1-Line, Bi-directional, Normal-Capacitance, Transient Voltage Suppressors

Descriptions

The ESD9X5.0ST5G series are Bi-directional transient voltage suppressors (TVS) to protect sensitive electronic components from electrostatic discharge (ESD). It is particularly well-suited for cellular phones, PMP, MID, PDA, digital cameras and other electronic equipments.

The ESD9X5.0ST5G series aresafely dissipatingESD strikes to meet the ESD immunity testing of IEC61000-4-2 level 4.

The ESD9X5.0ST5G series are available in a FBP-02C, SOD-923 and DFN1006 package with Pb-free.

FBP-02C

SOD-923

DFN1006

Pin configuration (Top view)

Features

- Working voltage : 5V
- Peak power (tp=8/20us) : 85W Max.
- Peak current (tp=8/20us) : 6.5A Max.
- Transient protection
  IEC61000-4-2 : ±30kV air
  : ±30kV contact
- Low clamping voltage
- Low leakage current
- Small package

FBP-02C

SOD-923

DFN1006

C = Device code
* = Month code (0~9 A~Z)

Applications

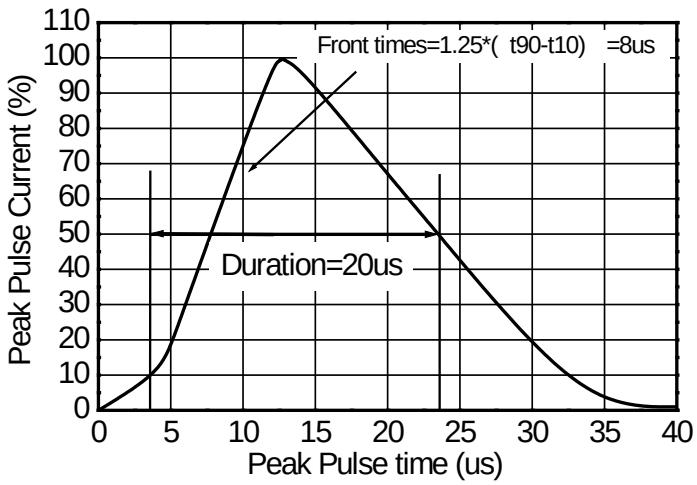
- Cell phone
- PMP
- MID
- PDA
- Digital camera
- Other electronics equipments

Absolute maximum ratings

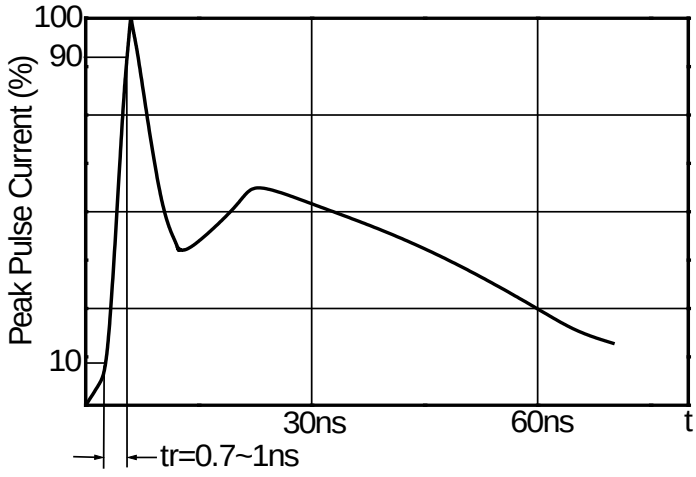
Parameter	Symbol	Rating	Unit
Peak pulse power (tp=8/20us)	Ppk	85	W
Peak pulse current (tp=8/20us)	Ipp	6.5	A
ESD voltage IEC61000-4-2 air	V_{ESD}	±30	kV
ESD voltage IEC61000-4-2 contact		±30	
Operation junction temperature	T_J	125	°C
Lead temperature	T_L	260	°C
Storage temperature	Tsg	-55~150	°C

Electronics characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reveres maximum working voltage	V_{RWM}				5.0	V
Reveres leakage current	I_R	V_{RWM}=5V			1.0	uA
Reveres breakdown voltage	V_{BR}	I_T=1mA	5.6	7.5	8.2	V
Forward voltage	V_F	I_F=1mA	5.6	7.5	8.2	V
Clamping voltage	V_C	Ipp=1A tp=8/20us			9	V
		Ipp=6.5A tp=8/20us			13	V
Junction capacitance	C	F=1MHz, V_R=0V		20	35	pF

