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

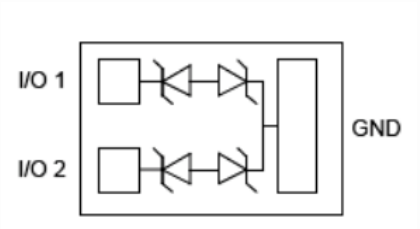
- Two lines ESD protection diodes
- Stand-off Voltage : 5.0V
- 2.8pF Low capacitance for variety I/O ports
- Response time < 1ns
- Low Clamping Voltage
- Low Leakage current
- Solid-state silicon avalanche technology
- IEC61000-4-2(ESD) ±15kV (air), ±8kV (contact)
- Meets MSL 1 Requirements
- RoHS Compliant,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

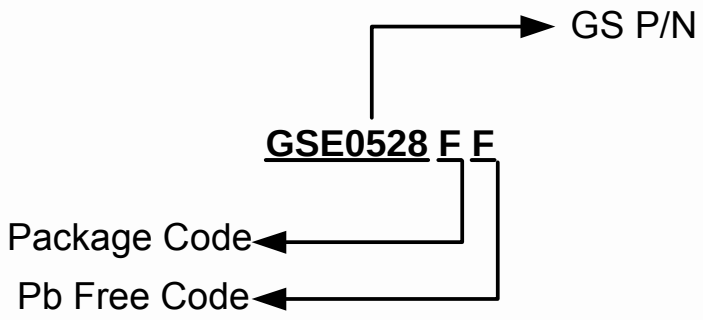
DFN1006-3P



Marking & Orientation

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

Ordering Information



Absolute Maximum Ratings

(T_A=25ºC 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	ºC
T_{STG}	Storage Temperature Range	-55 to +150	ºC
T_L	Soldering Temperature, t(max)=10s	260	ºC

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.

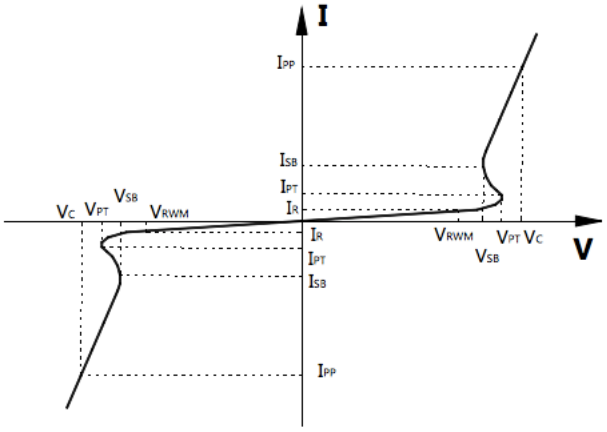
Electrical Characteristics

(T_A=25ºC Unless otherwise noted)

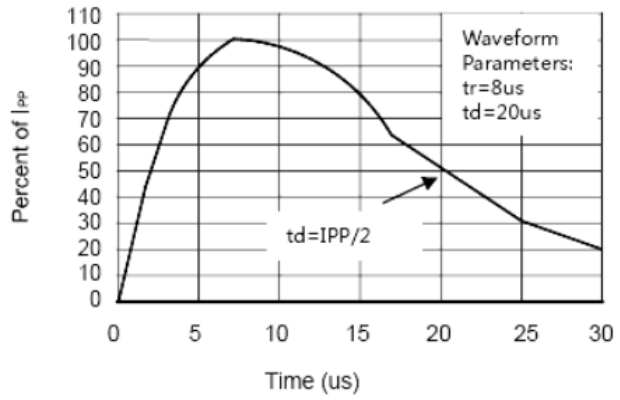
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{RWM}	Reverse Stand-off Voltage	Between I/O & GND Pin			5.0	V
V_{BR}	Reverse Breakdown Voltage	I_R=1mA Between I/O & GND Pin	6.0		12	V
Rdyn	Resistance	-	0.9			Ω
R_{DIF}	Differential Resistance	I_R=1mA Between I/O & GND Pin			100	Ω
I_R	Reverse Leakage Current	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

