

ESDA6V8UR

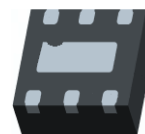
3-Lines, Uni-directional, Ultra-low Capacitance, Transient Voltage Suppressors

Descriptions

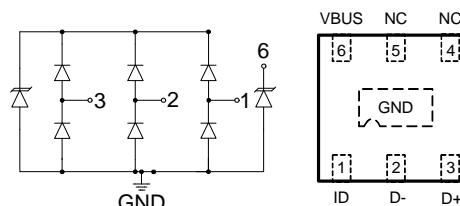
The ESDA6V8UR is a transient voltage suppressors (TVS) which provide a very high level protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). It is designed to replace multilayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

The ESDA6V8UR was past ESD transient voltage up to ±8kV (contact) according to IEC61000-4-2 and withstand peak current up to 3A for 8/20us pulse according to IEC61000-4-5.

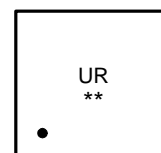
The ESDA6V8UR is available in DFN1.6*1.6 package. Standard products are Pb-free and Halogen-free.



DFN1.6*1.6



Pin configuration (Top view)



UR = Device code
 ** = Week(01~52)

Marking

Features

- ID/D-/D+
 - Working voltage : 5V
 - Peak power (tp=8/20us) : 45W Max.
 - Peak current (tp=8/20us) : 3A Max.
 - Transient protection IEC61000-4-2 : ±15kV air
: ±8kV contact
- VBUS
 - Working voltage : 12V
 - Peak power (tp=8/20us) : 155W Max.
 - Peak current (tp=8/20us) : 4.5A Max.
 - Transient protection IEC61000-4-2 : ±30kV air
: ±30kV contact
- Ultra-low clamping voltage
- Low leakage current
- Small package

Order information

Device	Package	Shipping
ESDA6V8UR-6/TR	DFN1.6*1.6	3000/Tape&Reel

Applications

- Mobile phone
- PAD
- Notebook
- STB
- LCD TV
- Digital camera
- Other electronics equipments

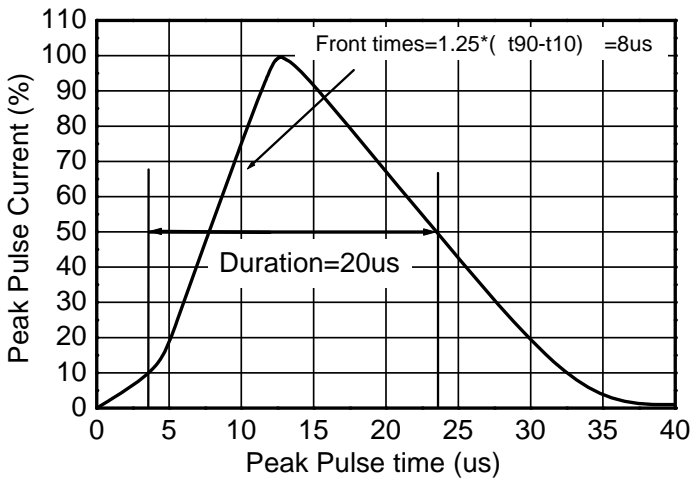
Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55~150	°C
ID/D-/D+ TO GND			
Peak pulse power (tp=8/20us)	Ppk	45	W
Peak pulse current (tp=8/20us)	Ipp	3	A
ESD voltage IEC61000-4-2 (Contact)	V_{ESD}	±8	kV
ESD voltage IEC61000-4-2 (Air)	V_{ESD}	±15	kV
VBUS TO GND			
Peak pulse power (tp=8/20us)	Ppk	155	W
Peak pulse current (tp=8/20us)	Ipp	4.5	A
ESD voltage IEC61000-4-2 (Contact)	V_{ESD}	±30	kV
ESD voltage IEC61000-4-2 (Air)	V_{ESD}	±30	kV

