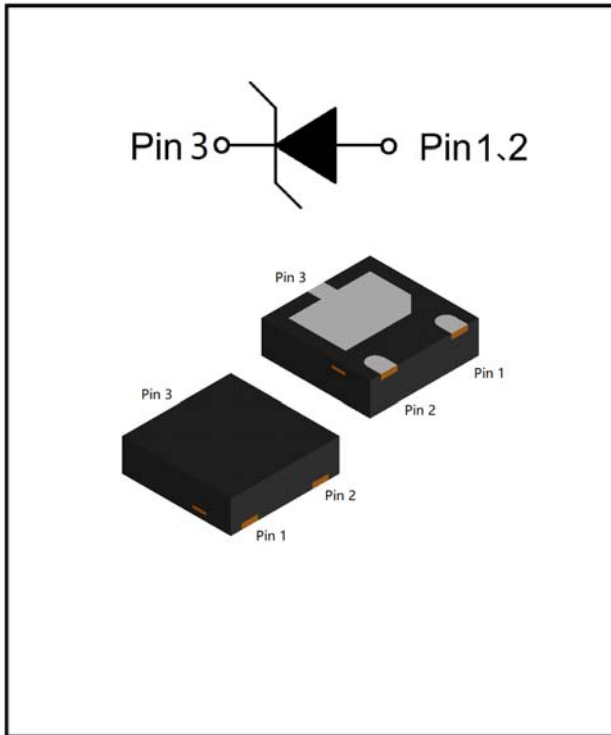


1-Line, Uni-directional, Transient Voltage Suppressor



Features

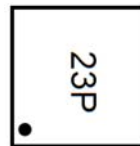
- Stand-off voltage: 24V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 140A (8/20 μs)
- Low leakage current
- Low clamping voltage
- Low clamping voltage:
- RoHS Compliant

