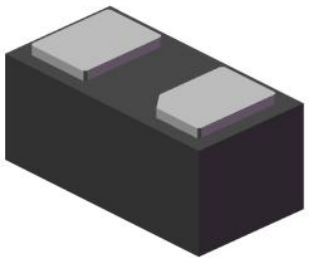
Technical Data
Data Sheet N2162, REV.-

RoHS HF

eGuard0551P Ultra Low Capacitance TVS Diode Array



DFN1006-2L

Description

The eGuard0551P is ultra low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).
The eGuard0551P has a maximum capacitance of 0.50pF . This means it can be used on circuits operating in excess of 5GHz without signal attenuation. They can be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 (±15kV air, ±8kV contact discharge).
These devices are in a small 2-pin DFN1006 package. They are designed for use in applications such as cellular phones and digital video interfaces.

Circuit Diagram

Applications

- Display Port
- MHL/MDDI
- LVDS Interfaces
- USB 2.0
- eSATA Interfaces

Features

- Transient protection for high-speed data lines to IEC 61000-4-2 (ESD) ±17kV (air), ±17kV (contact) IEC 61000-4-4 (EFT) 40A (5/50ns)
- Ultra-small package(1.0×0.6×0.5mm)
- Protects one data or I/O line
- Low capacitance (0.5pF)
- Low ESD clamping voltage
- Low operating voltage: 5.0V
- This is a Halogen Free Device

Mechanical Characteristics

- DFN1006-2L package
- RoHS/WEEE Compliant
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel per EIA 481

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Maximum Ratings

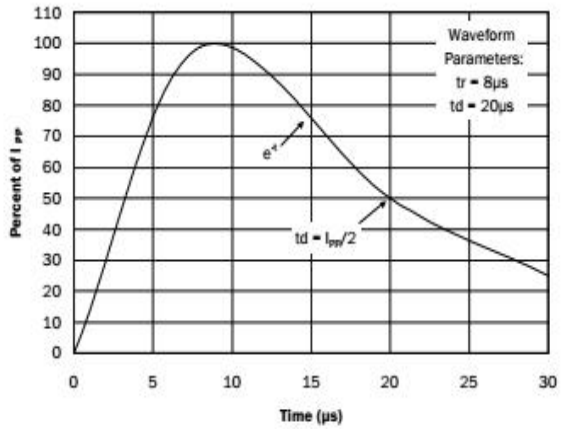
Characteristics	Symbol	Max.	Units
Peak Pulse Power (tp=8/20us)	P_{PK}	80	Watts
Peak Pulse Current (tp=8/20us)	I_{PP}	4	A
ESD per IEC61000-4-2 (air) ESD per IEC61000-4-2 (contact)	V_{ESD}	±17 ±17	KV
Operating Temperature	T_J	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Electrical Characteristics(T=25℃ unless otherwise specified)

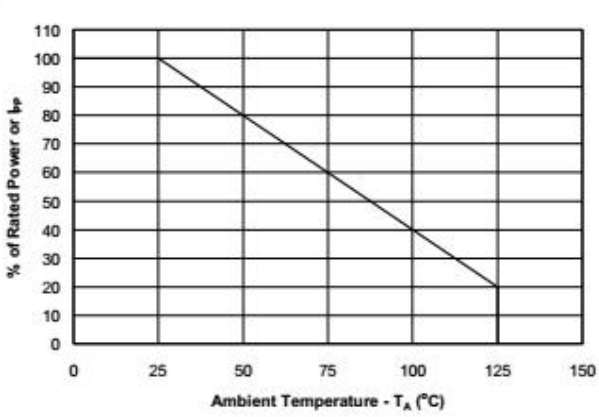
Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}		-	-	5	V
Reverse Breakdown Voltage	V_{BR}	@ I_t=1mA	6	-	11	V
Reverse Leakage Current	I_R	@V_{RWM} = 5V, T = 25 ℃	-	-	0.1	μA
Clamping Voltage	V_C	@I_{PP} = 1A, tp=8/20μs	-	-	15	V
Clamping Voltage	V_C	@I_{PP} = 4A, tp=8/20μs	-	-	20	V
Junction Capacitance	C_j	@V_R = 0V, f_{SIG} = 1MHz	-	-	0.5	pF

