

TQTHL3112V

Single-Line ESD Protection Array

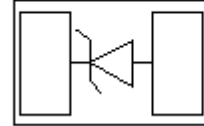
● Description

The TQTHL3112V 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 overvoltage 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

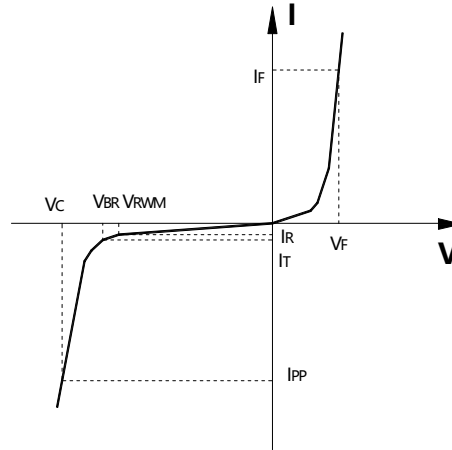
- Cell phone handsets and accessories
- Personal Digital Assistants
- Portable Instrumentation
- Digital Cameras
- Power supply protection
- Other electronics equipments communication systems

● Protection solution to meet

- IEC61000-4-2(ESD) ±30Kv(contact), ±30kV(air)
- IEC61000-4-4(EFT) 40A(5/50ns)

● 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_{PPP}	Peak Pulse Power
C	Junction Capacitance



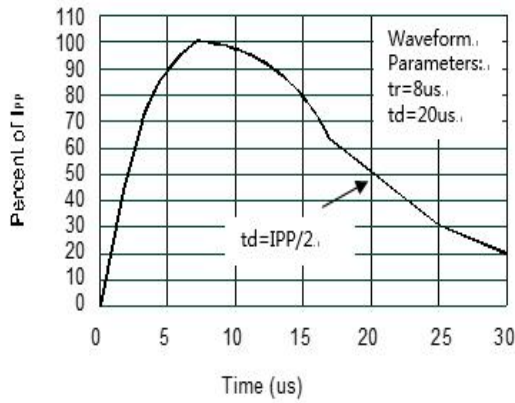
● Absolute maximum rating @TA=25°C

Symbol	Parameter	Value	Units
ESD	ESD Rating per IEC61000-4-2:Contact Air	30 30	KV
P_{PPP}	Peak Pulse Power (8/20 μ S)	1800	W
T_{STG}	Storage Temperature	-55/+150	°C
T_J	Operating Temperature	-55/+125	°C

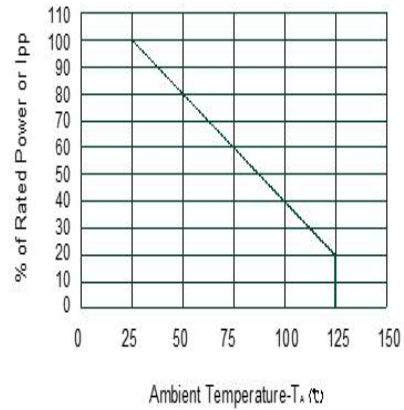
● Electrical Characteristics @TA=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground		12		V
Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$ Any I/O to Ground	13			V
Reverse Leakage Current	I_R	$V_{RWM} = 12\text{V}$, $T = 25^\circ\text{C}$			1	μA
Clamping Voltage	V_{C1}	$I_{PP} = 10\text{A}$, $t_P = 8/20\mu\text{s}$		16.9		V
Clamping Voltage	V_{C2}	$I_{PP} = 60\text{A}$, $t_P = 8/20\mu\text{s}$		24		V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to Ground		410		pF
Peak pulse current	I_{pp}	Any I/O to Ground			60	A
Peak Pulse Power	P_{PPP}	Peak Pulse Power (8/20 μ S)			1800	W

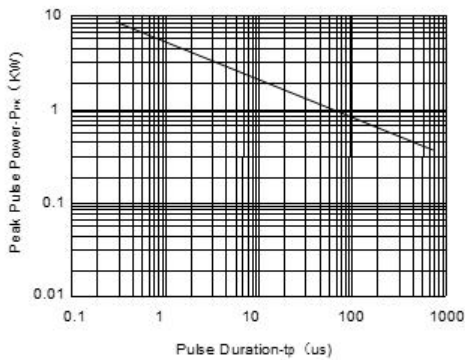
- Typical Performance Characteristics



Pulse Waveform

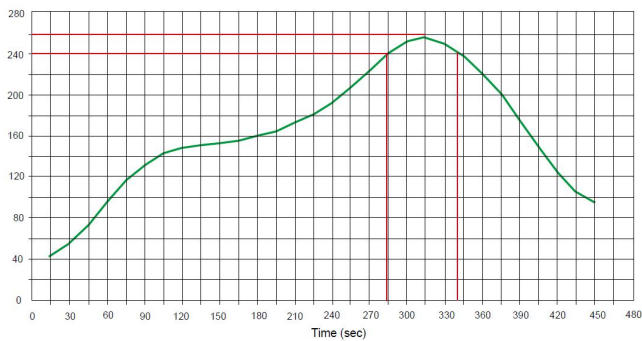


Power Derating Curve



Non-Repetitive Peak Pulse Power vs. Pulse Time

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



- **Package Information**

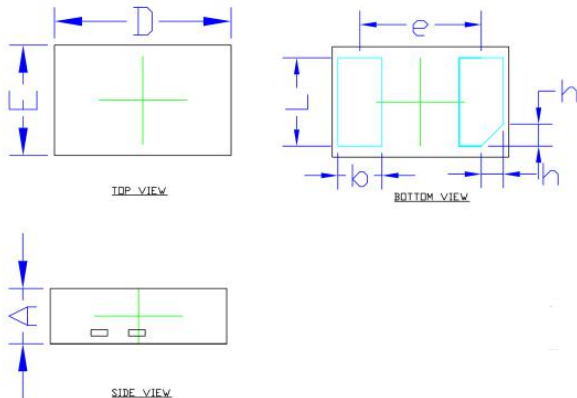
Ordering Information

Device	Marking	Package	Qty per Reel	Reel Size
TQTHL3112V	12P	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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