



## TQN0511T

The TQN0511T is designed with TECHIP process TVS 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).

### Features

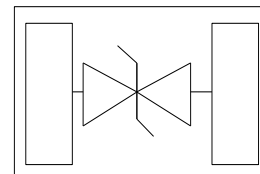
- Peak Power Dissipation –40W ( 8 x 20 us Waveform)
- Stand-off Voltage: 5.0V
- Low capacitance (<15pF) for high-speed interfaces
- No insertion loss to 1GHz
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Meets MSL 1 Requirements
- ROHS compliant
- TECHIP technology



**DFN0603-2L**

### Main applications

- High Speed Line : USB1.0/2.0,VGA
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals



### Protection solution to meet

- IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)

### Ordering Information

Device	Package	Qty per Reel	Reel Size
TQN0511T	DFN0603	15,000pcs	7 Inch

### Maximum ratings (Tamb=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	PPPP	40	Watts
ESD Rating per IEC61000-4-2:			
Contact		30	KV
Air		30	
Lead Soldering Temperature	TL	260 (10 sec.)	°C
Operating Temperature Range	TJ	-55 ~ 150	°C
Storage Temperature Range	TSTG	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	TL	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

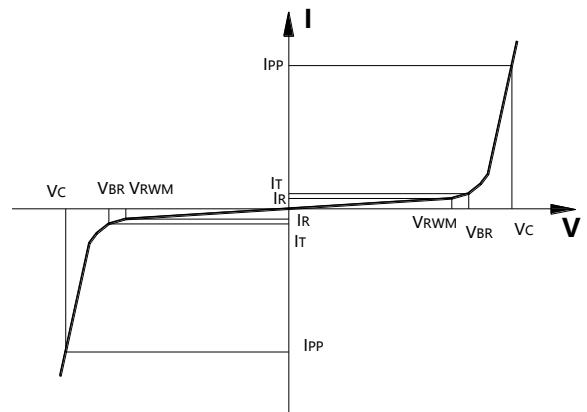
\*Other voltages may be available upon request.

1. Non-repetitive current pulse, per Figure 1.

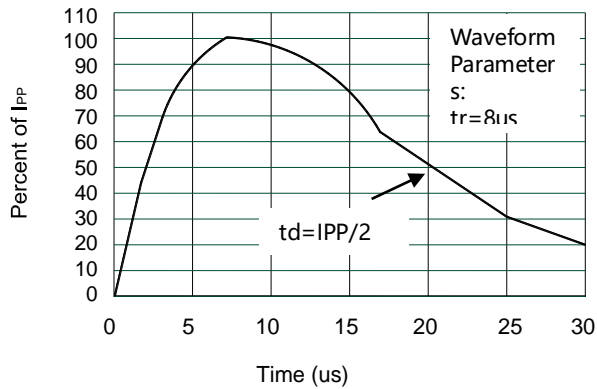
### Electrical characteristics (Tamb=25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
VRWM	Reverse Working Voltage				5.0	V
VBR	Breakdown Voltage	IT = 1mA,	6.0		12	V
IR	Reverse Leakage Current	VRWM = 5V,		0.001	0.1	uA
VC	Clamping Voltage	IPP = 1A, tp = 8/20μs,		8.7	15	V
		IPP = 4A, tp = 8/20μs,		11.2	16.5	V
CJ	Junction Capacitance	VR = 0V, f = 1MHz,		10.2	15	pF
		VR = 5V, f = 1MHz,		7.5	15	pF

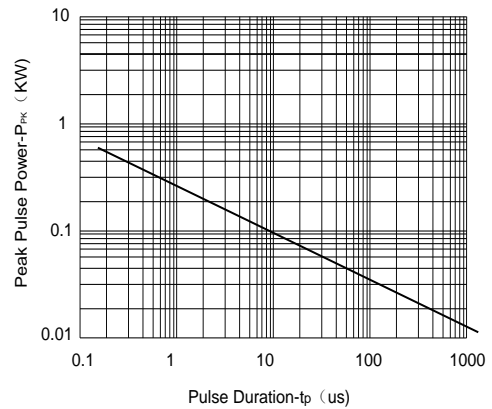
Symbol	Parameter
VRWM	Working Peak Reverse Voltage
VBR	Breakdown Voltage @ IT
VC	Clamping Voltage @ IPP
IT	Test Current
IRM	Leakage current at VRWM
IPP	Peak pulse current
CO	Off-state Capacitance
CJ	Junction Capacitance



