

TQELN7115V0

Ultra Low Capacitance Array for ESD Protection

● Description

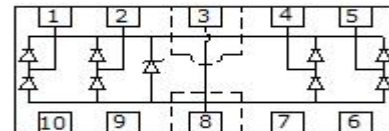
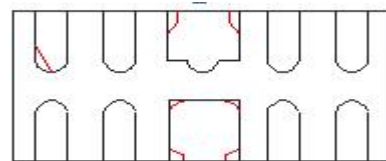
The TQELN7115V0 provides a typical line to line capacitance of 0.3pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

It has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events),and EFT (electrical fast transients).

● Feature

- 45W peak pulse power (tP = 8/20μs)
- DFN2510 Package
- Working voltage: 5V
- Low clamping voltage
- Low capacitance
- RoHS compliant transient protection for high speed data
- IEC61000-4-2(ESD)±25kV(air),±25kV(contact)

● PIN configuration



DFN2510-10L

● Applications

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

● Mechanical data

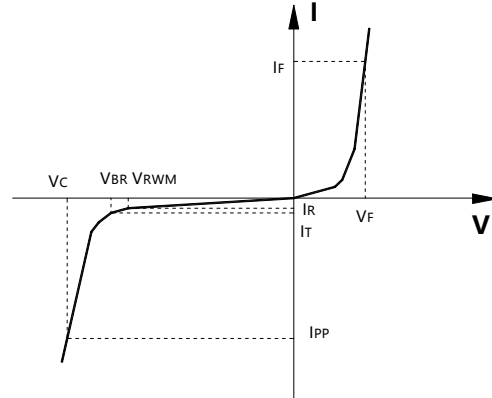
- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

Ordering Information

Device	Package	Marking	Qty per Reel	Reel Size
TQELN7115V0	DFN2510	0524P	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°C

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20 μ S)	45	W
T_{STG}	Storage Temperature	-55/+150	°C
T_J	Operating Temperature	-55/+150	°C

● Electrical Characteristics @TA=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground		5		V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ Any I/O to Ground	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$, $T = 25^\circ\text{C}$			1	μA
Diode Forward Voltage	V_F	$I_F = 15\text{mA}$		0.85	1.2	
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_P = 8/20\mu\text{s}$		8.7		V
Clamping Voltage	V_C	$I_{PP} = 3.4\text{A}$, $t_P = 8/20\mu\text{s}$		11.7		V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pins		0.25	0.3	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to Ground		0.3	0.5	pF

