



General Description

The AFE9D5U is transient voltage suppressors (TVS) which provide a very high level protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). It is designed to replace multilayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

The AFE9D5U is past ESD transient voltage up to $\pm 8\text{KV}$ (contact) according to IEC61000-4-2 and will withstand peak current up to 3A for 8/20us pulse according to IEC61000-4-5.

The AFE9D5U is available in SOD-923 package.
Standard products are Pb-free and Halogen-free..

Features

- Reverse stand-off voltage: $\pm 5\text{V}$ Max
- Transient protection for each line according to IEC61000-4-2 (ESD): $\pm 8\text{KV}$ (Contact and Air)
- Capacitance: $C_J = 0.5\text{pF}$ (typ.)
- Low leakage current: $I_R < 1\mu\text{A}$
- Low clamping voltage
- Small Package SOD-923

Pin Description (SOD-923)



Application

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

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFE9D5UD92RG	X	SOD-923	Tape & Reel	5000 EA

※ X Device Code

※ AFE9D5UD92RG : 7" Tape & Reel ; Pb- Free



Absolute Maximum Ratings

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Peak Pulse Power (tp = 8/20 μs)	P _{pk}	42	W
Peak Pulse Current (tp = 8/20 μs)	I _{pp}	35	A
ESD Per IEC 61000-4-2 (Air)	V _{ESD}	±15	KV
ESD Per IEC 61000-4-2 (Contact)		±8	
Operation Junction Temperature	T _J	125	°C
Maximum Lead Temperature for soldering during 10s	T _L	260	°C
Storage temperature range	T _{stg}	-55 ~ +150	°C

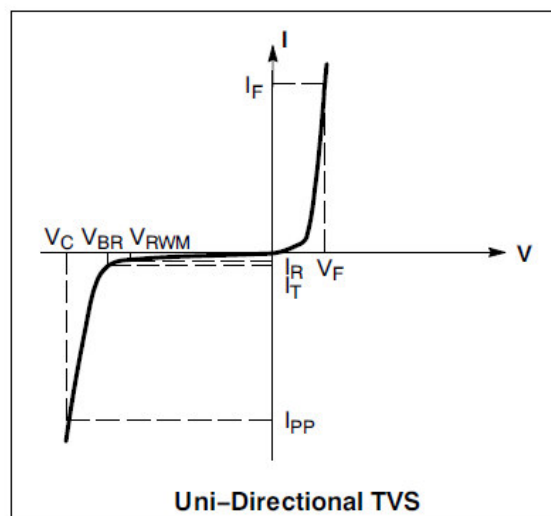
Electrical Characteristics

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Reverse Stand – Off Voltage	V _{RWM}				5.0	V
Reverse Breakdown Voltage	V _{BR}	I _T = 1mA	6.5	8.0	8.8	V
Forward Voltage	V _F	I _F = 10mA	0.4	0.9	1.4	V
Reverse Leakage Current	I _R	V _{RWM} = 5V			1.0	μA
Clamping Voltage	V _{CL}	I _{PP} = 1A (tp = 8/20 μs) I _{PP} = 3A (tp = 8/20 μs)			10.5 14	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHz		0.5	0.9	pF

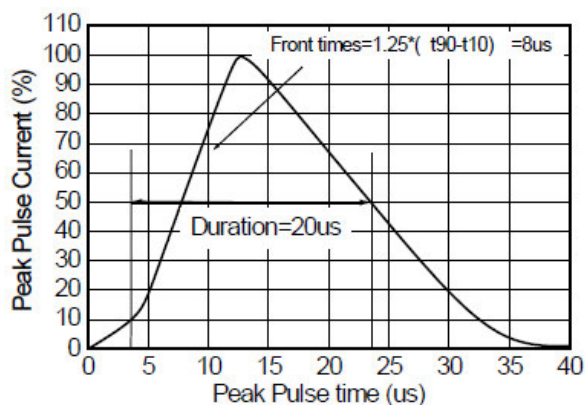
Electronics Parameter

Symbol	Parameter
V _{rw}	Peak Reverse Working Voltage
I _r	Reverse Leakage Current @ V _{rw}
V _{br}	Breakdown Voltage @ I _t
I _t	Test Current
I _{pp}	Maximum Reverse Peak Pulse Current
V _c	Clamping Voltage @ I _{pp}
P _{pk}	Peak Power Dissipation
C	Junction Capacitance
I _f	Forward Current
V _f	Forward Voltage @ I _f

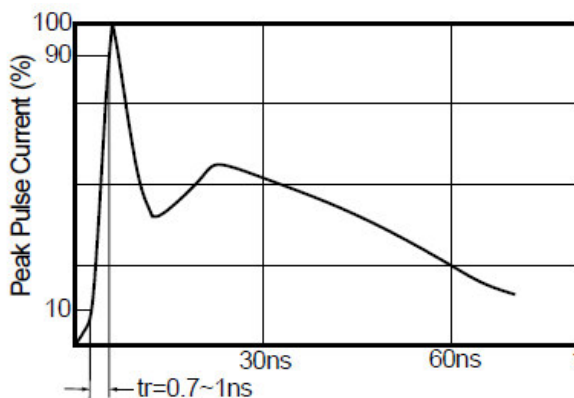




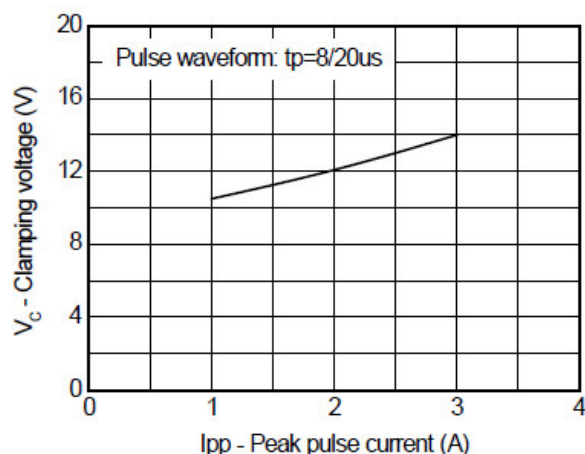
Typical Characteristics (TA=25°C Unless otherwise noted)



