

ESD12VAPH

Features

- 500 watts peak pulse power per line (tP=8/20μs)
- Protects two I/O lines with uni-directional
- Low clamping voltage
- Working voltages:12V
- Low leakage current
- RoHS Compliance
- SOT-23 package

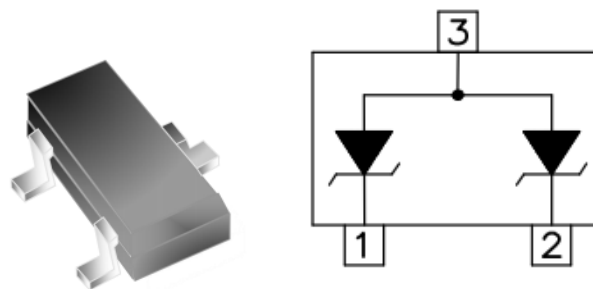
Applications

- RS-232, RS-422 & RS-485
- Servers, notebook, and desktop
- Cellular handsets and accessories
- Control & monitoring systems
- Portable electronics
- Wireless bus protection
- Set-top box

Protection Solution To Meet

- IEC61000-4-2 (ESD) ±30kV (air),±30kV (contact)
- IEC61000-4-4 (EFT) 40A(5/50ns)
- IEC61000-4-5 (lightning) 20A(8/20μs)

Pin Configuration



Absolute Maximum Ratings

Tamb=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	500	W
ESD per IEC 61000-4-2 (Air)	VESD	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	
Lead soldering temperature	TL	260 (10 sec.)	°C
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	TSTJ	-55 to +150	°C

Electrical Characteristics

TA=25°C unless otherwise specified

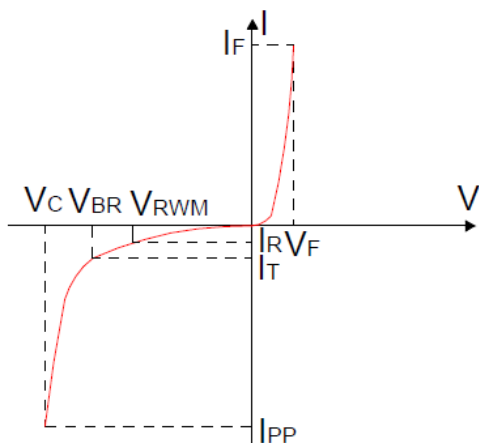
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	VRWM				12	V
Reverse breakdown voltage	VBR	IT=1mA	13			V
Reverse leakage current	IR	VRWM=12V			0.15	μ A
Clamping voltage	VC	IPP ^① =1A, tP=8/20 μ s		14	18	V
		IPP ^① =20A, tP=8/20 μ s		23	26	
Junction capacitance	CJ ^②	VRWM=0V, f=1MHz Any I/O pin to GND		90		pF
Junction capacitance	CJ ^③	VRWM=0V, f=1MHz Between I/O pins		45		pF

① Surge waveform: 8/20 μ s

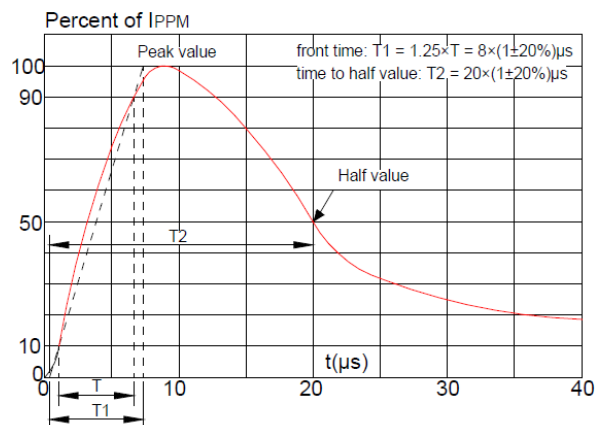
② CJ measured @VRWM=0V,1MHz (pin1 to pin3, pin2 to pin3)

③ CJ measured @VRWM=0V,1MHz (pin1 to pin2, pin2 to pin1)