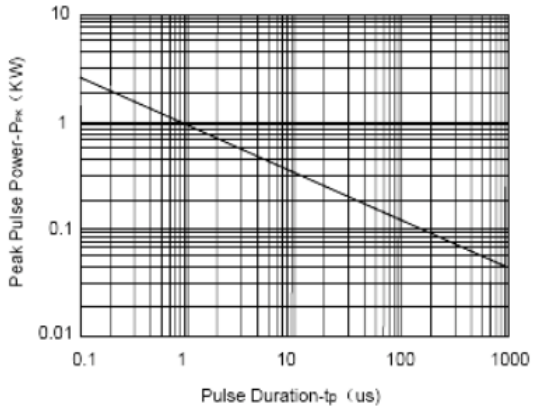
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{PT}	Punch-Through Voltage@ I_{PT}
V_{SB}	Snap-Back Voltage@ I_{SB}
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



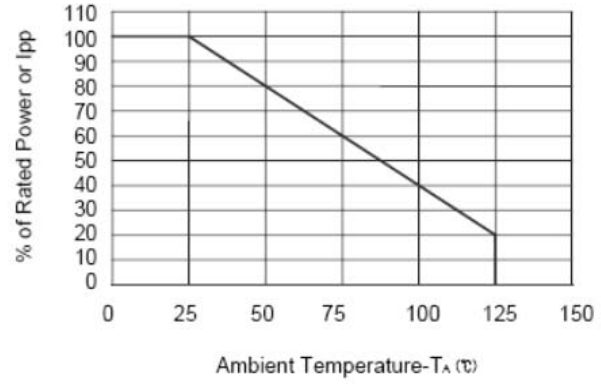
Typical Characteristics



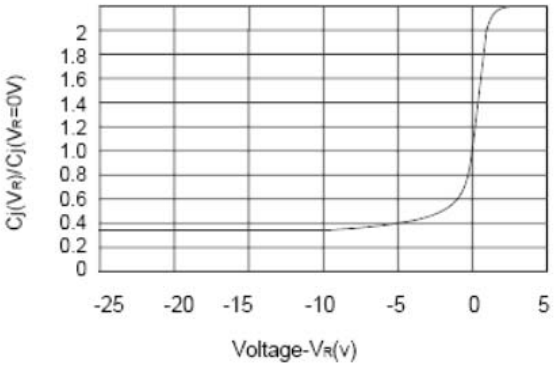
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



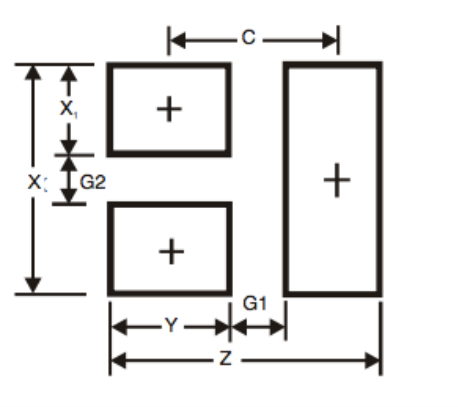
Power Derating Curve



Junction Capacitance vs. Reverse Voltage

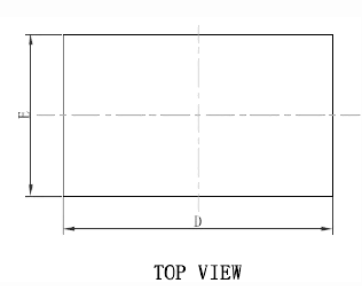
Pad Pattern Design

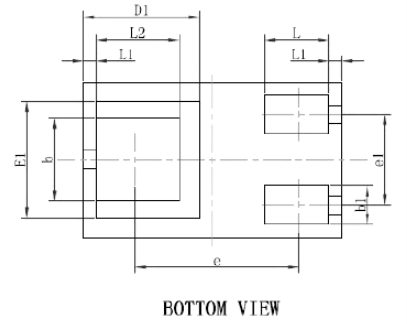
DFN1006-3P

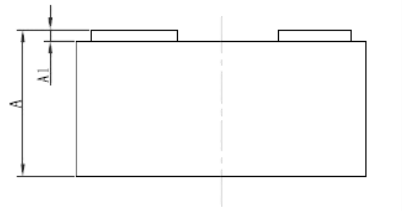


Symbol	Millimeters
C	0.7
G1	0.3
G2	0.2
X	0.7
X1	0.25
Y	0.4
Z	1.1

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
b1	0.100	0.200	0.004	0.008
e	0.635REF.		0.025REF.	
e1	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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