TQELSI115V0

Ultra Low Capacitance Array for ESD Protection

● **Description**

The TQELSI115V0 provides a typical line to line capacitance of 0.45pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI 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).

● **Feature**

➢ 125W peak pulse power (tP = 8/20μs)
➢ SOT-143   Package
➢ Working voltage: 5V
➢ Low clamping voltage
➢ Low capacitance
➢ RoHS compliant transient protection for high speed data
➢ IEC61000-4-2(ESD)±15kV(air),±8kV(contact)

● **PIN configuration**
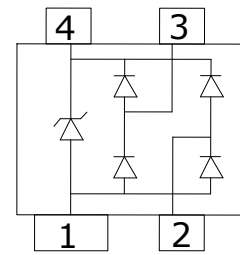
SOT-143

● **Applications**

➢ DVI & HDMI Port Protection
➢ Serial and Parallel Ports
➢ Projection TV
➢ Notebooks, Desktops, Server
➢ USB 1.1/2.0/3.0/3.1/OTG

● **Machanical data**

➢ Lead finish:100% matte Sn(Tin)
➢ Mounting position: Any
➢ Qualified max reflow temperature:260℃
➢ Device meets MSL 1 requirements
➢ Pure tin plating: 7 ~ 17 um
➢ Pin flatness:≤3mil

Ordering Information

Device	Package	Marking	Qty per Reel	Reel Size
TQELSI115V0	SOT-143	5A	3000	7 Inch

● **Electronic Parameter**

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C	Junction Capacitance
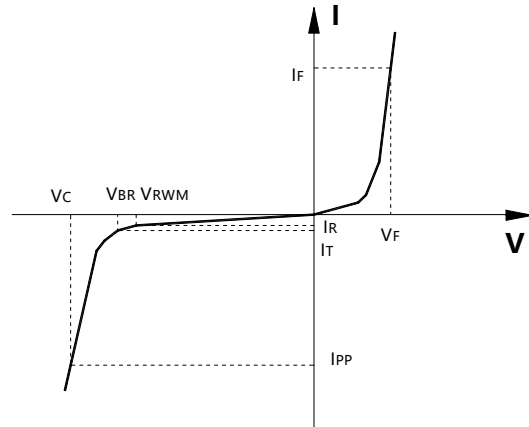
● **Absolute maximum rating @TA=25℃**

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power（8/20μS）	125	W
T_{STG}	Storage Temperature	-55/+150	℃
T_J	Operating Temperature	-55/+150	℃

● **Electrical Characteristics @TA=25℃**

| Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground		5		V
Breakdown Voltage	V_{BR}	It = 1mA Any I/O to Ground		6		V
Reverse Leakage Current	I_R	VRWM =5.0V, T=25℃			1	μA
Diode Forward Voltage	VF	IF = 15mA		0.85	1.2	
Clamping Voltage	V_C	IPP =1A, tP = 8/20μs		9		V
Clamping Voltage	V_C	IPP=5A, tP = 8/20μs		25		V
Junction Capacitance	C_J	VR = 0V, f = 1MHz, between I/O pins		0.45	0.6	
		VR = 0V, f = 1MHz, any I/O pin to Ground		0.9		pF