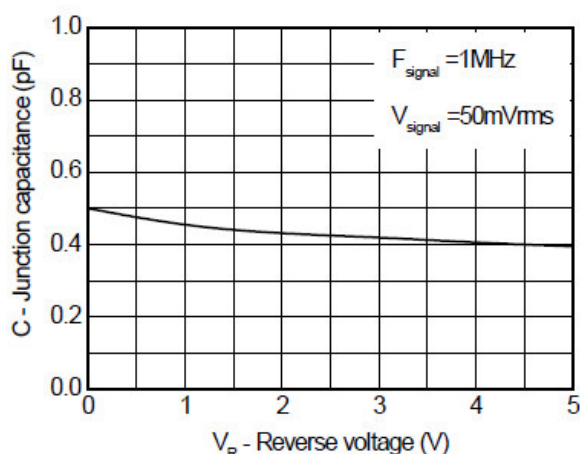
8/20us waveform



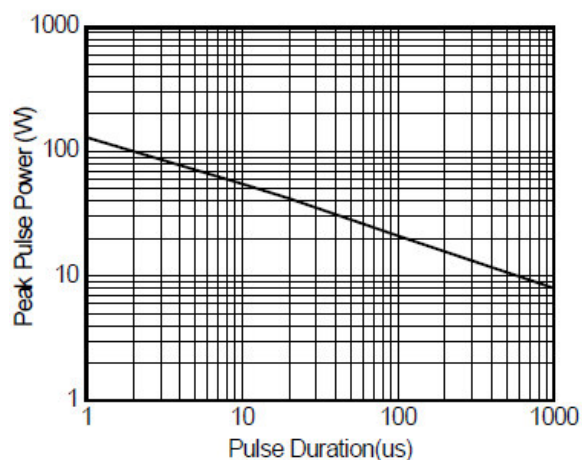
IEC61000-4-2 waveform



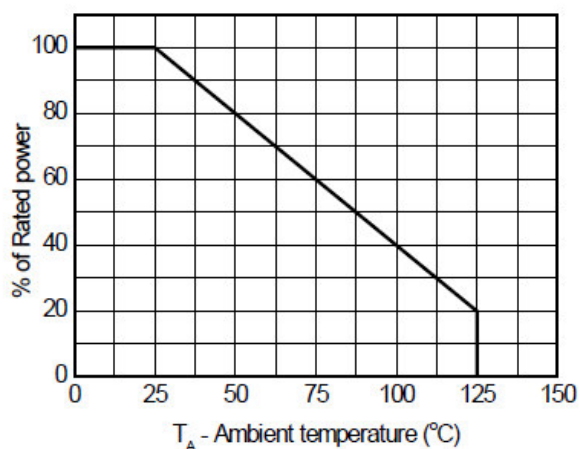
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage



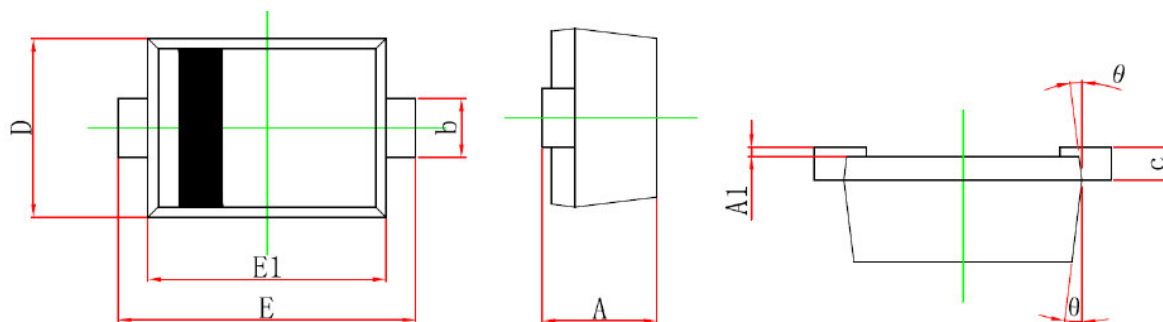
Non-Repetitive Peak Pulse Power vs. Pulse time



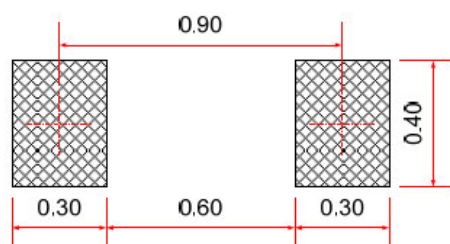
Power derating vs. Temperature



Package Information (SOD-923)



Recommend PCB Layout (Unit: mm)



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.350	-	0.450
A1	0.000	-	0.050
b	0.150	-	0.270
c			0.180
D	0.550	0.600	0.650
E	0.900	1.000	1.100
E1	0.750	0.800	0.850
θ	7° Ref.		

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