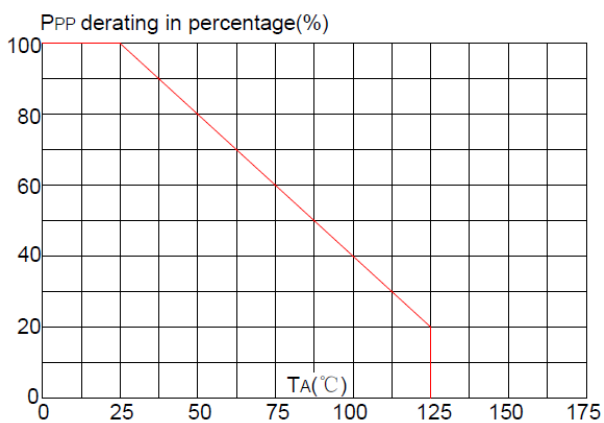
Characteristic Curves



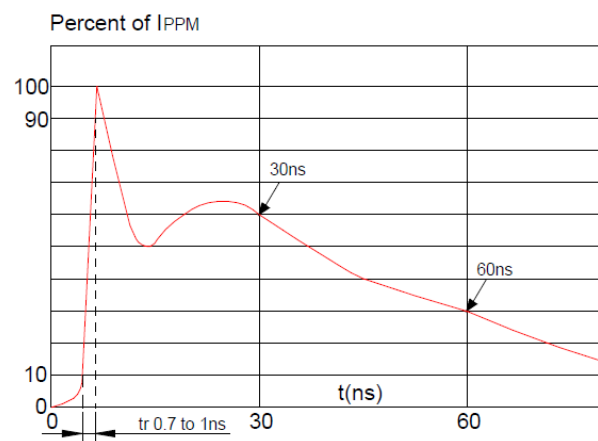
V- I curve characteristics



Pulse waveform (8/20μs)

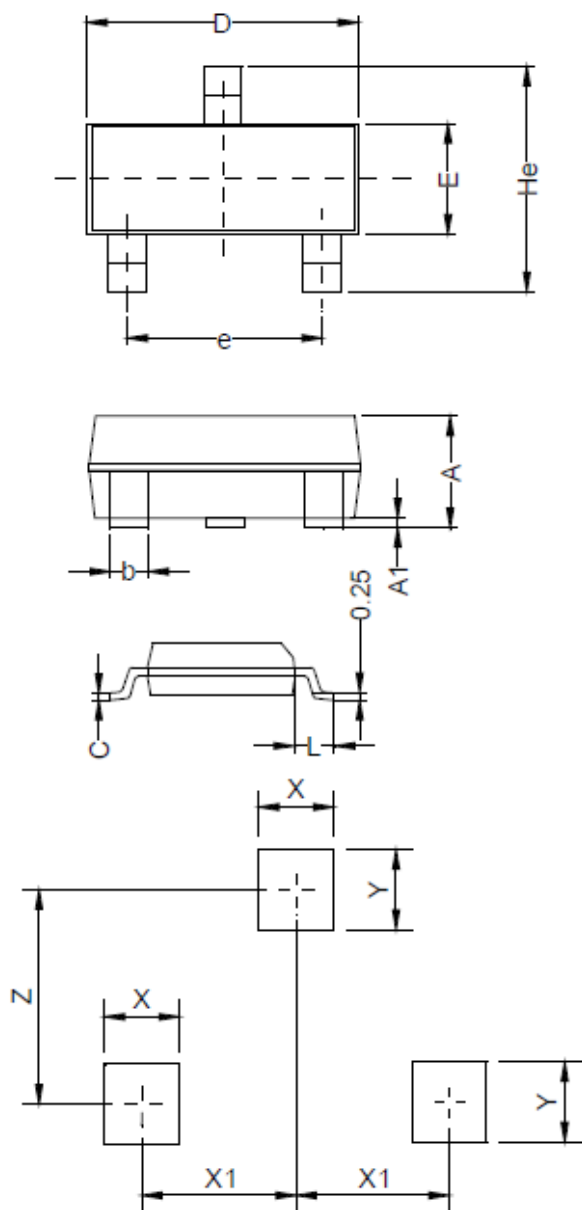


Pulse derating curve



ESD clamping (30kV contact)

PACKAGE MECHANICAL DATA(SOT-23)



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.25	0.325	0.010	0.013
C	0.22	0.25	0.009	0.010
D	2.80	3.00	0.110	0.118
e	1.80	1.90	0.071	0.075
E	1.20	1.40	0.047	0.055
L	0.30	0.50	0.012	0.020
He	2.25	2.55	0.089	0.100
X	0.80		0.031	
X1	0.95		0.037	
Y	0.80		0.031	
Z	2.02		0.080	