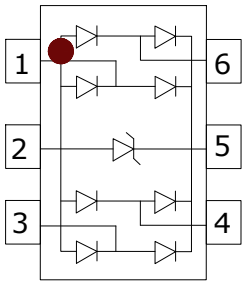
TQELSG215V0

TheTQELSG215V0 provides a typical line to line capacitance of 0.1pF and low insertion loss up to 10GHz providing greater signal integrity making it ideally suited for USB 3.0 applications, such as Digital TVS, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

It 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).

Features

- Protects four I/O lines and one Vcc line
- Low capacitance
- Working voltages : 5V
- Low leakage current
- Low capacitance (<0.8pF) for high-speed interfaces
- No insertion loss to 10.0GHz
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant
- TECH CHIP technology



SOT-363

Main applications

- Digital Visual Interface (DVI)
- 10/100/1000 Ethernet
- USB 1.1/2.0/3.0/OTG
- IEEE 1394 Firewire Ports
- Projection TV Monitors and Flat Panel Displays
- Notebook Computers
- Set Top Box
- Projection TV

Protection solution to meet

- IEC61000-4-2 (ESD) ±20kV (air), ±20kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 4A (8/20μs)

Ordering Information

Device	Marking	Qty per Reel	Reel Size
TQELSG215V0	F54	3000	7 Inch

Maximum ratings (Temp=25℃ Unless Otherwise Specified)

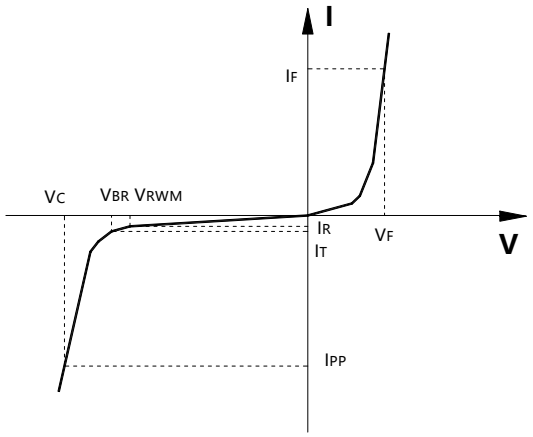
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P_{PPP}	40	Watts
Peak Pulse Current(tp=8/20μs waveform)	I_{PP}	4	A
ESD Rating per IEC61000-4-2: Contact Air		20 20	KV
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Operating Temperature Range	T_J	-55 ~ 150	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃

Electrical characteristics (Temp=25℃ Unless Otherwise Specified)

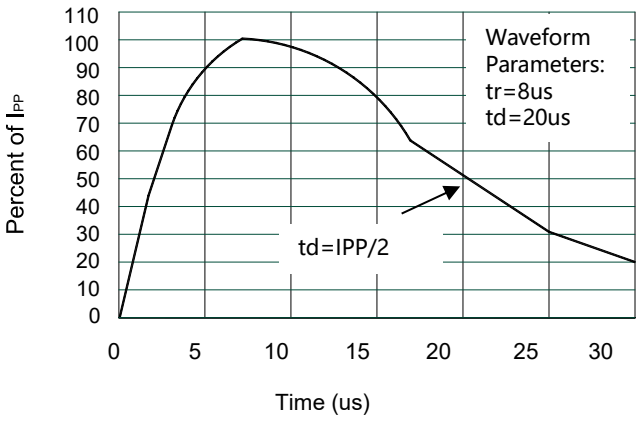
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V_{RWM}	Reverse Working Voltage	Any I/O to Ground			5.0	V
V_{BR}	Reverse Breakdown Voltage	IT = 1mA, Any I/O to Ground	6.0			V
I_R	Reverse Leakage Current	V_{RWM} = 5V, Any I/O to Ground			1	μA
V_F	Diode Forward Voltage	IF = 15mA		0.94	1.2	V
V_C	Clamping Voltage	I_{PP} = 1A, tp =8/20μs, any I/O pin to Ground		7.8	9.6	V
		I_{PP} = 4A, tp =8/20μs, any I/O pin to Ground		12	15.0	V
I_{PP}	Peak Pulse Current	tp =8/20μs			4	A
C_J	Junction Capacitance	V_R = 0V, f = 1MHz, between I/O pins		0.1	0.3	pF
		V_R = 0V, f = 1MHz, any I/O pin to Ground		0.45	0.8	pF

Junction capacitance is measured in VR=0V,F=1MHz

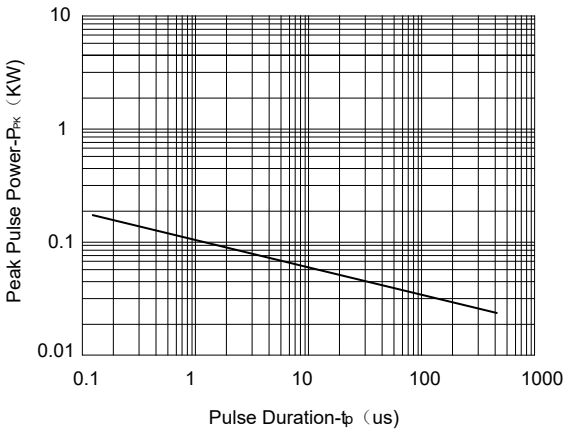
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