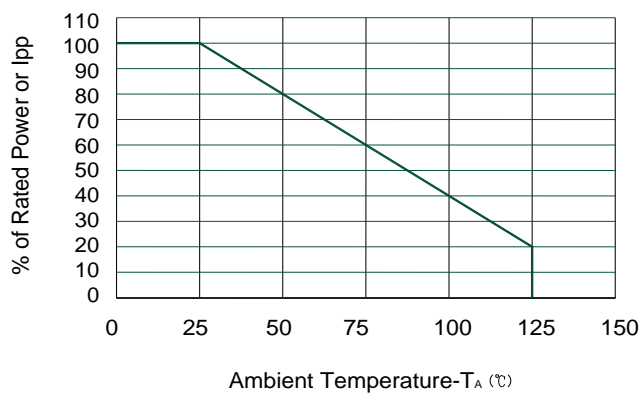
## Typical electrical characterist applications



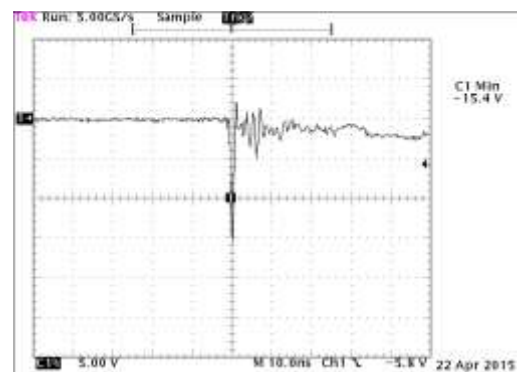
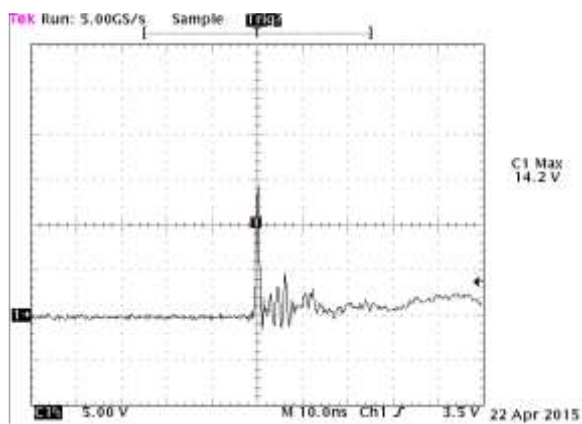
**Pulse Waveform**



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



**Power Derating Curve**



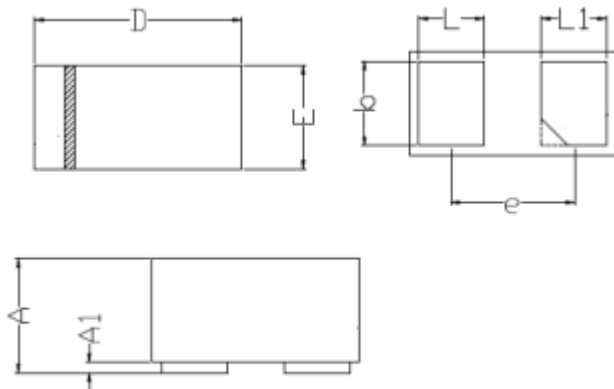
## Package Information

### DFN0603-2L

#### Mechanical Data

Case: DFN0603-2L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.230	0.330
A1	0.000	0.050
D	0.550	0.650
E	0.250	0.350
b	0.215	0.295
L	0.115	0.225
L1	0.115	0.225
e	0.535BSC	

#### Recommended Pad outline

