

- **Electronic Characteristics**

TQTHL3117V0

Single-Line ESD Protection Array

- **Description**

The TQTHL3117V0 Series is designed with a 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).

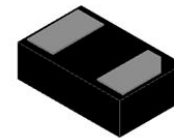
- **Feature**

- Single-channel ESD protection
- Peak Power Dissipation – 1600 W (8 x 20 us Waveform)
- Replacement for MLV
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Response Time is < 1 ns
- RoHS Compliant
- Meets MSL 1 Requirements
- Reliable silicon device avalanche breakdown Structure

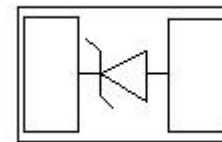
- **Protection solution to meet**

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

- **PIN configuration**



DFN1610



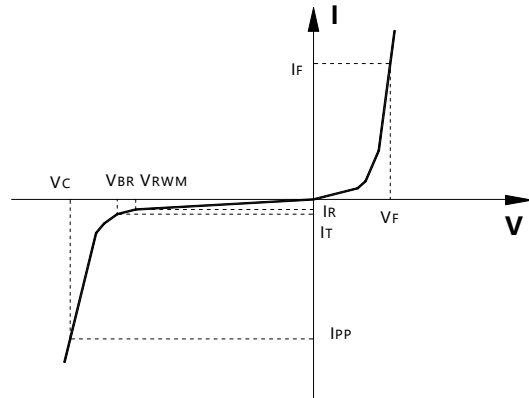
- **Main Applications**

- Cell phone handsets and accessories
- Personal Digital Assistants (PDAs)
- Portable Instrumentation
- Digital cameras
- Power supply protection
- Other electronics equipments communication systems

Electrical characteristics (T_{amb}=25°C Unless Otherwise Specified)

Device	V _{RWM}	I _R @	V _{BR} @ 1 mA	V _{C1}	V _{C2}	I _{PP}	P _{PPP}	C _J
		V _{RWM}	(Volts)	@ 10 A IPP	@Max IPP	(Amps)	(Watt)	(pF)
	(V)	(uA)	Min	(V)	(V)	Max.	Max.	(typ)
TQTHL3117V0	7	1	8	10.5	15	80	1600	400

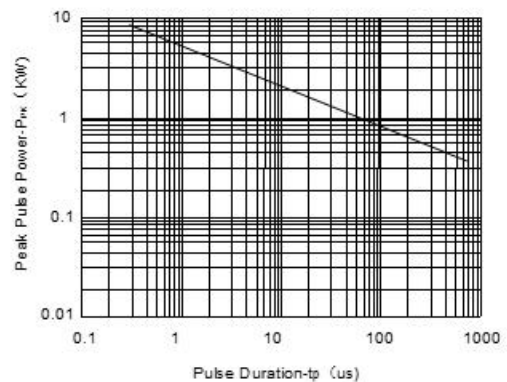
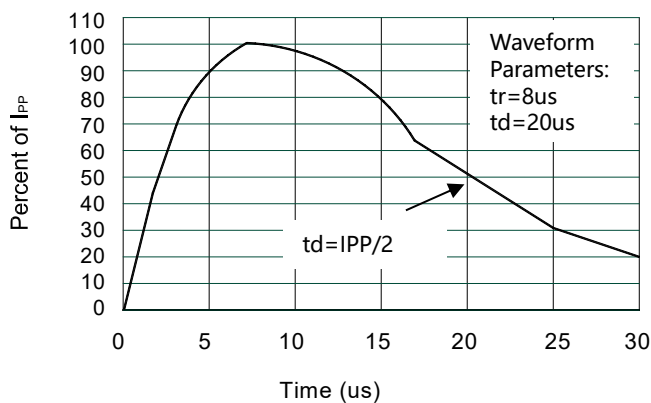
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



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

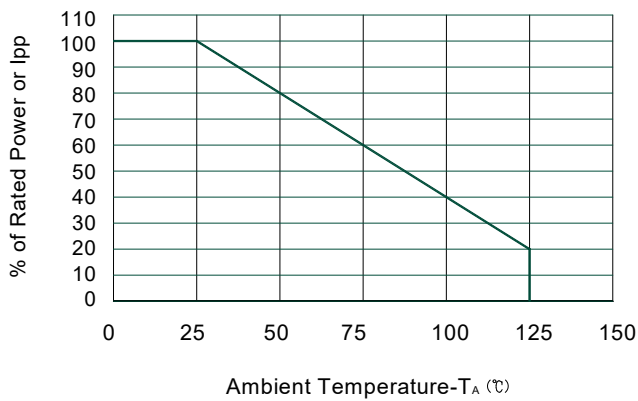
Symbol	Parameter	Value	Units
P _{PPP}	Peak Pulse Power (tp=8/20μs waveform)	1600	Watts
	ESD Rating per IEC61000-4-2:		
	Contact	25	KV
	Air	25	KV
T _L	Lead Soldering Temperature	260 (10 sec.)	°C
T _J	Operating Temperature Range	-55 ~ 125	°C
T _{STG}	Storage Temperature Range	-55 ~ 150	°C

- **Typical Performance Characteristics**



Non-Repetitive Peak Pulse Power vs. Pulse Time

Pulse Waveform



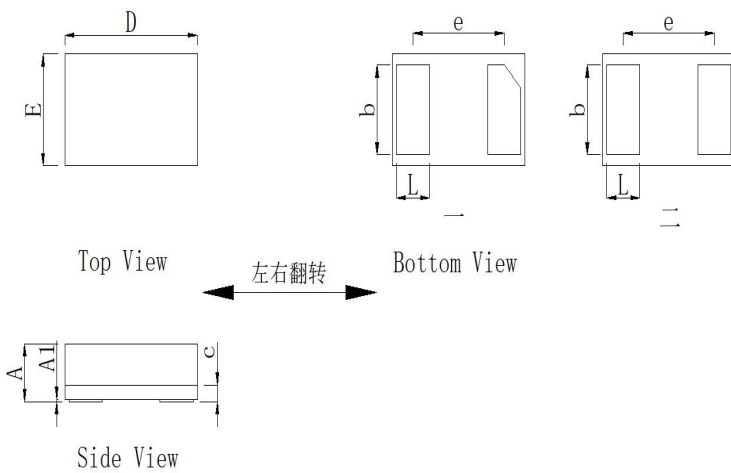
● Package Information

Device	Marking	Package	Qty per Reel	Reel Size
TQTHL3117V0	07P	DFN1610	10000	7 Inch

Mechanical Data

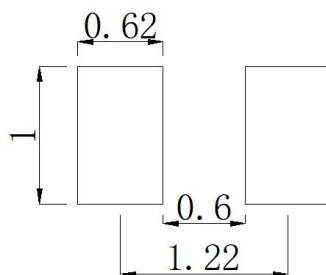
Case:DFN1610

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.45	0.55
A1	0.00	0.05
b	0.75	0.95
c	0.10	0.20
D	1.55	1.65
e	1.10 BSC	
E	0.95	1.05
L	0.35	0.45

Recommended Pad outline



DISCLAIMER

TECH CHIP RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G., OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.