

GSE0524C

Ultra Low Capacitance 4-Channel ESD Protection Array

Product Description

The GSE0524C 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 overvoltage caused by ESD(electrostatic discharge), CDE(Cable Discharge Events), and EFT(electrical fast transients).

The GSE0524C is idea to protect high speed data lines. SOT-23-6L package type is provided for easy PCB layout.

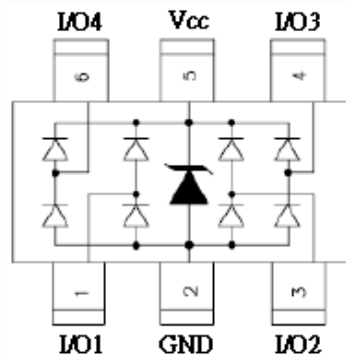
Features

- Protects up to four I/O lines (Data lines)
- Stand-off voltage : 5.0V
- Max. peak pulse power : $P_{PP}=120W$ at $t_P=8/20\mu s$
- Low capacitance : 0.3pF typical (I/O to I/O)
- Low clamping voltage
- IEC 61000-4-2, level 4 (ESD), $> \pm 15KV$ (air) ; $> \pm 8KV$ (contact)
- RoHS Compliant, 100%Pb & Halogen Free
- Device Meets MSL 1 Requirements

Applications

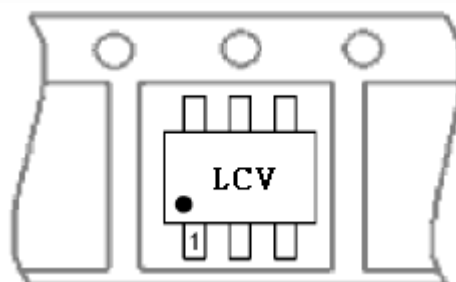
- High Definition Multimedia Interface (HDMI)
- Digital Visual Interface (DVI)
- Monitors and Flat Panel Displays
- USB 2.0
- USB OTG
- IEEE 1394 Fire wire Port

Packages & Pin Assignments

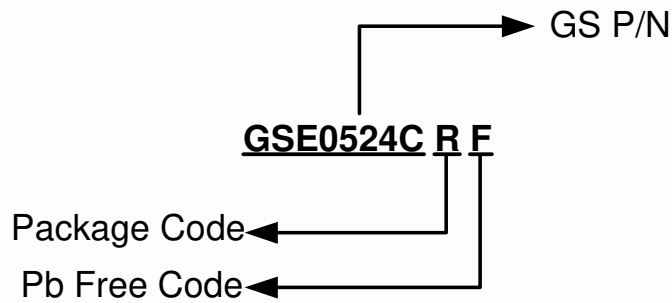


SOT-23-6L

Marking Information



Ordering Information



Part Number	Package	Quantity
GSE0524CRF	SOT-23-6L	3000 PCS

Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

Symbol	Parameter	Typical	Unit
P _{pk}	Peak Pulse Power (t _p =8/20μs)	120	W
I _{pp}	Peak Pulse Current (t _p =8/20μs)	5	A
V _{ESD1}	ESD per IEC 61000-4-2 (air)	±15	KV
V _{ESD2}	ESD per IEC 61000-4-2 (contact)	±8	KV
T _J	Operating Junction Temperature Range	-55 to +125	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _L	Soldering Temperature, t(max)=10s	260	°C

Electrical Characteristics

(T_A=25°C Unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _{RWM}	Reverse Stand-off Voltage	Any I/O Pin to GND			5.0	V
V _{BR}	Reverse Breakdown Voltage	I _R =1mA	6.0			V
I _R	Reverse Leakage Current	V _{RWM} =5V			1.0	μA
V _{C1}	Clamping Voltage	I _{PP} =1A, t _p =8/20μs, Any I/O Pin to GND			15	V
V _{C2}	Clamping Voltage	I _{PP} =5A, t _p =8/20μs, Any I/O Pin to GND			24	V
C _{J1}	Junction Capacitance	V _R =2.5V, f=1MHz, Between I/O Pins		0.3		pF
C _{J2}	Junction Capacitance	V _R =2.5V, f=1MHz, Any I/O Pin to GND		0.6		pF

