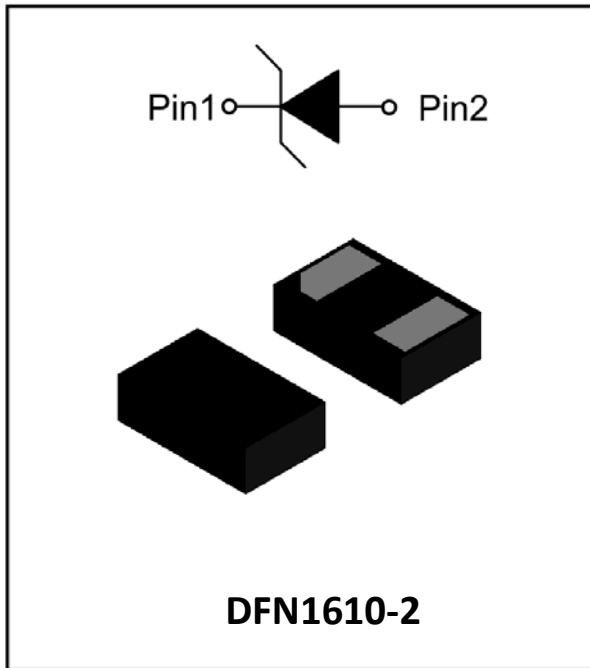


## 1-Line , Uni-directional , Transient Voltage Suppressor



### Features

- Ultra small package
- Stand-off voltage: 18V
- Transient protection for each line according to
  - IEC61000-4-2(ESD):  $\pm 30\text{kV}$  (contact)
  - IEC61000-4-4 (EFT): 80A (5/50ns)
  - IEC61000-4-5(surge):40A (8/20 $\mu\text{s}$ )
- Low clamping voltage
- RoHS Compliant

### Applications

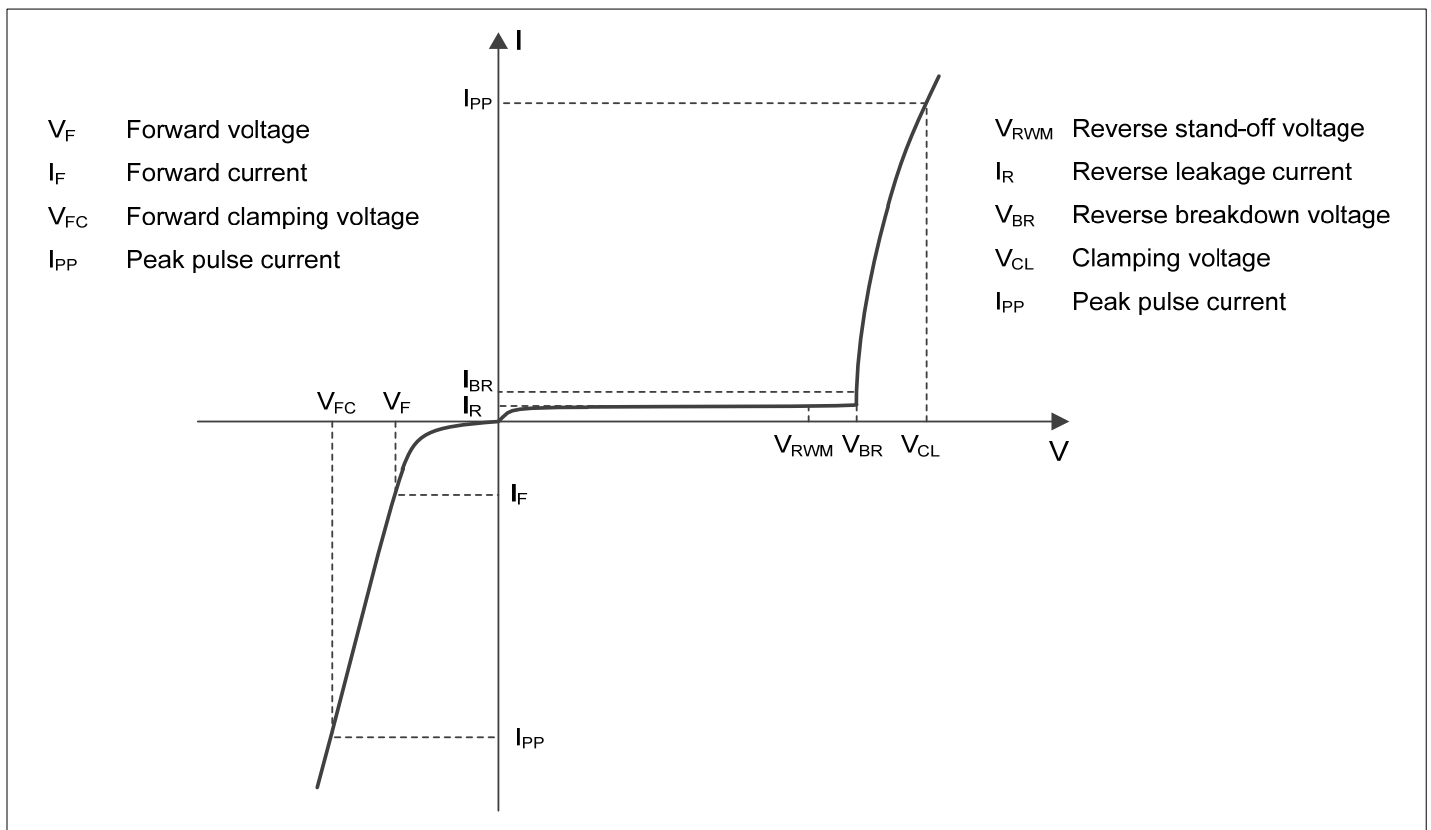
- Power supply protection
- Power management
- Battery Contacts

