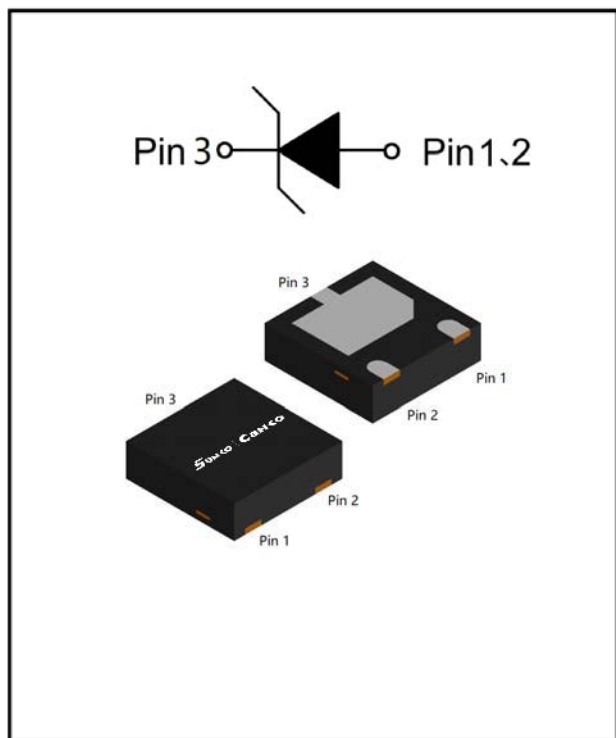


## 1-Line, Uni-directional, Transient Voltage Suppressor



### Features

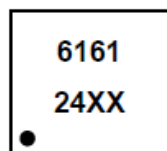
- Stand-off voltage: 24V Max
- Transient protection for each line according to  
IEC61000-4-2(ESD):  $\pm 30\text{kV}$  (contact)  
IEC61000-4-5(surge): 200A (8/20 $\mu\text{s}$ )
- Low leakage current
- Low clamping voltage
- Low clamping voltage:
- Compliant