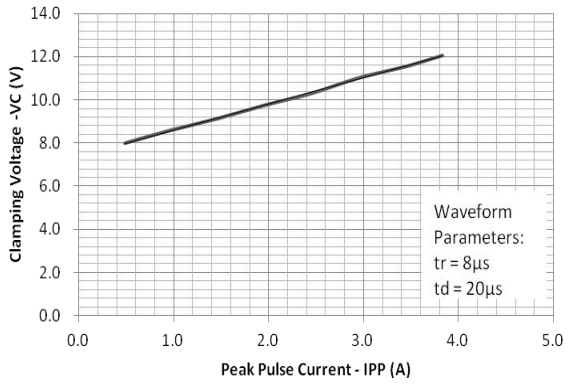
Typical electrical characterist applications



Pulse Waveform

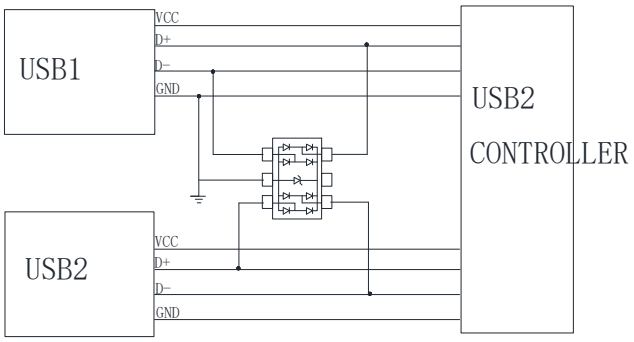


Non-Repetitive Peak Pulse Power vs. Pulse Time



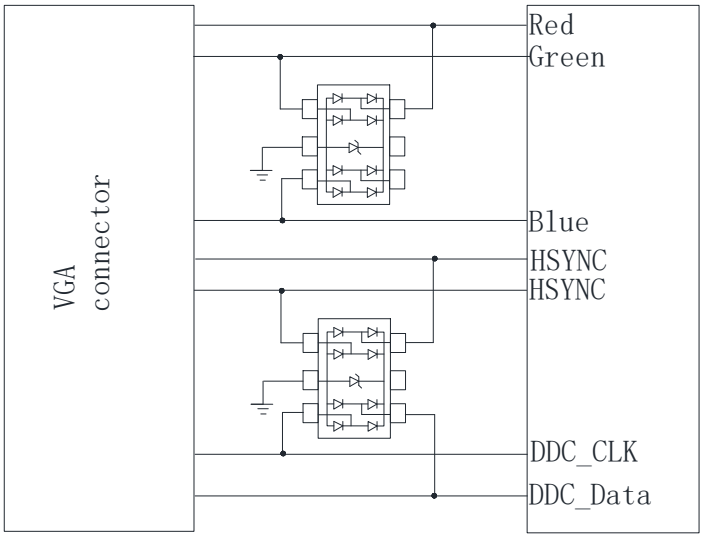
Clamping Voltage vs. Peak Pulse

Typical applications



DUAL USB PROTECTION FOR ESD

ESD protection for USB port



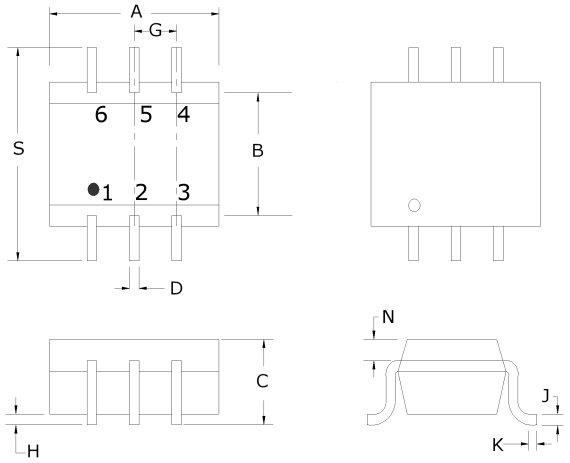
ESD protection for VGA port

Package Information

SOT363

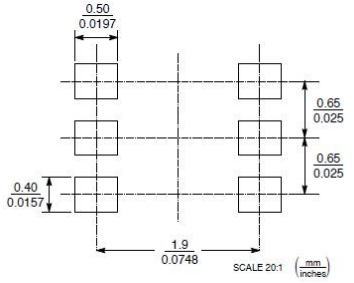
Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	MIN	MAX
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
G	0.65BSC	
H	--	0.10
J	0.08	0.15
K	0.15	0.35
N	0.20REF	
S	2.15	2.45

Recommended Pad outline



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