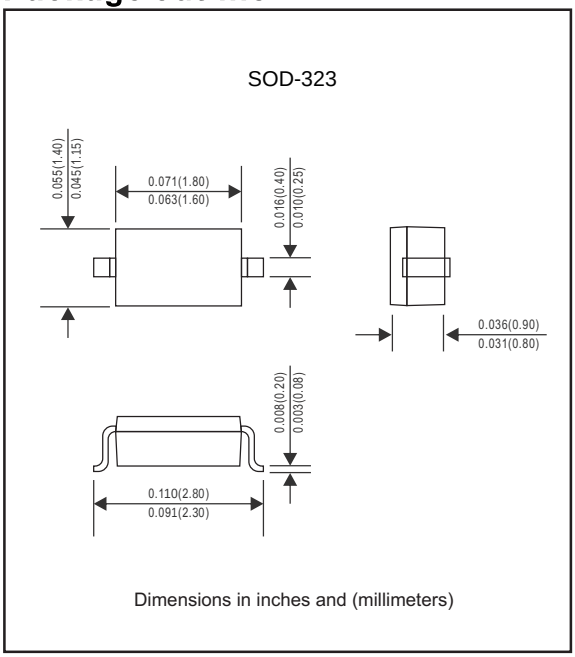
GBLC05A18C-Q1

Surface Mount Bi-Directional TVS For ESD Protection Diode -5V

Features

- 340W peak pulse power (8/20μs)
- Ultra low capacitance: 1pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Protects one power line or data line
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Package outline



Main applications

- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base T

Protection solution to meet

- IEC 61000-4-2 (ESD) immunity test

  Air discharge: ±30kV

  Contact discharge: ±30kV
- IEC61000-4-5 (Lightning) 18 A (8/20μs)

Mechanical Characteristics

- Package: SOD-323
- Case Material: “Green” Molding Compound
- Marking Information: See Below

Absolute maximum ratings (T_A=25ºC unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	340	W
Peak Pulse Current (8/20μs)	I_{PP}	18	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical characteristics (T_A=25ºC unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V
Clamping Voltage	V_C		8	10	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C		15	18	V	I_{PP} = 18A (8 x 20μs pulse)
Junction Capacitance	C_J		1		pF	VR = 0V, f = 1MHz

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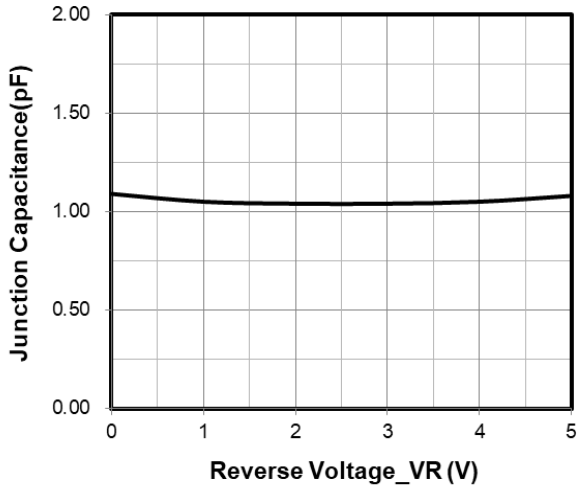
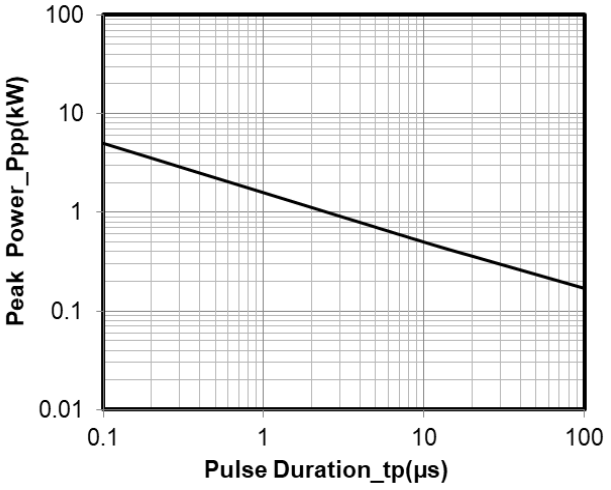
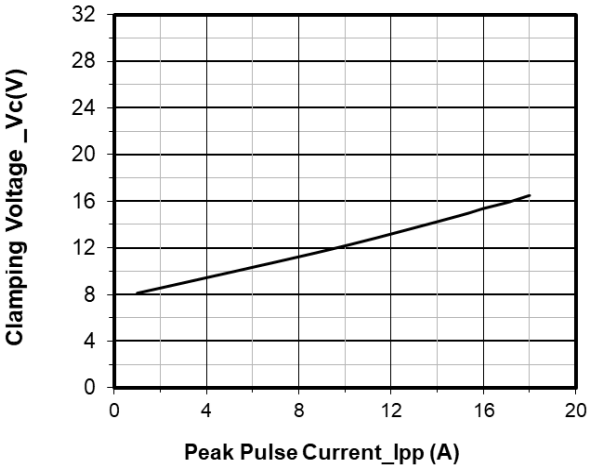
Typical Characteristics (T_A=25ºC unless otherwise noted)