### Applications

- Power Management
- Industrial Application
- Power Supply Protection

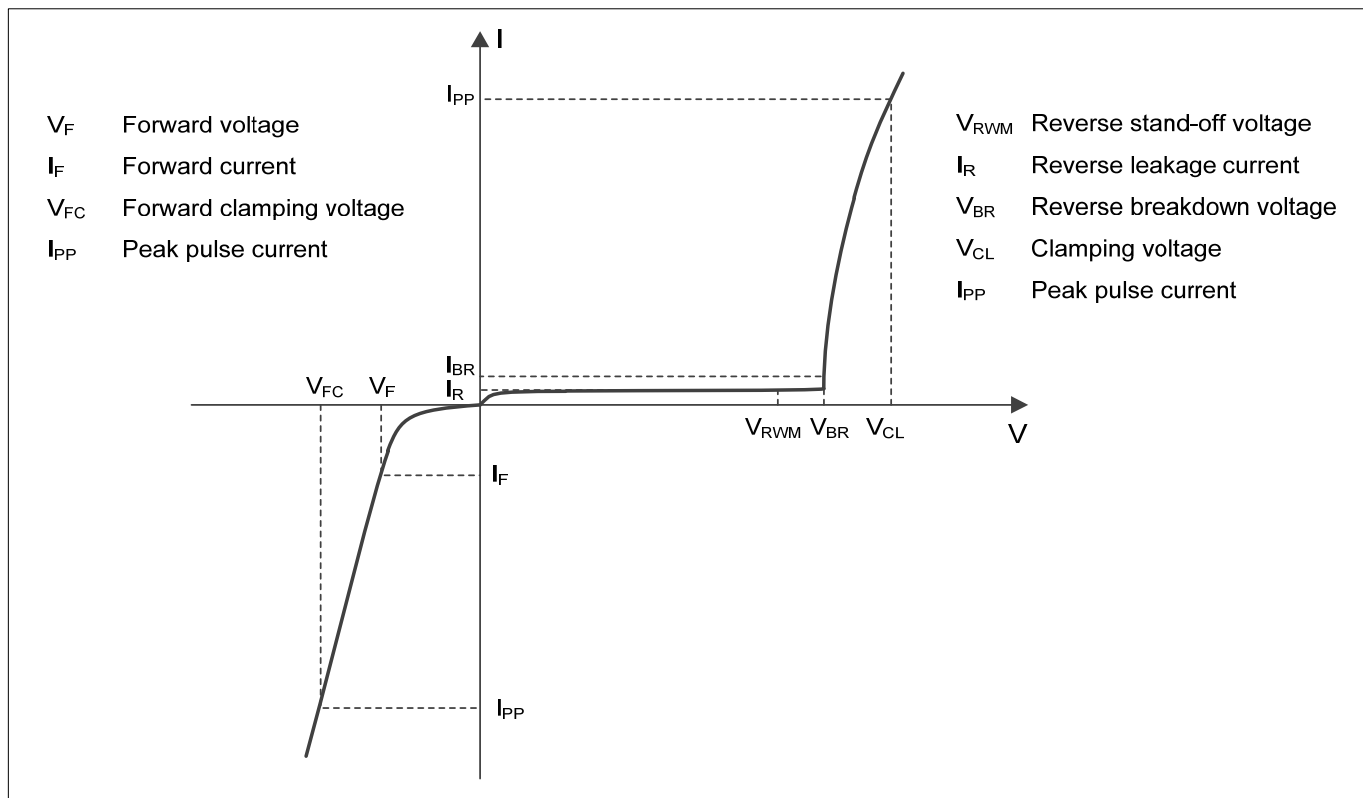
### Mechanical Data

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



6161/24 = Device Marking Code  
XX = Date code

### Definitions of electrical characteristics



## ■Maximum Ratings

| PARAMETER                                       | SYMBOL    | LIMITS   | UNIT |
|-------------------------------------------------|-----------|----------|------|
| Peak pulse power ( $t_p = 8/20\mu s$ )          | $P_{pk}$  | 6400     | W    |
| Peak pulse current ( $t_p = 8/20\mu s$ )        | $I_{PP}$  | 200      | A    |
| ESD according to IEC61000-4-2 air discharge     | $V_{ESD}$ | $\pm 30$ | kV   |
| ESD according to IEC61000-4-2 contact discharge |           | $\pm 30$ |      |
| Junction temperature                            | $T_J$     | -55~125  | °C   |
| Storage temperature                             | $T_{STG}$ | -55~150  | °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 breakdown voltage       | $V_{BR}$  | V       | $I_{BR} = 1mA$                   | 25  |     |     |
| Reverse leakage current         | $I_R$     | $\mu A$ | $V_{RWM} = 24V$                  |     |     | 0.5 |
| Clamping voltage <sup>1)</sup>  | $V_{CL}$  | V       | $I_{PP} = 1A, t_p = 8/20\mu s$   |     |     | 30  |
|                                 |           | V       | $I_{PP} = 200A, t_p = 8/20\mu s$ |     |     | 32  |
| Junction capacitance            | $C_J$     | pF      | $V_R = 0V, f = 1MHz$             |     |     | 800 |

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 |
|--------------|--------------|-----------------|----------------------|-------------------------|----------------------------|---------------|
| PESD24VP4A1  | F1           | Approximate 010 | 3000                 | 30000                   | 120000                     | 7" reel       |

