ULC0521C18Q

1-Line Low Capacitance Bi-directional TVS Diode

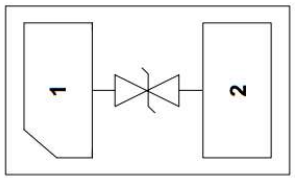
Features

- typical Ultra low leakage: nA level
- Low operating voltage: 5 V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±11kV
    - Contact discharge: ±11kV
  - –IEC61000-4-5 (Lightning) 5A (8/20μs)
- RoHS Compliant
- AEC-Q101 qualified

Dimensions DFN0603



Pin Configuration



Applications

- USB Ports
- SIM Ports
- Smart Phones
- Wireless Systems
- Set-top box and digital TV
- Digital video interface (DVI)
- Ethernet 10/100/1000 Base T

Mechanical Characteristics

- Package: DFN0603
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel:10,000pcs
- Reel Size:7 inch
- Device Marking: 9S

Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

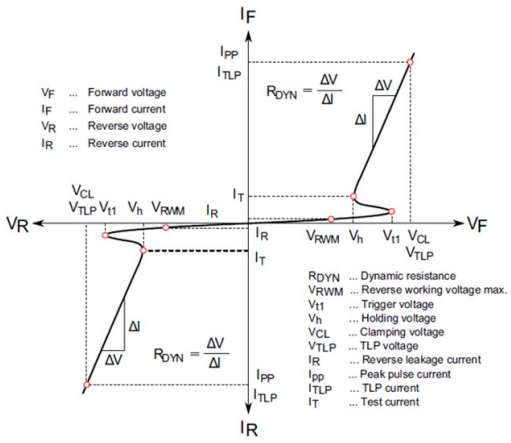
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	40	W
ESD per IEC 61000−4−2 (Air)	V_{ESD}	± 11	kV
ESD per IEC 61000−4−2 (Contact)		± 11	
Operating Temperature Range	T_J	-40 to +125	℃
Storage Temperature Range	T_{STJ}	-55 to +150	℃

Electrical Characteristics(TA=25°C unless otherwise specified)

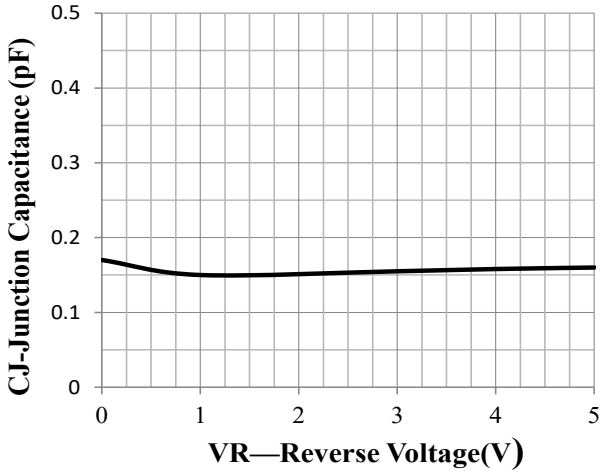
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5. 0	V
Breakdown Voltage	V_{BR}	I_T = 1mA	6.5	10.5		V
Holding Voltage	V_h	I_T = 30mA	1.5	2.1		V
Reverse Leakage Current	I_R	V_{RWM} = 5. 0V			0.2	μA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20μs pulse)		3.0		V
Clamping Voltage	V_C	I_{PP} = 5A (8 x 20μs pulse)		5.5	8.0	V
ESD Dynamic Turn on Resistance	R_{DYN}	T_P = 10/100 ns		0.47		Ω
ESD Clamping Voltage	VCL-ESD	IEC 61000-4-2 +8kV (ITLP = 16A), Contact mode, T=25 °C.		9.9		V
Junction Capacitance	C_J	VR = 0V, f = 1MHz		0.17	0.25	pF

Electrical Parameters(TA=25°C unless otherwise specified)

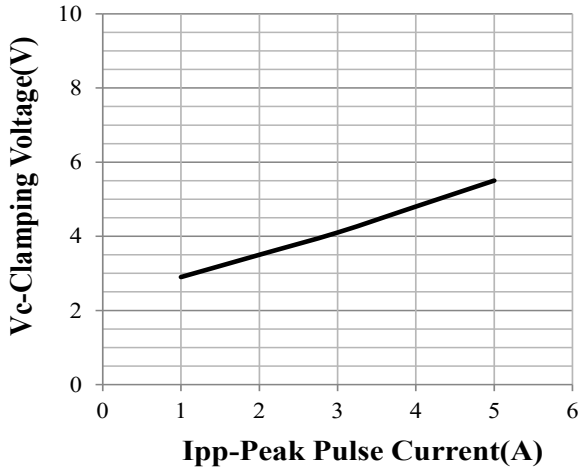
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



