

## TQTHL3124V5

### Single-Line ESD Protection Array

#### ● Description

The TQTHL3124V5 Series is designed with AF technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

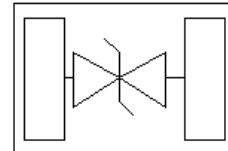
It has been specifically designed to protect sensitive components which are connected to data and transmission lines from over voltage caused by ESD(electrostatic discharge), and EFT (electrical fast transients).

#### ● Feature

- Single-channel ESD protection
- Peak Power Dissipation-1800W(8\*20us Waveform)
- Replacement for MLV
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Response Time is <1ns
- RoHS Compliant
- Meets MSL 1 Requirements
- Reliable silicon device avalanche breakdown

Structure

#### ● PIN configuration



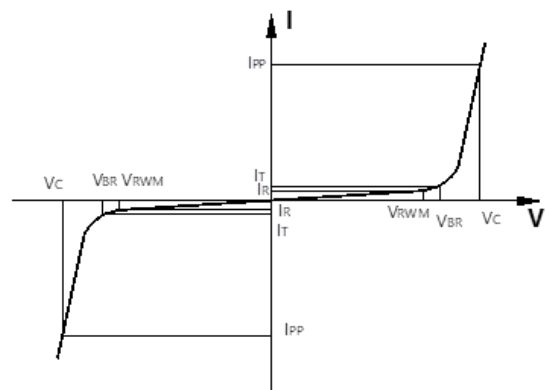
DFN1610-2L

#### ● Applications

- Cell phone handsets and accessories
- Personal Digital Assistants
- Portable Instrumentation
- Digital Cameras
- Power supply protection
- Other electronics equipments communication systems
- **Protection solution to meet**
- IEC61000-4-2(ESD) ±30Kv(contact), ±30kV(air)
- IEC61000-4-5 (Surge) 170A(8/20us)

#### ● Electronic Parameter

Symbol	Parameter
$I_R$	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 @ $I_{PP}$



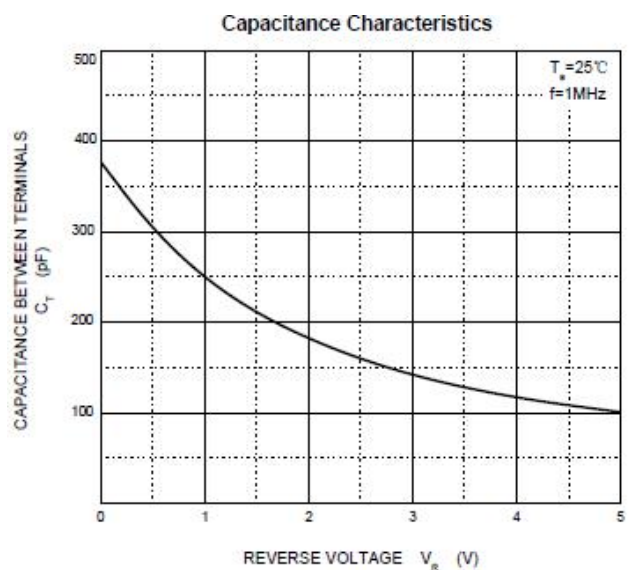
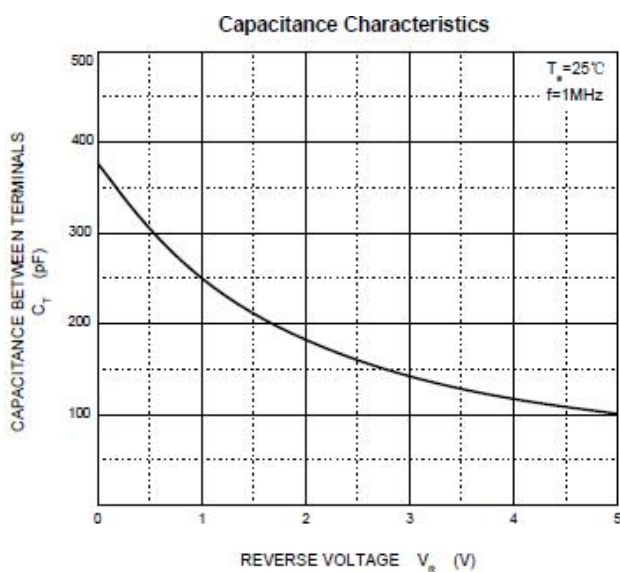
- Absolute maximum rating @TA=25°C**

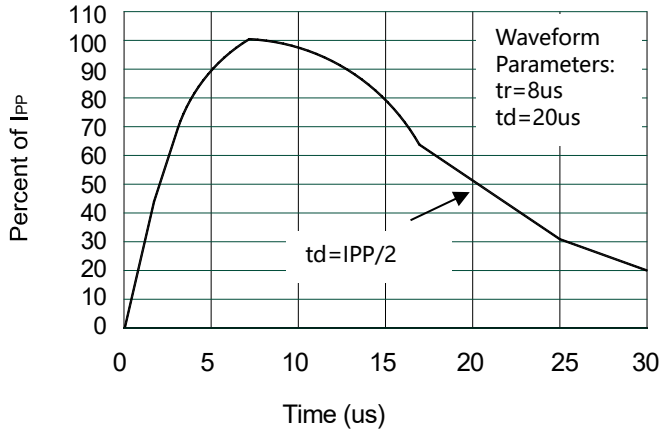
Symbol	Parameter	Value	Units
ESD	ESD Rating per IEC61000-4-2:Contact Air	30	KV
		30	
P <sub>PPP</sub>	Peak Pulse Power (8/20μS)	2300	W
T <sub>STG</sub>	Storage Temperature	-55/+150	°C
T <sub>J</sub>	Operating Temperature	-55/+125	°C

