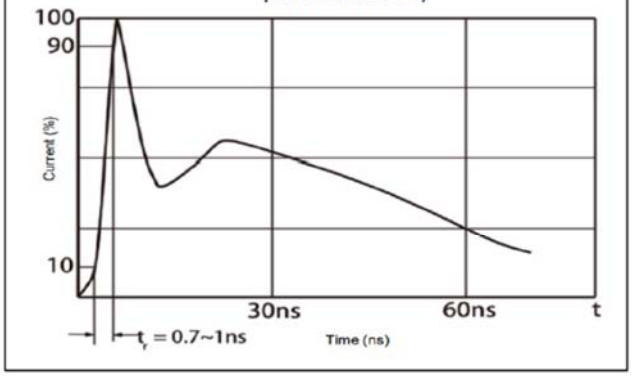


Fig 3 Voltage vs Capacitance

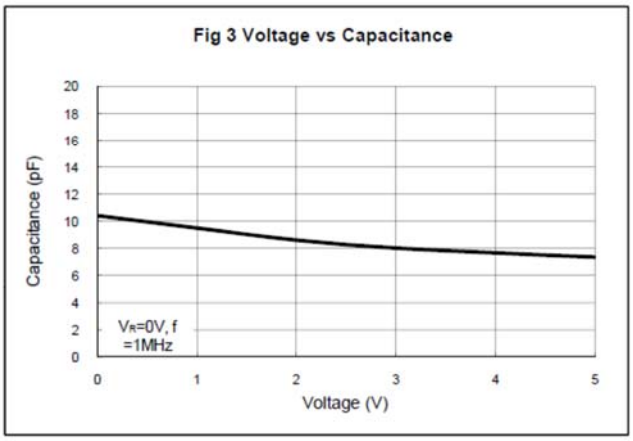
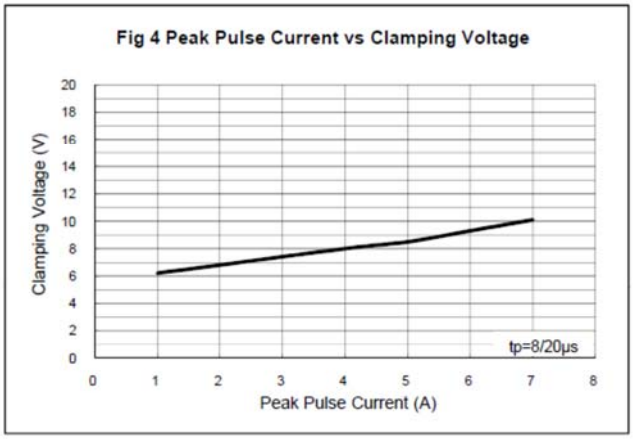
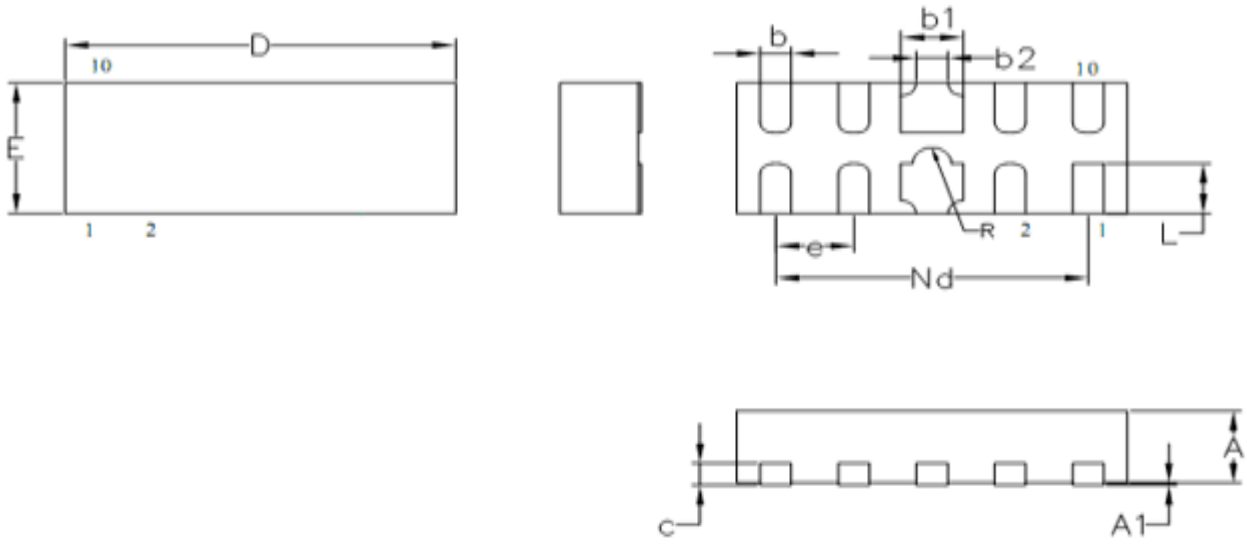


Fig 4 Peak Pulse Current vs Clamping Voltage



DFN2510 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions (mm)		
	Min.	Nom.	Max.
D	2.45	2.50	2.55
E	0.95	1.00	1.05
b1	0.35	0.40	0.45
b2		0.20REF	
b	0.15	0.20	0.25
L	0.33	0.38	0.43
Nd		2.00BSC	
e		0.50BSC	
R	0.10	0.125	0.15
A	0.45	0.50	0.55
c		0.15REF	
A1	0.00	-	0.05