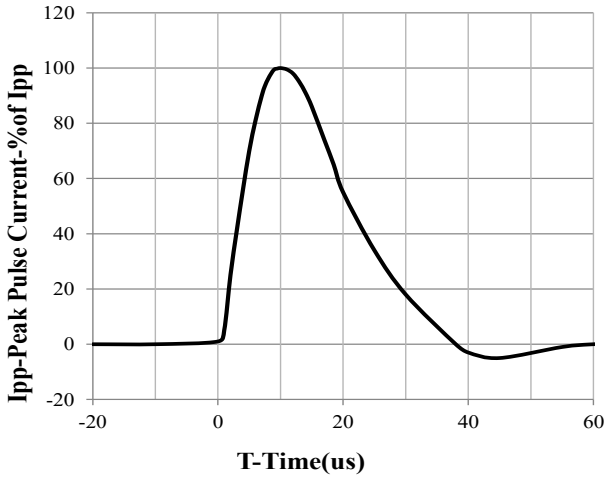
Typical Performance Characteristics(TA=25°C unless otherwise specified)



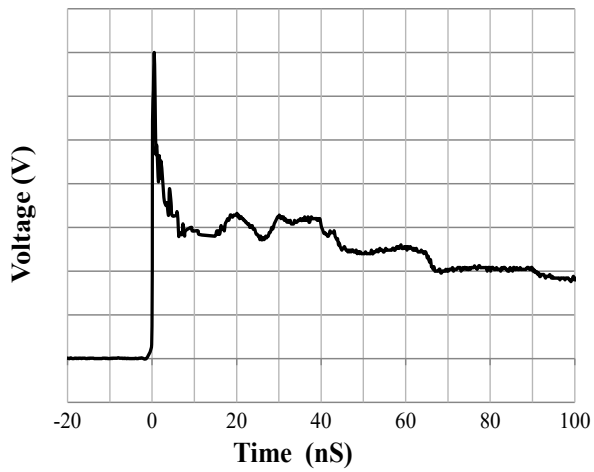
Junction Capacitance vs. Reverse Voltage



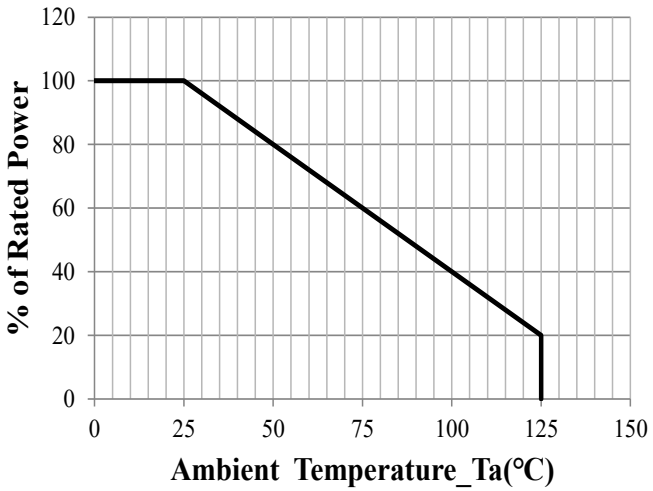
Clamping Voltage vs. Peak Pulse Current



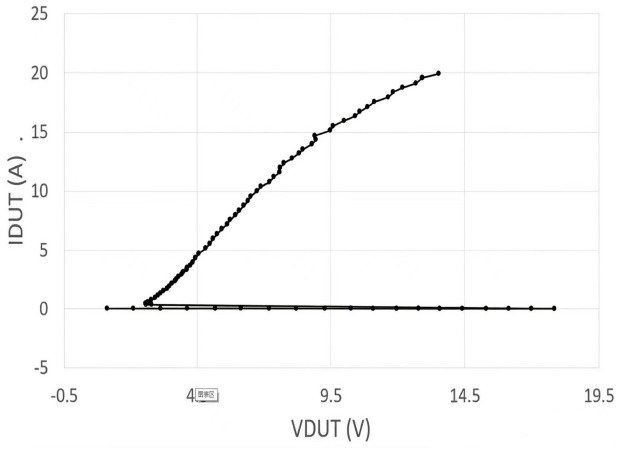
8 X 20us Pulse Waveform



IEC61000−4−2 Pulse Waveform

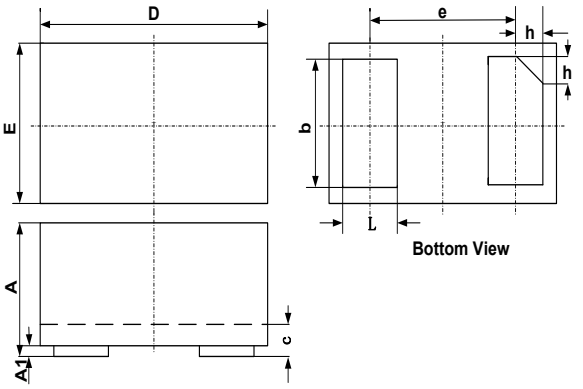


Power Derating Curve



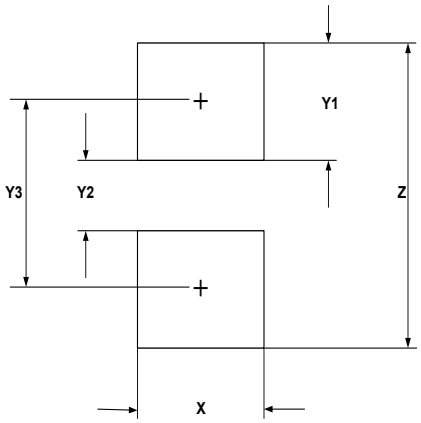
TLP Curve

DFN0603 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.15	0.006
Y3	0.40	0.016
Z	0.65	0.026

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