● Typical Performance Characteristics

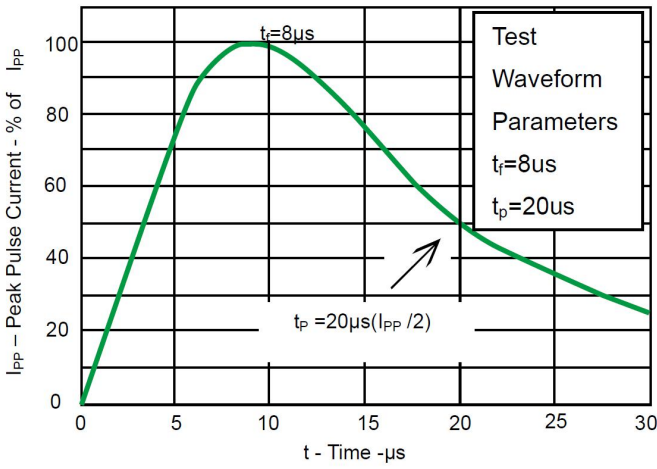


Fig 1. Pulse Waveform

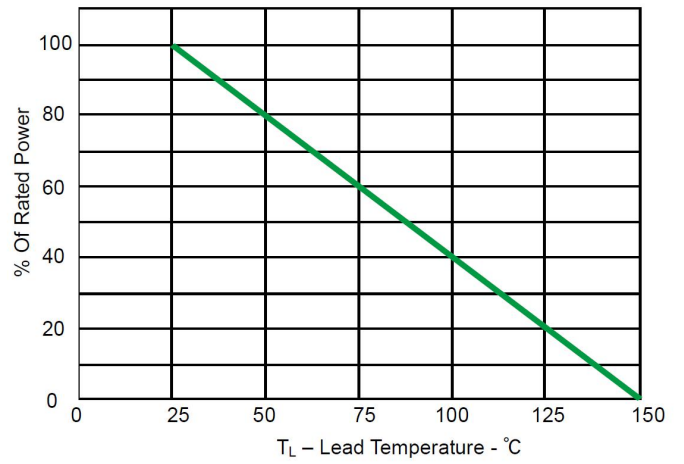
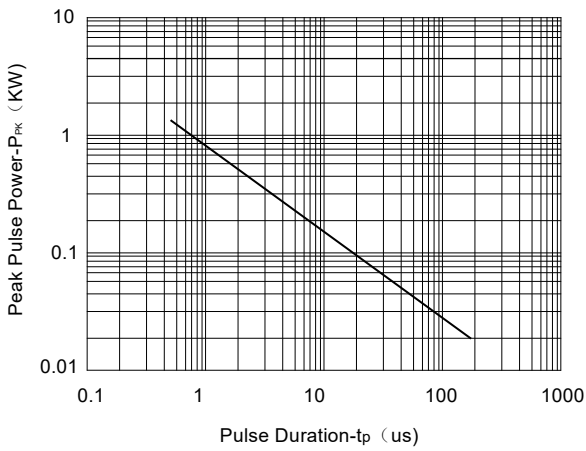
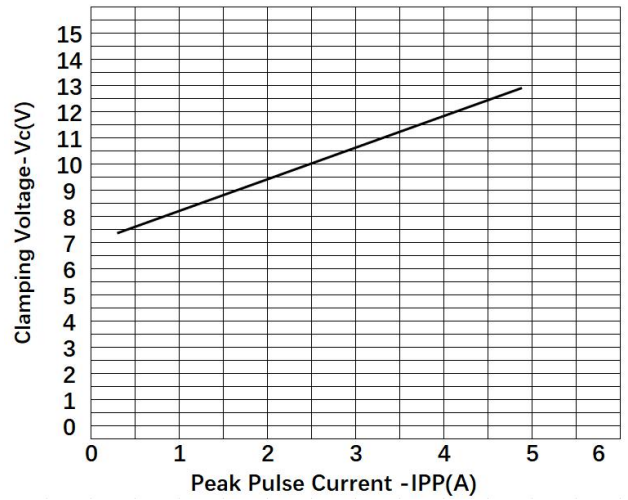


Fig 2. Power Derating Curve



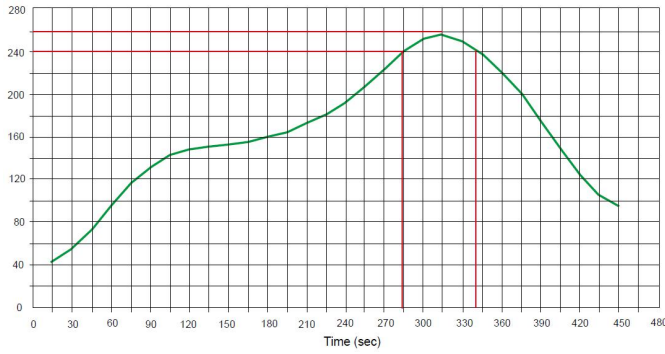
Non-Repetitive Peak Pulse Power vs. Pulse Time



Clamping Voltage vs Peak Pulse Current

- Solder Reflow Recommendation

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec

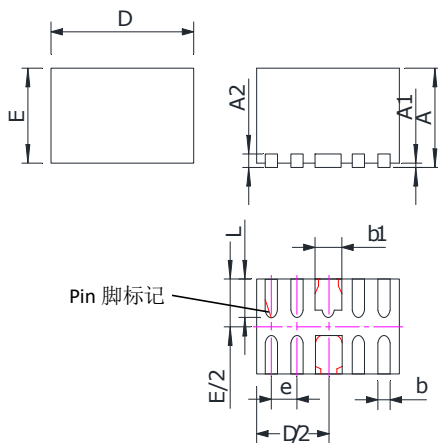


● Package Information

Mechanical Data

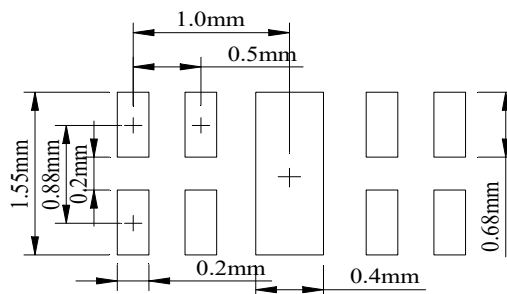
Case:DFN2510

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.45	0.65
A1	0.05REF	
A2	0.15REF	
b	0.15	0.25
b1	0.30	0.50
D	2.424	2.576
E	0.924	1.076
e	0.50REF	
L	0.30	0.45

Recommended Pad outline



DISCLAIMER



TQELN7115V0

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