● **Typical Performance Characteristics**
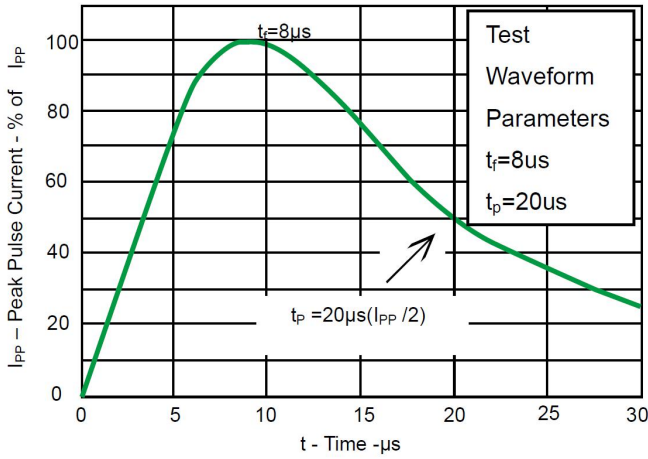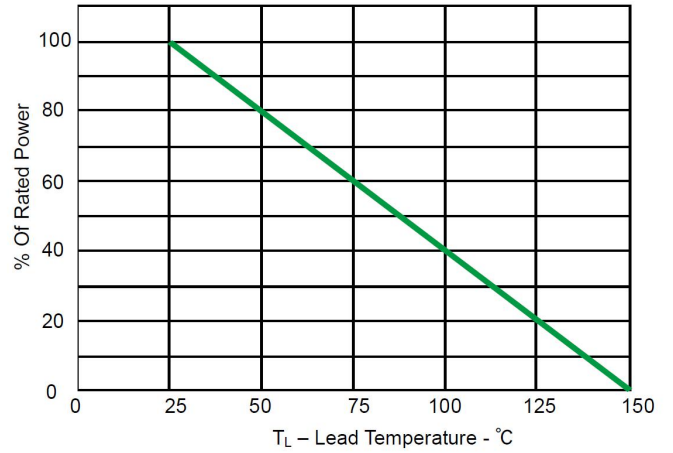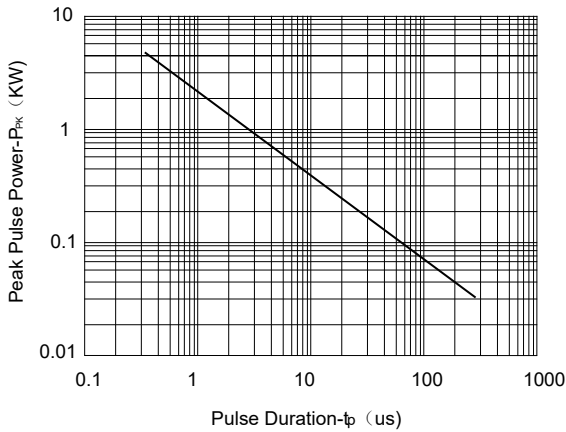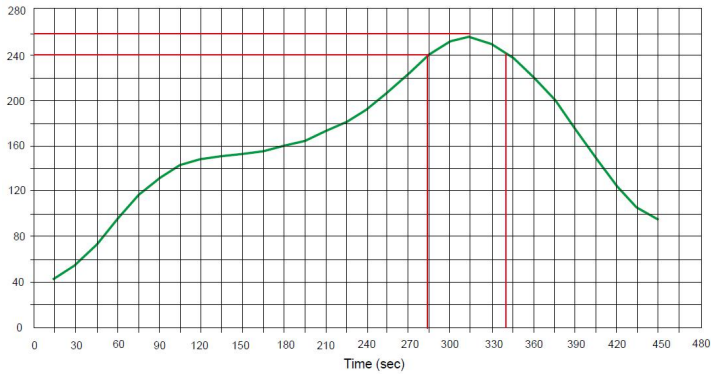

Fig 1.Pulse Waveform

Fig 2.Power Derating Curve

Non-Repetitive Peak Pulse Power vs. Pulse Time

● **Solder Reflow Recommendation**
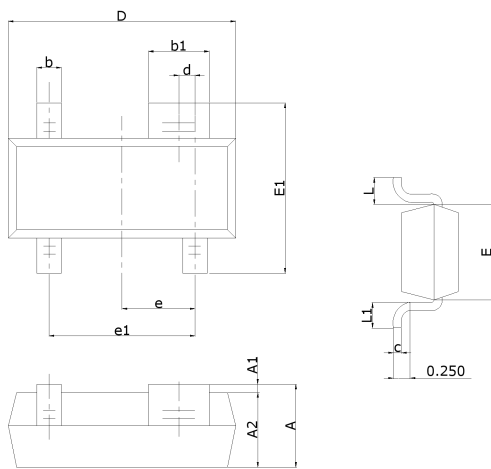
Peak Temp=257℃, Ramp Rate=0.802deg. ℃/sec

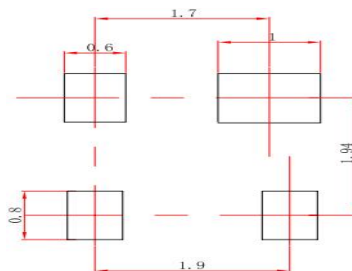● **Package Information**
Mechanical Data

Case: SOT-143

Case Material: Molded Plastic. UL Flammability

SOT-143

DIM	Millimeters	
	Min	**Max**
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
b 1	0.75	0.90
c	0.08	0.15
D	2.80	3.00
d	0.20TYP	
E	1.20	1.40
E1	2.25	2.55
e	0.95TYP	
e1	1.80	2.00
L	0.55REF	
L1	0.30	0.50

Recommended Pad outline

TQ-V1.1   www.techipd.com

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