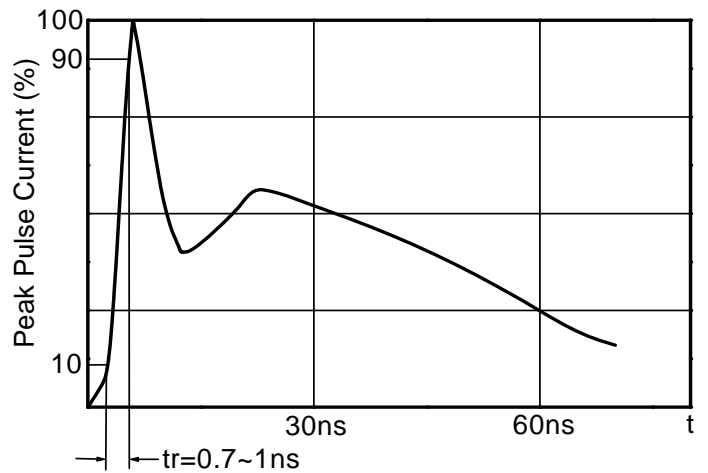
Electronics characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
ID/D-/D+ TO GND						
Reverse maximum working voltage	V_{RWM}				5	V
Reverse leakage current	I_R	$V_{RWM}=5V$			1	uA
Reverse breakdown voltage	V_{BR}	$I_T=1mA$	6.5	8.0	8.8	V
Forward voltage	V_F	$I_F=10mA$	0.55	0.9	1.25	V
Clamping voltage	V_C	Ipp=1A tp=8/20us			11	V
		Ipp=3A tp=8/20us			15	V
Junction capacitance	C_J	ID/D-/D+ TO GND		0.7	0.9	pF
VBUS TO GND						
Reverse maximum working voltage	V_{RWM}				12	V
Reverse leakage current	I_R	$V_{RWM}=12V$			50	nA
Reverse breakdown voltage	V_{BR}	$I_T=1mA$	15	16.5	18	V
Forward voltage	V_F	$I_F=10mA$	0.55	0.9	1.25	V
Clamping voltage	V_C	Ipp=1A tp=8/20us			21	V
		Ipp=4.5A tp=8/20us			35	V
Junction capacitance	C_J	VBUS TO GND		25	35	pF

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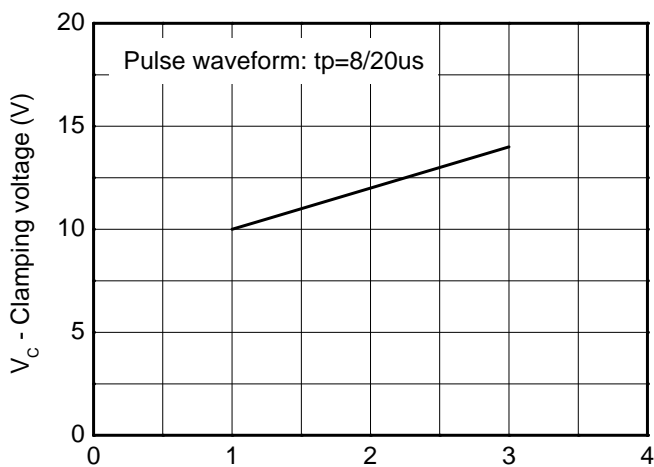