Applications

- Power Management
- Industrial Application
- Power Supply Protection

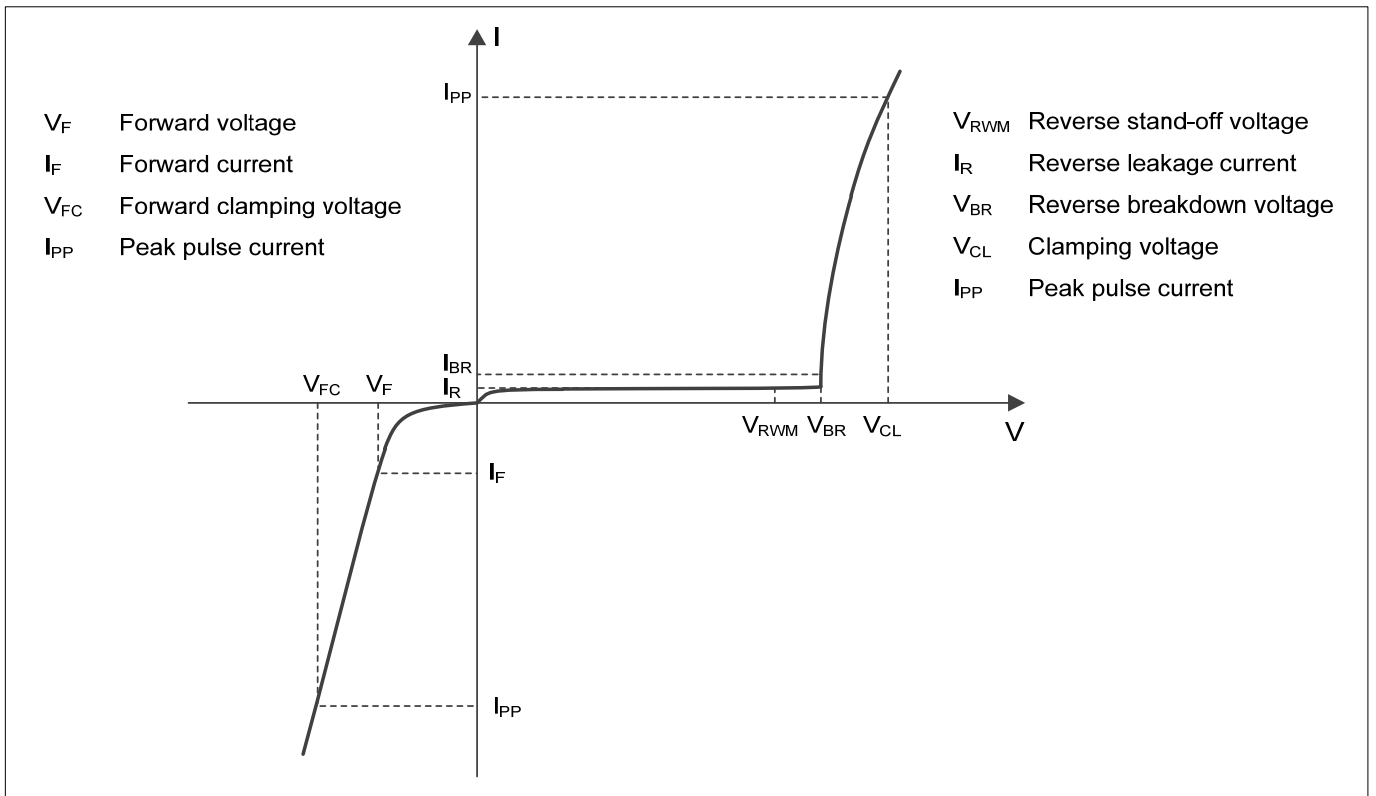
Mechanical Data

- Package: DFN2020-3L
- Case Material: "Green" Molding Compound
- Marking Information: See Below



Marking Code: 23P
Dot denotes Pin1

■ Definitions of electrical characteristics





ESD24VP4A2

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	7000	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{pp}	140	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	
Junction temperature	T_J	-55~125	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

■Electrical Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				24
Reverse leakage current	I_R	μA	$V_{RWM} = 24V$			1
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	24.8		30
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 50A, t_p = 8/20\mu s$			32
		V	$I_{PP} = 140A, t_p = 8/20\mu s$			50
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$		410	

Notes:

(1). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD24VP4A2	F1	Approximate 010	3000	30000	120000	7" reel



ESD24VP4A2

■ Characteristics (Typical)

