

TQS0511T

The TQS0511T is designed with TECHIP Punch-Through 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. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, VGA, DVI, SDI and other high speed line applications.

This series 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 50 W (8 x 20 us Waveform)
- Stand-off Voltage: 5.0 V
- Low capacitance for high-speed interfaces
- No insertion loss to 1.0GHz
- Replacement for MLV (0402)
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Low Capacitance
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- ROHS compliant
- TECHIP technology

Main applications

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

Protection solution to meet

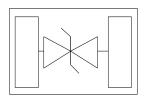
- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

Ordering Information

Device	Qty per Reel	Reel Size
TQS0511T	5000/10000pcs	7inch



DFN1006





Maximum ratings (Tamb=25°C Unless Otherwise Specified)				
Parameter	Symbol	Value	Unit	
Peak Pulse Power (tp=8/20μs waveform)	Ррр	50	Watts	
Peak pulse current (tp=8/20μs waveform)	I_{PP}	3	A	
ESD Rating per IEC61000-4-2: Contact		8	KV	
Air		15		
Lead Soldering Temperature	$T_{ m L}$	260 (10 sec.)	°C	
Operating Temperature Range	Tı	-55 ~ 150	°C	
Storage Temperature Range	Tstg	-55 ~ 150	$^{\circ}$	

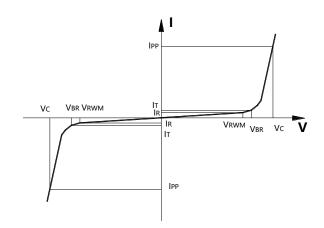
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur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

^{1.} Non-repetitive current pulse, per Figure 1.

Electrical characteristics (Tamb=25°C Unless Otherwise Specified)								
V	$I_R @ V_{RWM}$	V _{BR} @1 mA		V _C @3 A		Capacitance		
Device	$V_{ m RWM}$	(uA)	(V)	C	V)		1 MHz (pF)
	(V)	Max	Min	Max	Тур	Max	Тур	Max
TQS0511T	5.0	1	5.6	7.8	10.6	15	7.0	15

Junction capacitance is measured in V_R =0 V_r F=1MHz

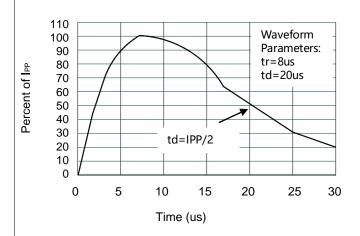
Symbol	Parameter	
V_{RWM}	Working Peak Reverse Voltage	
V_{BR}	Breakdown Voltage @ I _T	
Vc	Clamping Voltage @ IPP	
I _T	Test Current	
IRM	Leakage current at VRWM	
I PP	Peak pulse current	
Co	Off-state Capacitance	
C_{J}	Junction Capacitance	

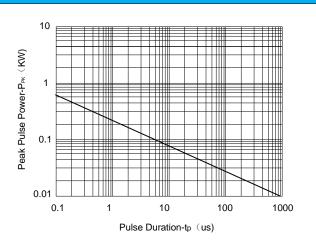


^{*}Other voltages may be available upon request.



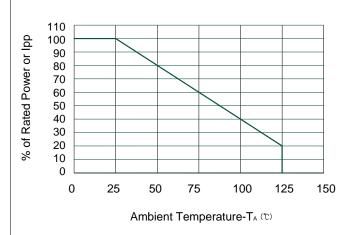
Typical electrical characterist applications

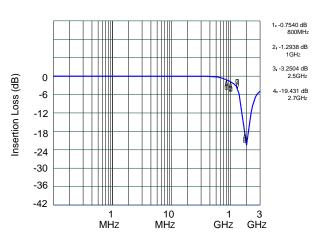




Pulse Waveform







Power Derating Curve

Insertion Loss S21



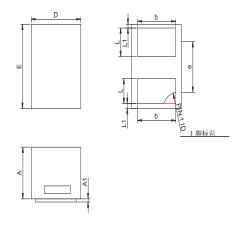
Package Information

DFN1006

Mechanical Data

Case:DFN1006

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
DIM	Min	Max	
A	0.40	0.50	
A1	0.00	0.05	
D	0.55	0.65	
E	0.95	1.05	
b	0.40	0.60	
e	0.65TYP		
L	0.15	0.35	
L1	0.05REF		

Recommended Pad outline