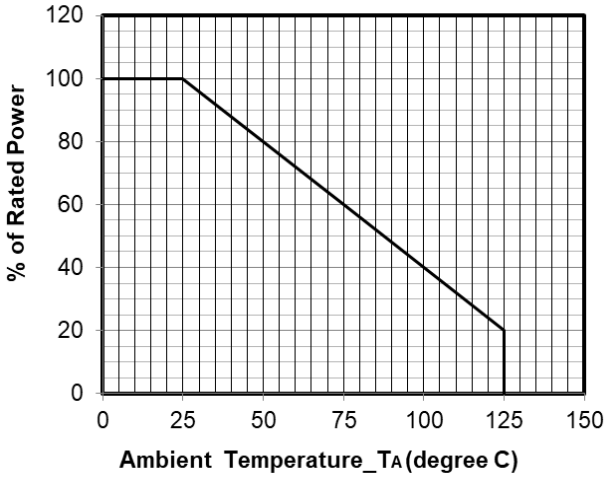
Junction Capacitance vs. Reverse Voltage



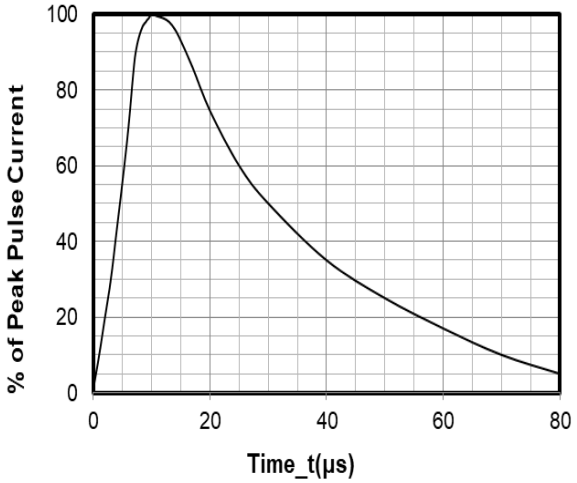
Peak Pulse Power vs. Pulse Time



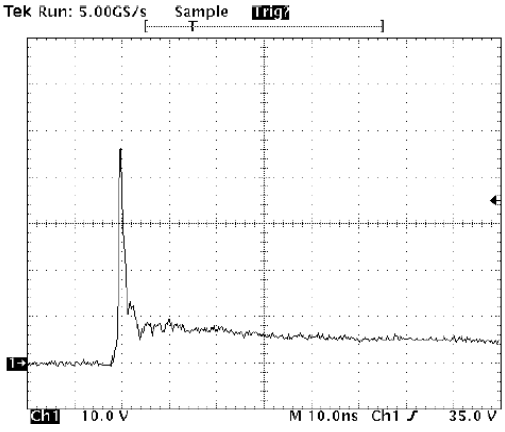
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



Note：Data is taken with a 10x attenuator

ESD Clamping Voltage
8 kV Contact per IEC61000−4−2

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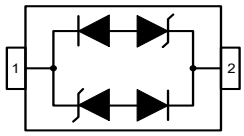
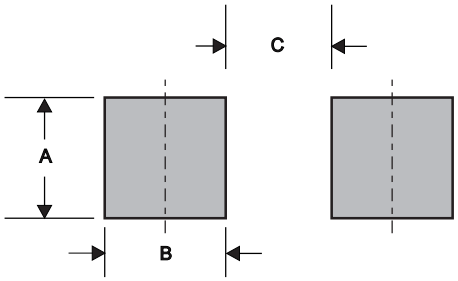
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
GBLC05A18C-Q1	AC

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-323	0.032 (0.80)	0.032 (0.80)	0.055 (1.40)