Fig.1 8/20 μ s waveform per IEC61000-4-5

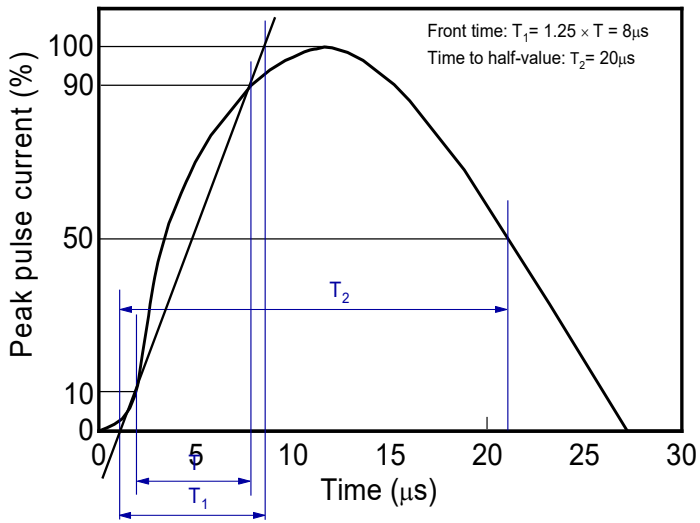


Fig.2 Contact discharge current waveform per IEC61000-4-2

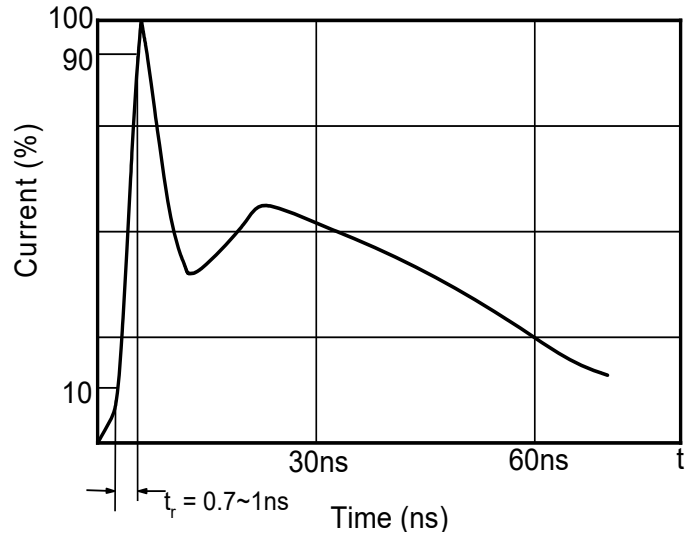


Fig.3 Clamping voltage vs. Peak pulse current

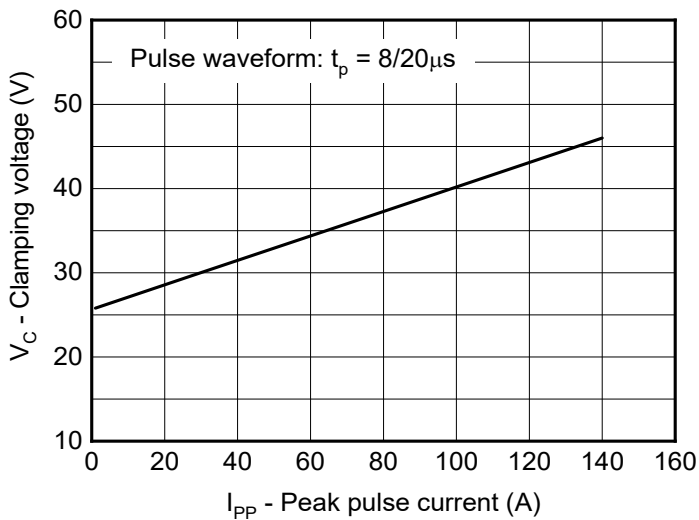


Fig.4 Capacitance vs. Reverse voltage

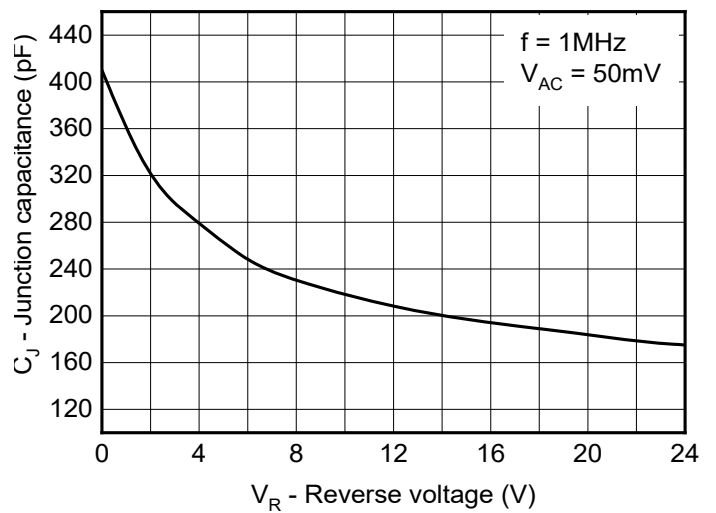


Fig.5 Non-repetitive peak pulse power vs. Pulse time

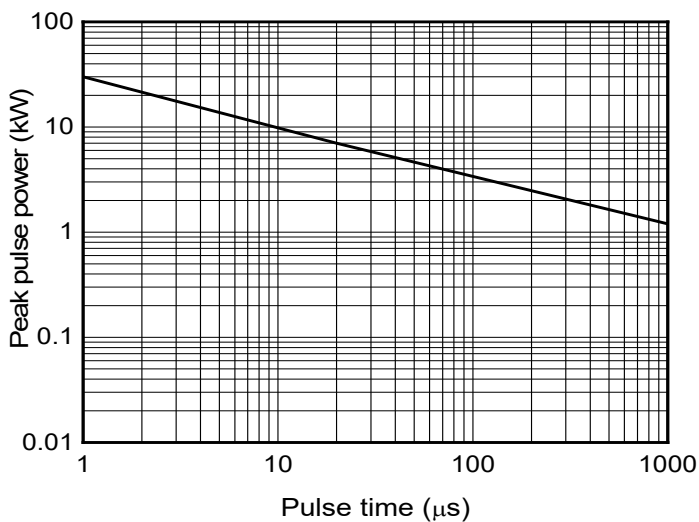
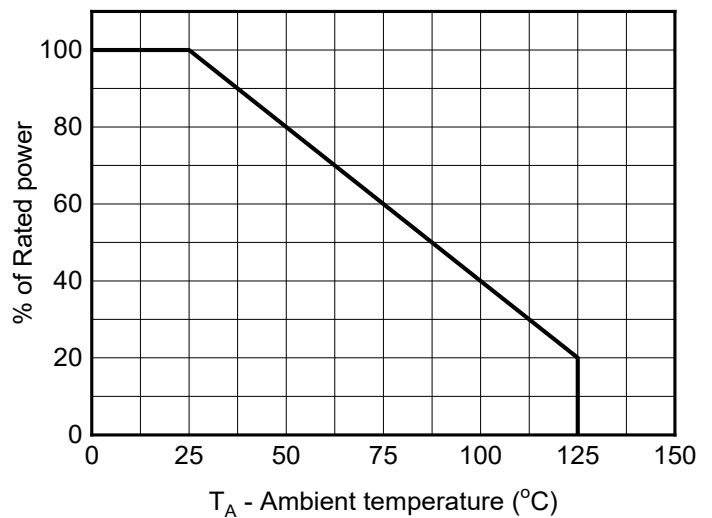


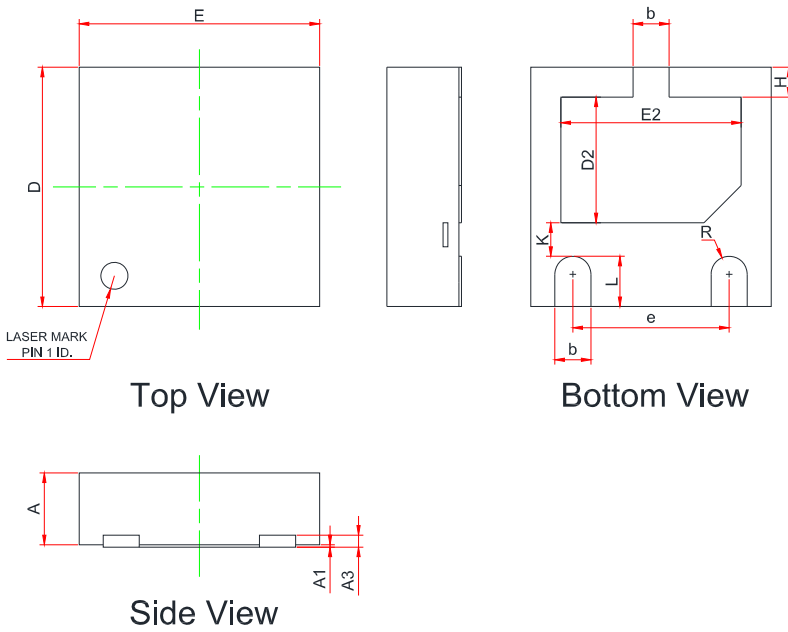
Fig.6 Power derating vs. Ambient temperature





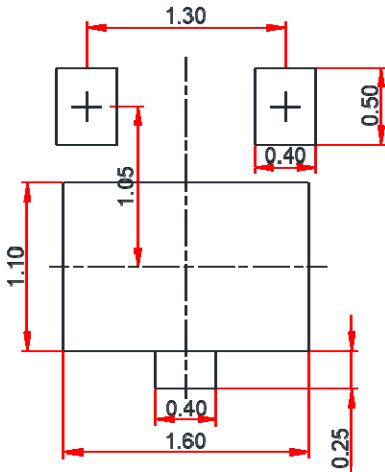
ESD24VP4A2

■ Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.55	0.60	0.80
A1	0.00	0.02	0.05
A3	0.10 REF.		
b	0.25	0.30	0.35
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.95	1.05	1.15
E2	1.40	1.50	1.60
e	1.20	1.30	1.40
H	0.20	0.25	0.30
K	0.20	0.30	0.40
L	0.35	0.40	0.45
R	0.13	-	-

■ Recommended PCB Layout



Unit:mm

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met



ESD24VP4A2

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