Ratings and Characteristics Curves

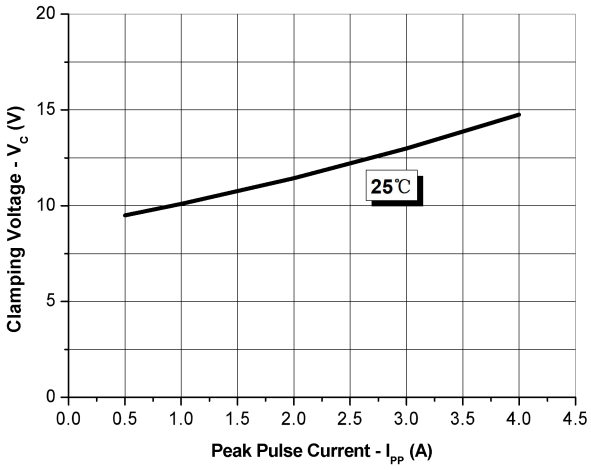
Pulse Waveform

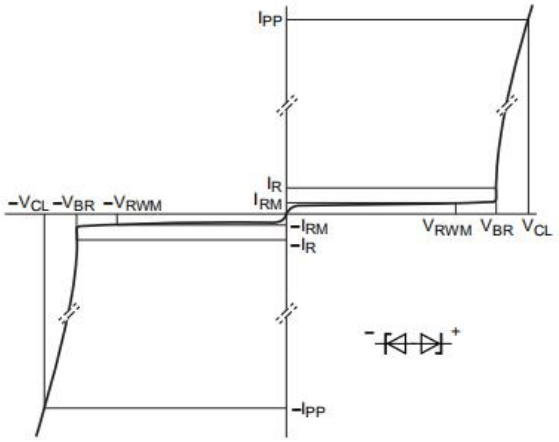


Power Derating Curve



Clamping Voltage vs. Peak Pulse Current





V-I characteristics for a bidirectional ESD protection diode

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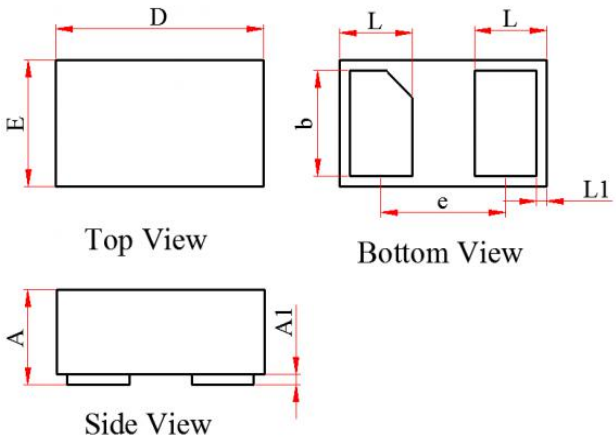
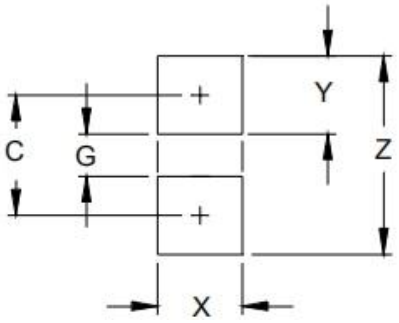
Mechanical Dimensions



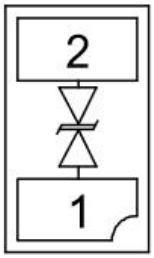
Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	--	0.400	0.500	--	0.016	0.020
A1	--	--	0.075	--	--	0.003
D	1.000	0.950	1.050	0.039	0.037	0.041
E	0.600	0.550	0.650	0.024	0.022	0.026
b	0.500	0.450	0.550	0.020	0.018	0.022
L	0.350	0.300	0.400	0.014	0.012	0.016
L1	0.050 REF			0.002 REF		
e	0.600 BSC			0.024 BSC		

Recommended foot print for the layout



SYMBOL	Inches	Millimeters
C	0.033	0.85
G	0.012	0.30
X	0.024	0.60
Y	0.022	0.55
Z	0.055	1.40

Pin Configuration



Marking Diagram

Ordering Information:

Device	Package	Shipping
eGuard0551P	DFN1006-2L	10000 pcs/reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

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