Typical Characteristics

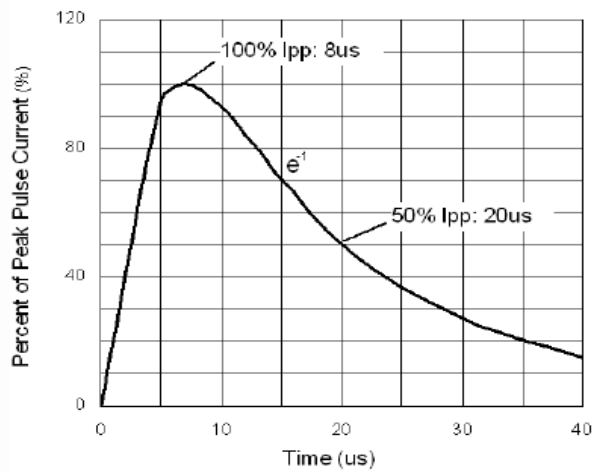


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

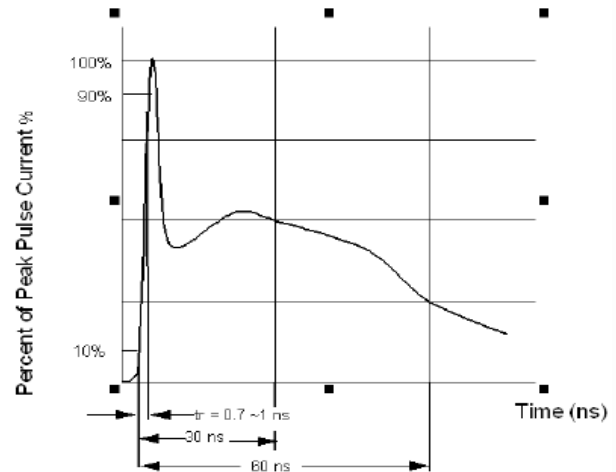


Figure 2. ESD pulse waveform according to IEC 61000-4-2

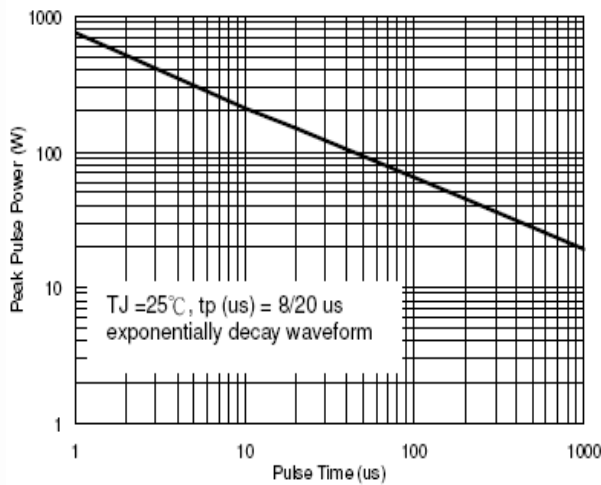


Figure 3. Power Dissipation versus Pulse Time