### Mechanical Characteristics

- Package: DFN1610-2L
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



### ■Definitions of electrical characteristics





# ESD24VP6A

## ■Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{pk}$	1720	W
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	40	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	kV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	
Operating Temperature Range	$T_J$	-55~125	°C
Storage Temperature Range	$T_{STG}$	-55~150	°C

## ■Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	$V_{RWM}$	V				24
Reverse leakage current	$I_R$	$\mu A$	$V_{RWM} = 24V$			1
Reverse breakdown voltage	$V_{BR}$	V	$I_{BR} = 1mA$	24.7		29
Forward voltage	$V_F$	V	$I_F = 20mA$	0.45		1.25
Clamping voltage <sup>1)</sup>	$V_{CL}$	V	$I_{PP} = 40A, t_p = 8/20\mu s$			43
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		210	250

Notes:

(1). Non-repetitive current pulse, according to IEC61000-4-5. (8/20 $\mu s$  current waveform).

## ■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD24VP6A	F1	Approximate 270	3000	30000	120000	7" reel



# ESD24VP6A

## ■ Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig.1 8/20 $\mu\text{s}$  waveform per IEC61000-4-5

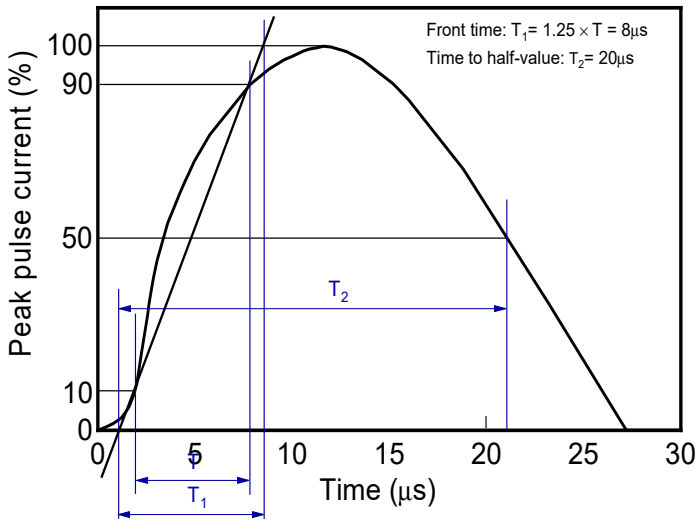


Fig.2 Contact discharge current waveform per IEC61000-4-2

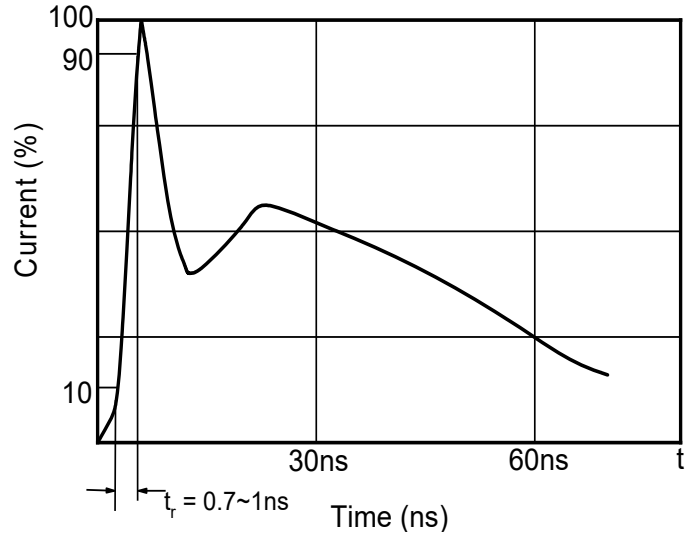


Fig.3 Clamping voltage vs. Peak pulse current

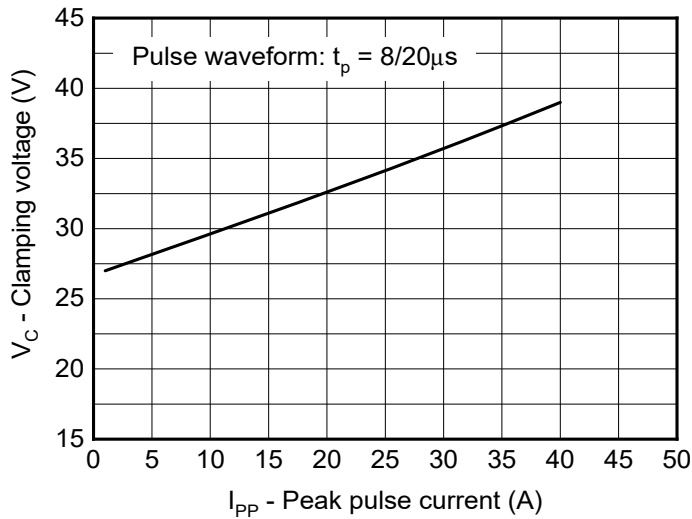


Fig.4 Non-repetitive peak pulse power vs. Pulse time

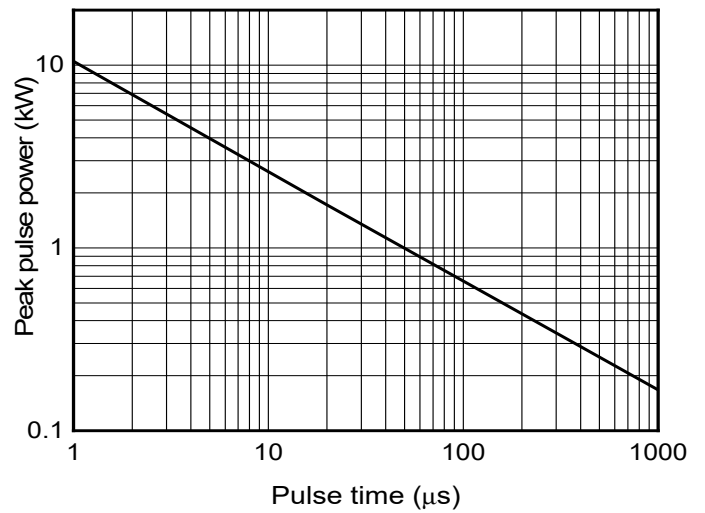
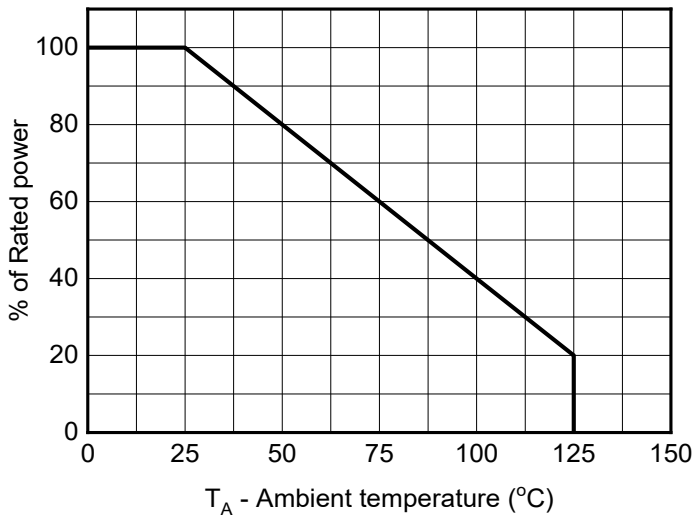


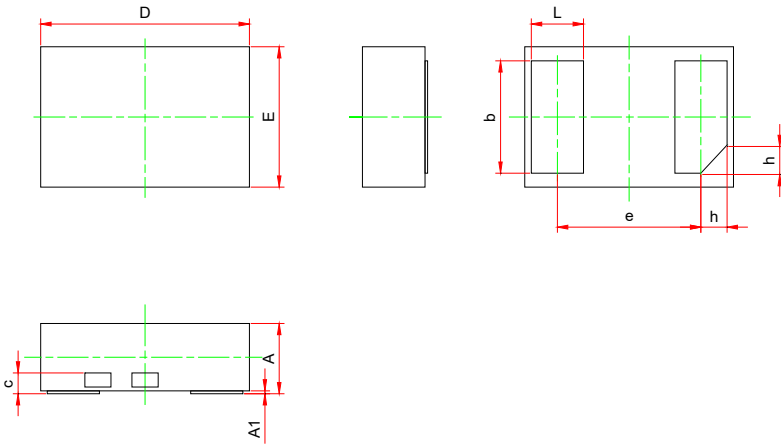
Fig.4 Power derating vs. Ambient temperature





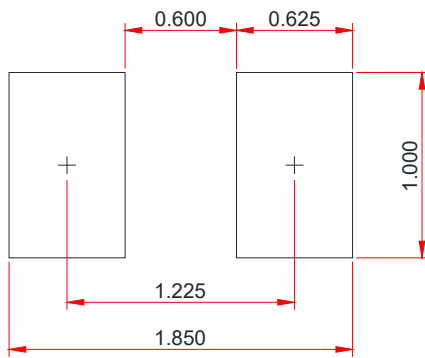
# ESD24VP6A

## ■ Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
c	0.15 Ref.		
b	0.75	0.80	0.85
L	0.35	0.40	0.45
D	1.55	1.60	1.65
E	0.95	1.00	1.05
e	1.10 BSC		
h	0.20 Ref.		

## ■ Recommend land pattern (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.



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