8/20us waveform

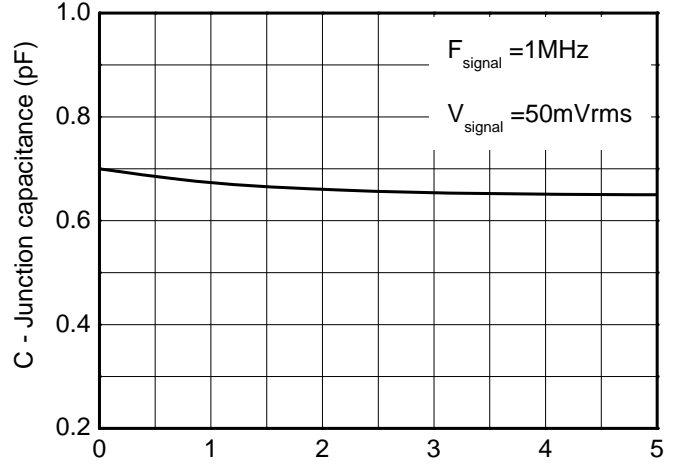


IEC61000-4-2 waveform

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



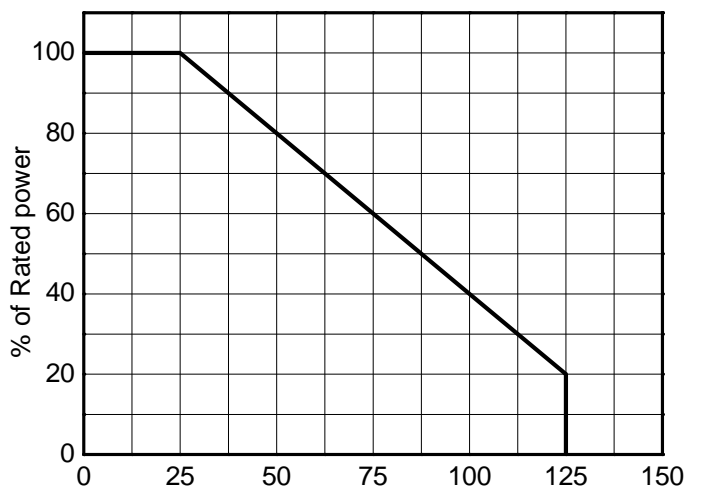
**Clamping voltage vs. Peak pulse current
ID/D-/D+ TO GND**