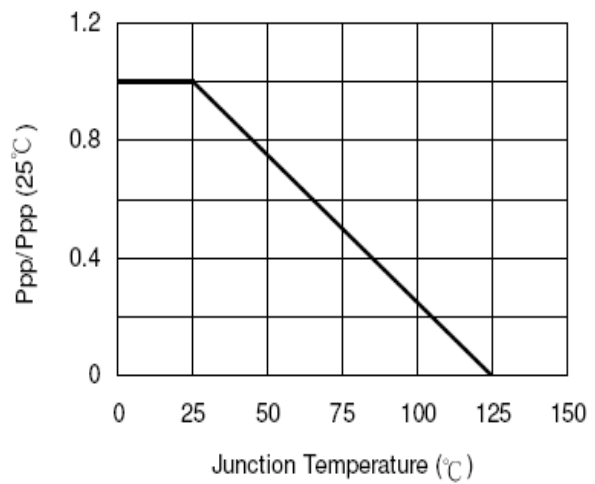


Figure 4. Peak pulse power versus TJ

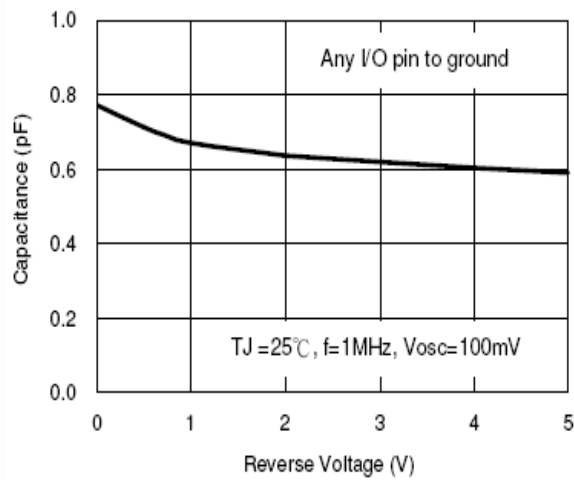


Figure 5. Typical Junction Capacitance

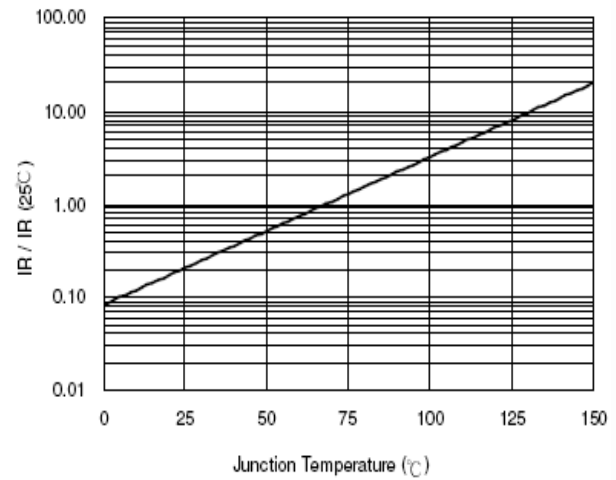


Figure 6. Reverse Leakage Current versus TJ

Typical Characteristics (continue)

