

GSE0528

Ultra-low Capacitance Dual Bidirectional ESD Protection Diodes

Product Description

The GSE0528 is designed to protect sensitive electronics from damage or latch up due to ESD, lightning, and other voltage induced transient events.

The DFN1006-3P package type is provided for easy PCB layout.

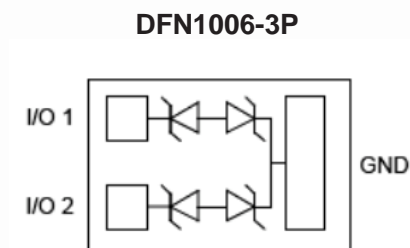
Features

- Two lines ESD protection diodes
- Stand-off Voltage : 5.0V
- 2.8pF Low capacitance for variety I/O ports
- Response time < 1ns
- Low Clamping Voltage
- Low Leakage current
- Solid-state silicon avalanche technology
- IEC61000-4-2(ESD) ±15kV (air), ±8kV (contact)
- Meets MSL 1 Requirements
- RoHS Compliant, 100%Pb & Halogen Free

Applications

- High Speed Line :USB1.1 /2.0, VGA, DVI
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Portable instrumentation
- Peripherals

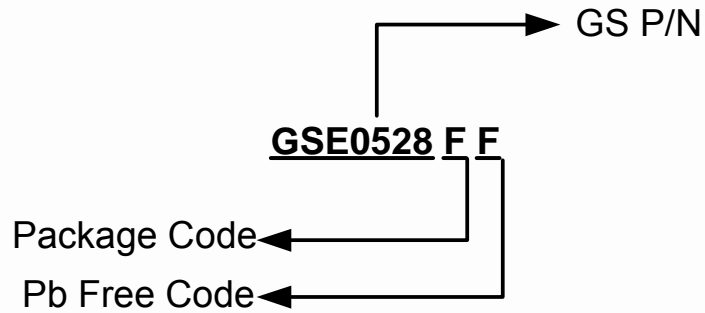
Packages & Pin Assignments



Marking & Orientation

Part Number	Package	SPQ	Marking
GSE0528FF	DFN1006-3P	5000 pcs	GA

Ordering Information



Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

Symbol	Parameter	Typical	Unit
P _{pk}	Peak Pulse Power (t _p =8/20μs)	125	W
V _{PP}	ESD Per IEC61000-4-2 (Air)	±15	kV
	ESD Per IEC61000-4-2 (Contact)	±8	kV
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _L	Soldering Temperature, t(max)=10s	260	°C

Note : Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

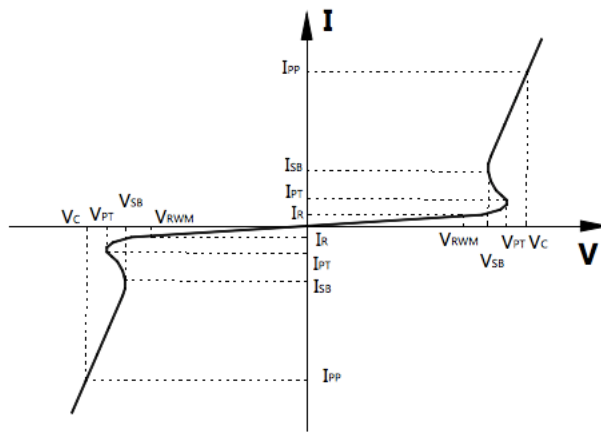
Electrical Characteristics

(T_A=25°C Unless otherwise noted)

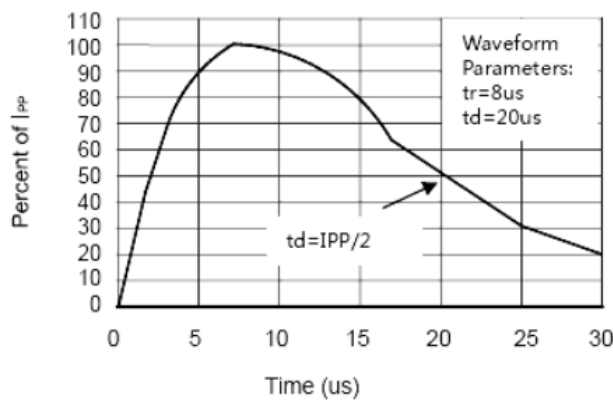
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _{RWM}	Reverse Stand-off Voltage	Between I/O & GND Pin			5.0	V
V _{BR}	Reverse Breakdown Voltage	I _R =1mA Between I/O & GND Pin	6.0		12	V
R _{dyn}	Resistance	-	0.9			Ω
R _{DIF}	Differential Resistance	I _R =1mA Between I/O & GND Pin			100	Ω
I _R	Reverse Leakage Current	V _{RWM} =5V Between I/O & GND Pin			80	nA
V _C	Clamping Voltage	I _{PP} =1A (8/20μs)	6.5			V
C _J	Junction Capacitance	V _R =0V, f=1MHz		2.8	3.0	pF
		V _R =5V, f=1MHz		1.7		pF