**Capacitance vs. Revers voltage
ID/D-/D+ TO GND**

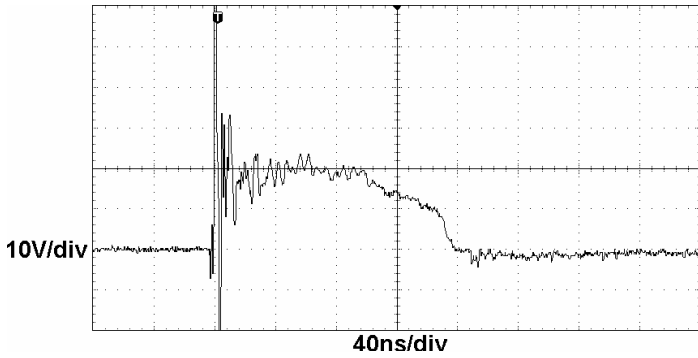


**Non-Repetitive Peak Pulse Power vs. Pulse time
ID/D-/D+ TO GND**

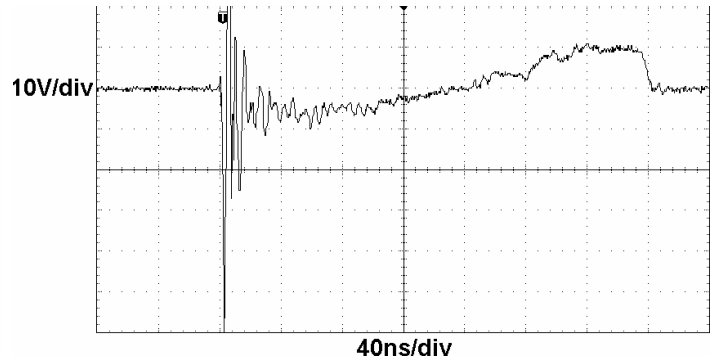


**Power derating vs. Temperature
ID/D-/D+ TO GND**

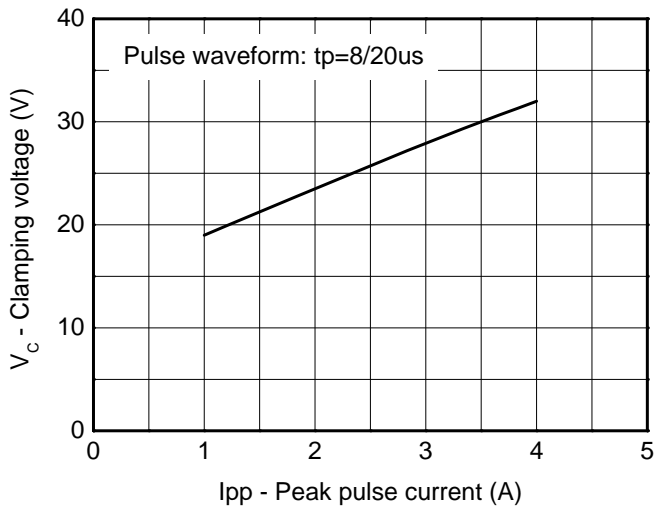
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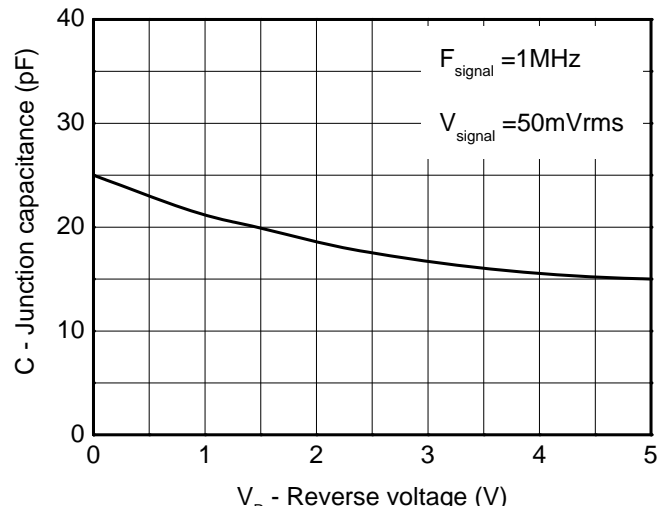
ESD Clamping
(IEC61000-4-2 +8kV contact)
ID/D-/D+ TO GND



ESD Clamping
(IEC61000-4-2 -8kV contact)
ID/D-/D+ TO GND



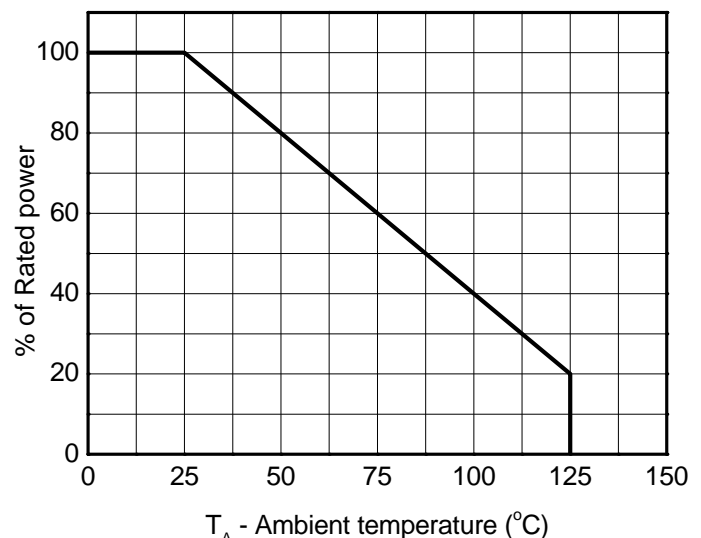
Clamping voltage vs. Peak pulse current
VBUS TO GND