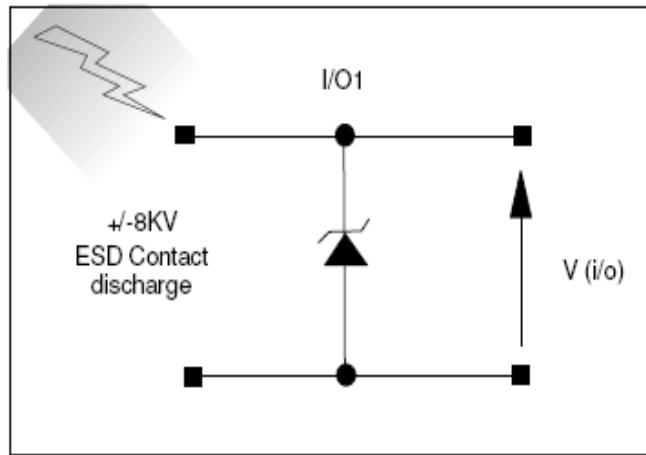


Figure 7. ESD Test Configuration

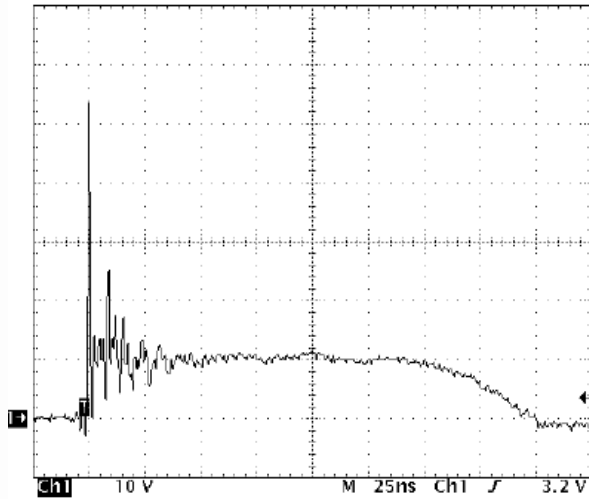


Figure 8. Clamped +8 kV ESD voltage waveform

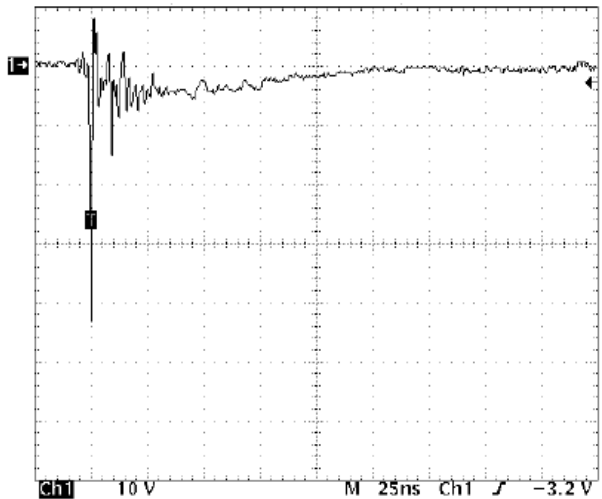
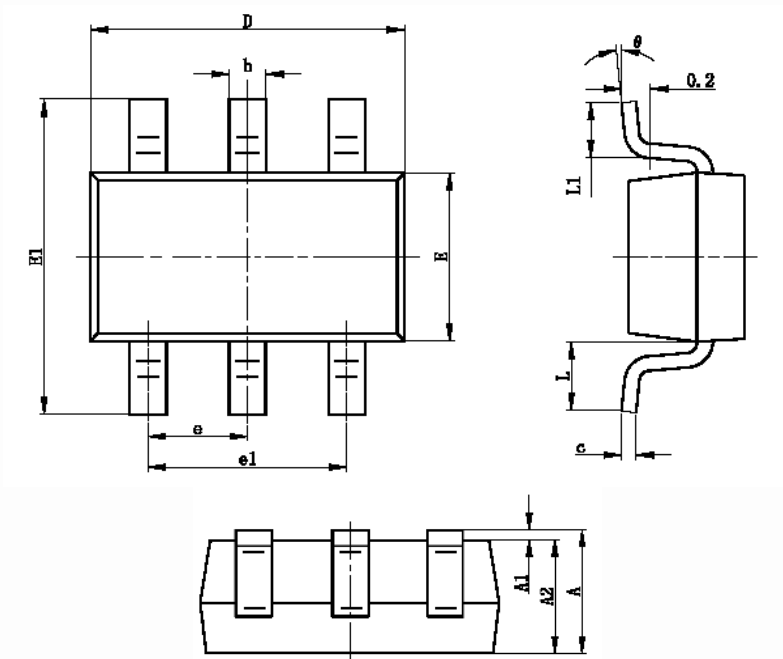


Figure 9. Clamped -8 kV ESD voltage waveform

Package Dimension

SOT-23-6L











Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.450	0.035	0.057
A1	0.000	0.150	0.000	0.006
A2	0.900	1.300	0.035	0.051
b	0.300	0.500	0.012	0.020
c	0.080	0.220	0.003	0.009
D	2.450	3.000	0.096	0.118
E	1.500	1.750	0.059	0.069
E1	2.800 TYP		0.110 TYP	
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.700 REF		0.028 REF	
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



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