- Electrical Characteristics @TA=25°C**

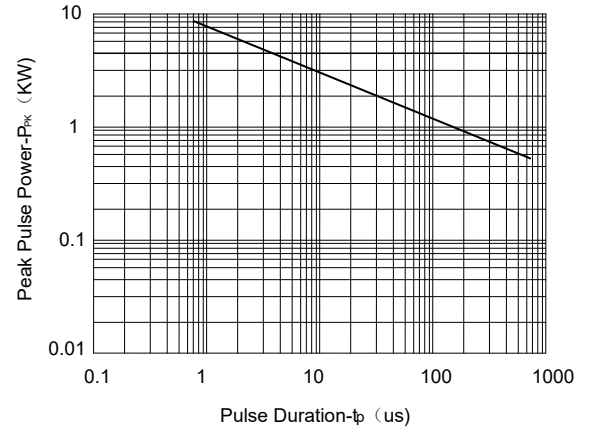
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V <sub>RWM</sub>	Any I/O to Ground			4.5	V
Breakdown Voltage	V <sub>BR</sub>	I <sub>t</sub> = 1mA Any I/O to Ground		5.3		V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> = 12V, T = 25°C			1	μA
Clamping Voltage	V <sub>C1</sub>	IPP = 100A, tP = 8/20μs		9.1		V
Clamping Voltage	V <sub>C2</sub>	IPP = 60A, tP = 8/20μs		11.3		V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to Ground		450		pF
Peak pulse current	I <sub>pp</sub>	Any I/O to Ground			170	A
Peak Pulse Power	P <sub>PPP</sub>	Peak Pulse Power (8/20μS)			2300	W

- Typical Performance Characteristics**

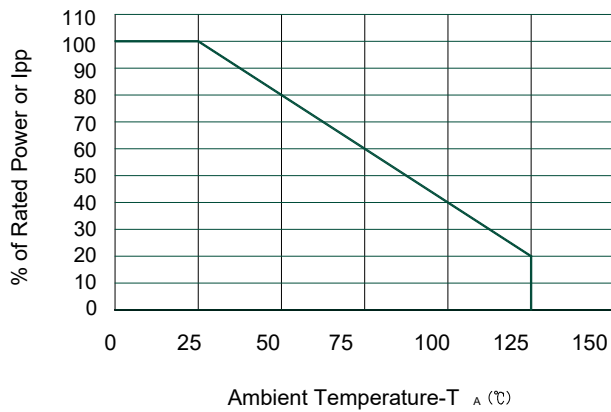




**Pulse Waveform**



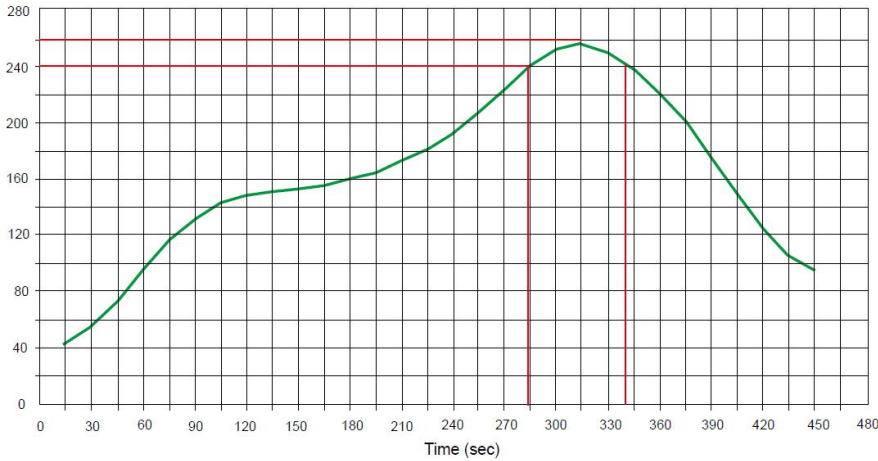
**Non-Repetitive Peak Pulse Power vs. Pulse Time**



**Power Derating Curve**

- **Solder Reflow Recommendation**

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



- **Package Information**

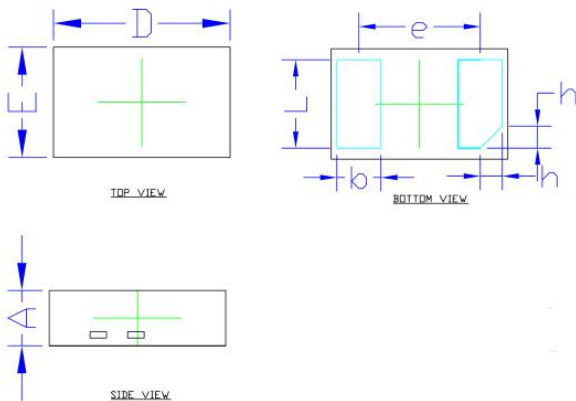
### Ordering Information

Device	Marking	Package	Qty per Reel	Reel Size
TQTHL3124V5	4.5H	DFN1610-2L	10000	7 Inch

### Mechanical Data

Case: DFN1610-2L

Case Material: Molded Plastic. UL Flammability



COMMON DIMENSION (MM)			
PKG	DFN1610		
REF.	MIN.	NOM.	MAX
A	0.45	0.50	0.55
D	1.55	1.60	1.65
E	0.95	1.00	1.05
b	0.35	0.40	0.45
L	0.75	0.80	0.85
e	1.10BSC		
h	0.15	0.20	0.25

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