Electrical Parameter

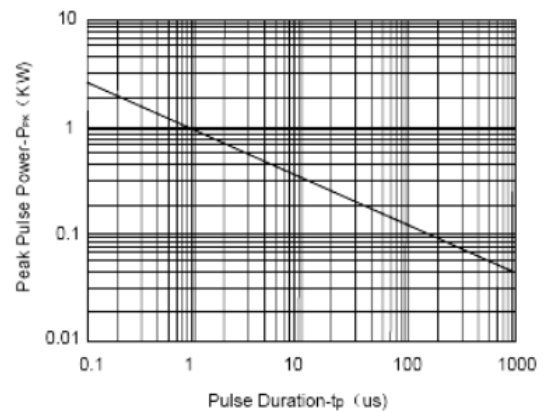
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{PT}	Punch-Through Voltage@ I_{PT}
V_{SB}	Snap-Back Voltage@ I_{SB}
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



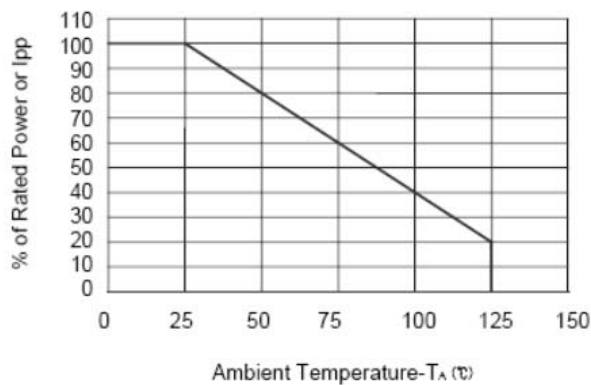
Typical Characteristics



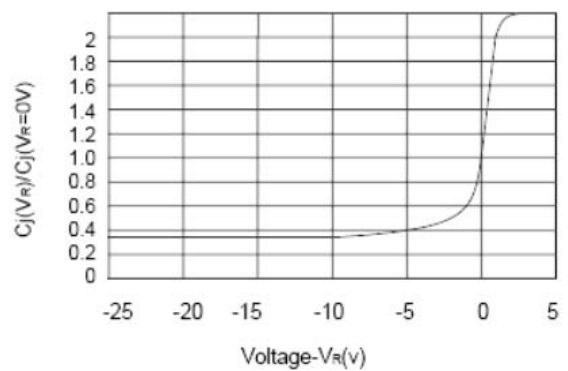
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



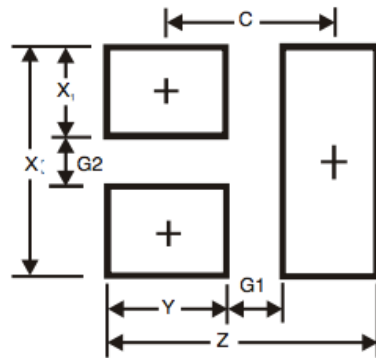
Power Derating Curve



Junction Capacitance vs. Reverse Voltage

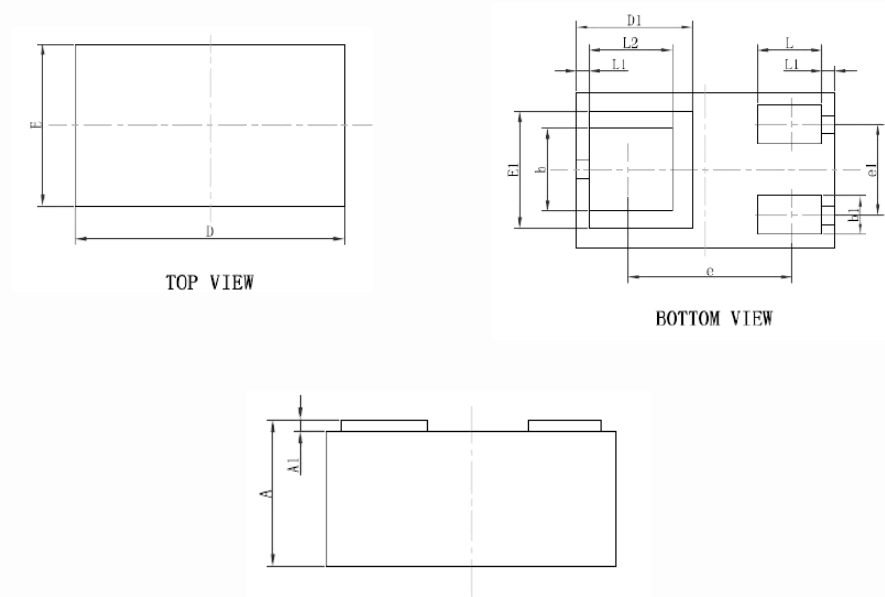
Pad Pattern Design

DFN1006-3P



Symbol	Millimeters
C	0.7
G1	0.3
G2	0.2
X	0.7
X1	0.25
Y	0.4
Z	1.1

Package Dimension










Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.450	0.550	0.018	0.022
A1	0.010	0.100	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450REF.		0.018REF.	
E1	0.450REF.		0.018REF.	
b	0.270	0.370	0.011	0.015
b 1	0.100	0.200	0.004	0.008
e	0.635REF.		0.025REF.	
e 1	0.300	0.400	0.012	0.016
L	0.200	0.300	0.008	0.012
L1	0.050REF.		0.002REF.	
L2	0.270	0.370	0.011	0.015



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CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd NeiHu District Taipei City 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
	sales_twn@gs-power.com

Shenzhen Branch(China)	
	1113 B Building, Happiness Washington, Baoan Nan Road, Luohu District, Shenzhen City, China
	0755-22208941
	sales_cn@gs-power.com

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587