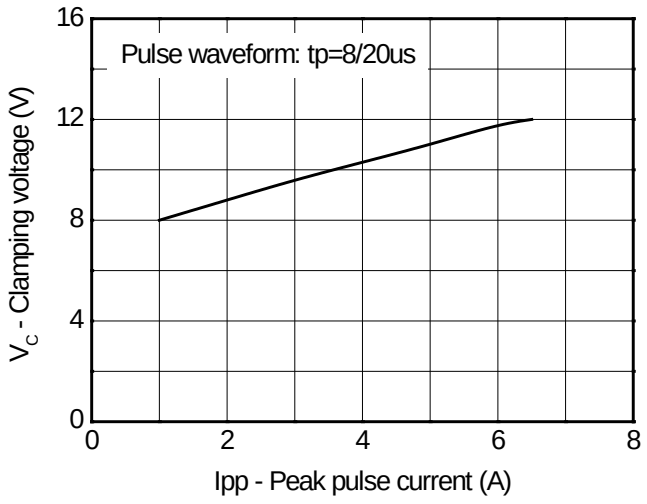


8/20us waveform

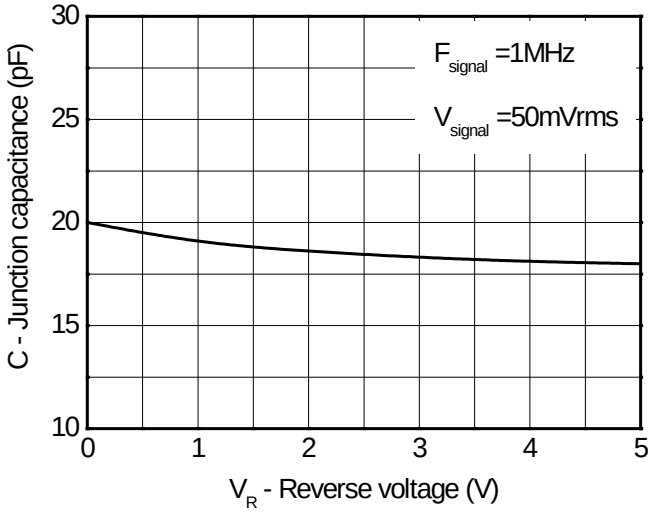


IEC61000-4-2 waveform

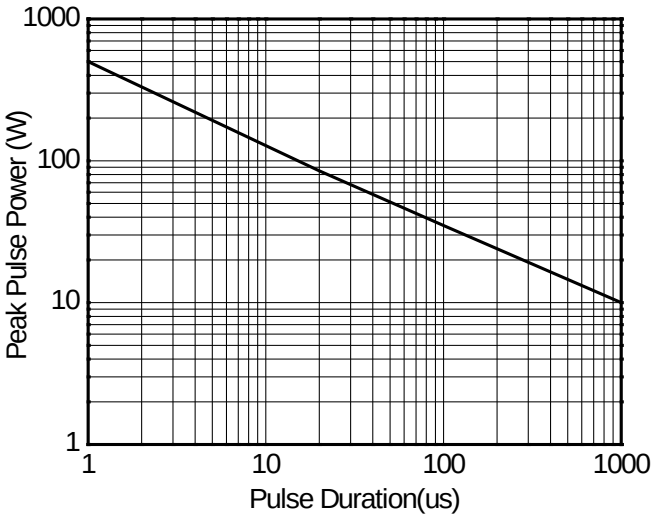
Typical characteristics (Ta=25°C, unless otherwise noted)



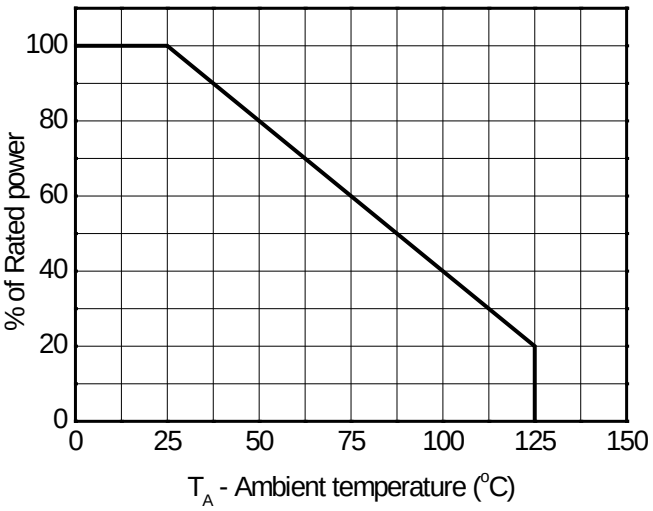
Clamping voltage vs. Peak pulse current



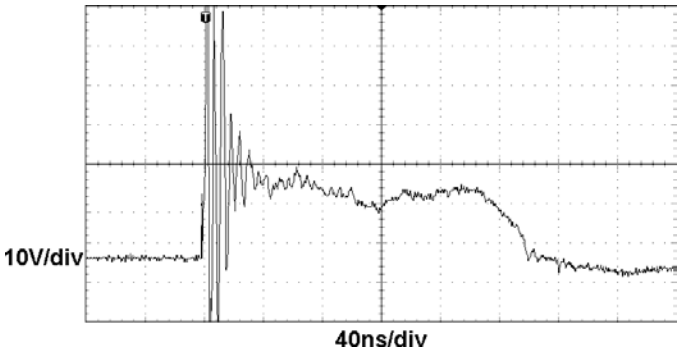
Capacitance vs. Reveres voltage



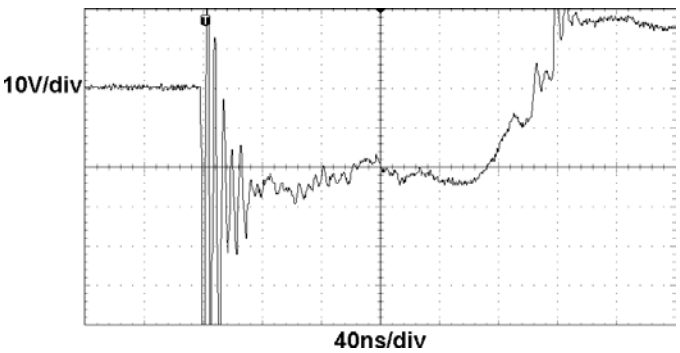
Non-Repetitive Peak Pulse Power vs. Pulse time



Power derating vs. Temperature



ESD clamping voltage
(IEC61000-4-2 +8kV contact)



ESD clamping voltage
(IEC61000-4-2 -8kV contact)