Capacitance vs. Reverse voltage
VBUS TO GND

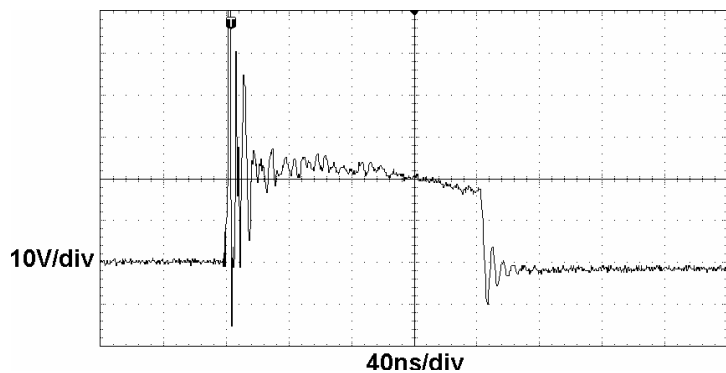


Capacitance vs. Reverse voltage
VBUS TO GND

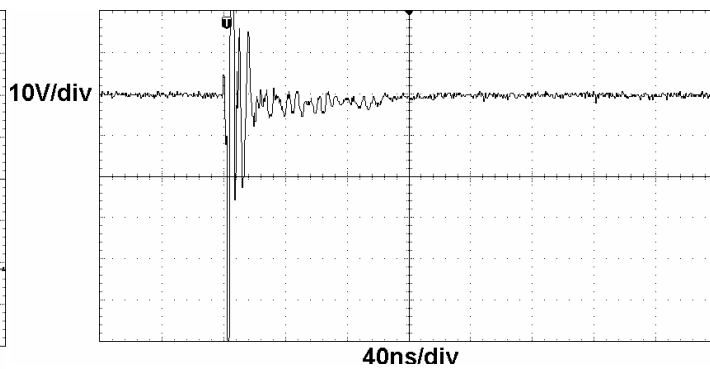


Power derating vs. Temperature
VBUS TO GND

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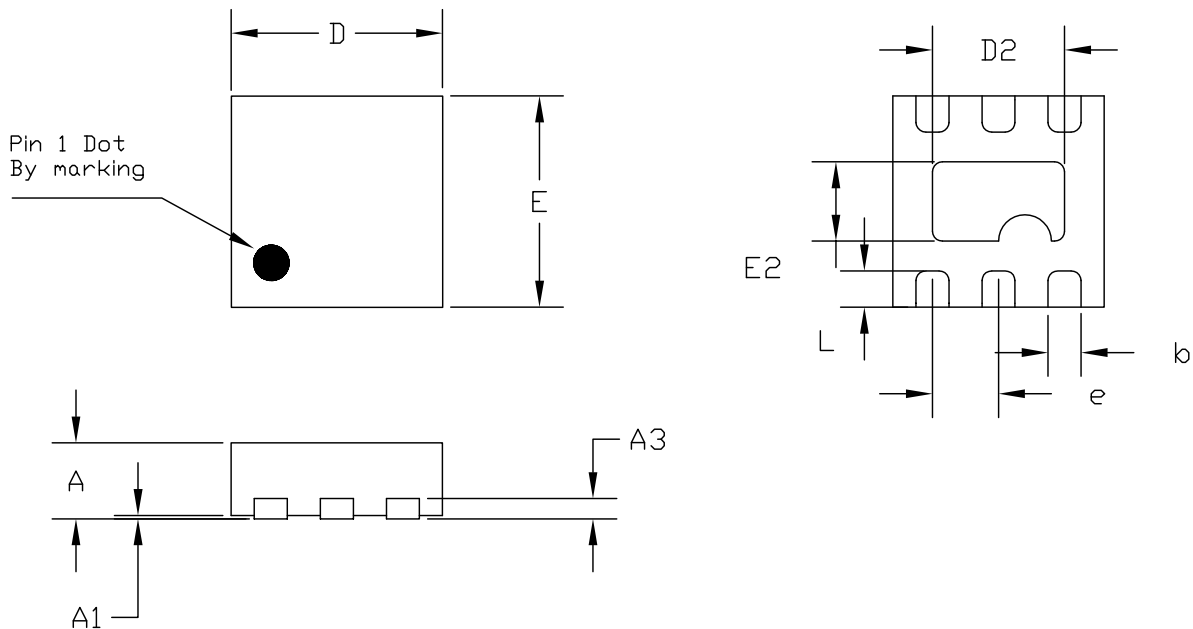
ESD Clamping
(IEC61000-4-2 +8kV contact)
VBUS TO GND



ESD Clamping
(IEC61000-4-2 -8kV contact)
VBUS TO GND

Package outline dimensions

DFN1.6*1.6



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	>0.50	0.55	0.600
A1	0.00	—	0.05
A3	0.15REF		
D	1.55	1.60	1.65
E	1.55	1.60	1.65
D2	0.90	1.00	1.05
E2	0.50	0.60	0.65
L	0.175	0.275	0.375
b	0.20	0.25	0.30
e	0.50 BSC		

Recommend PCB Layout (Unit: mm)