## ■ Characteristics (Typical)

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

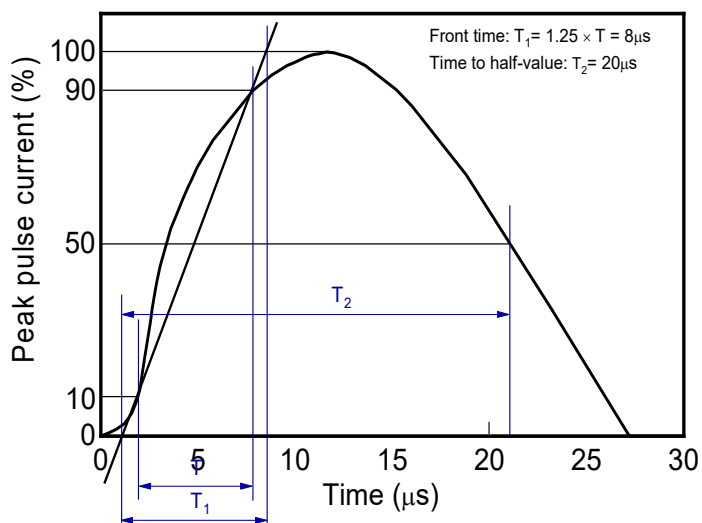


Fig.2 Contact discharge current waveform per IEC61000-4-2

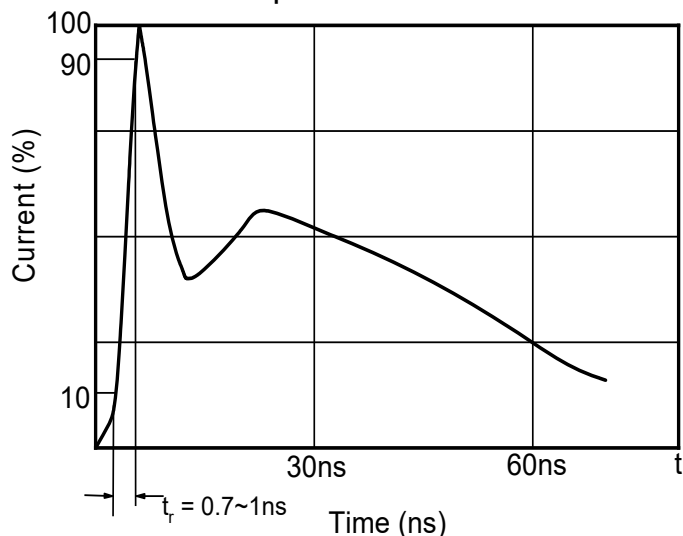


Fig.3 Clamping voltage vs. Peak pulse current

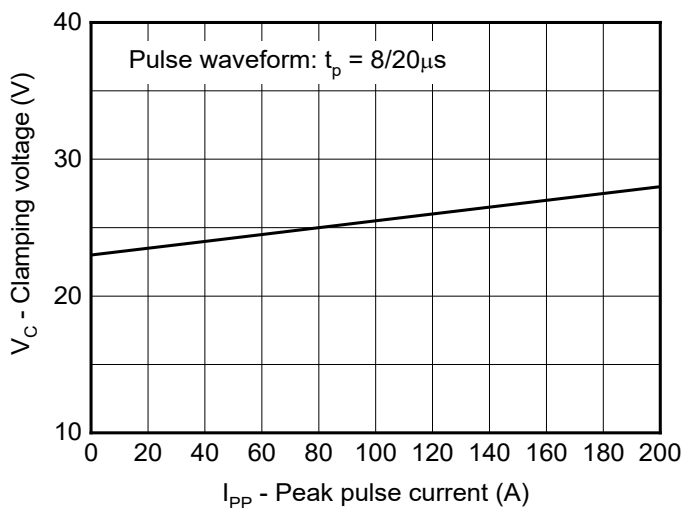


Fig.4 Capacitance vs. Reverse voltage

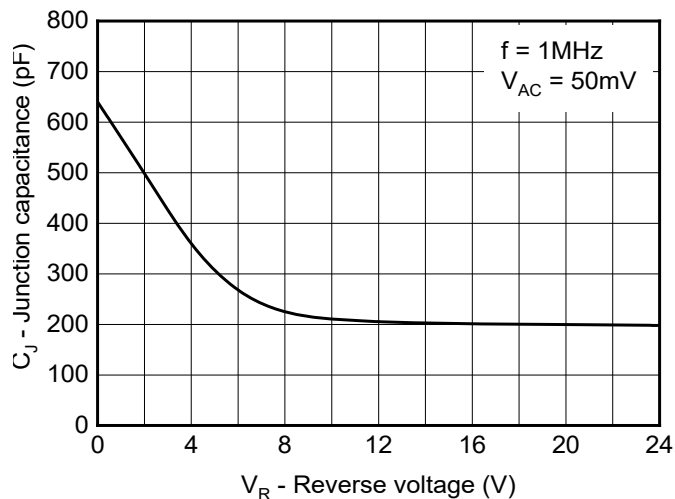


Fig.5 Non-repetitive peak pulse power vs. Pulse time

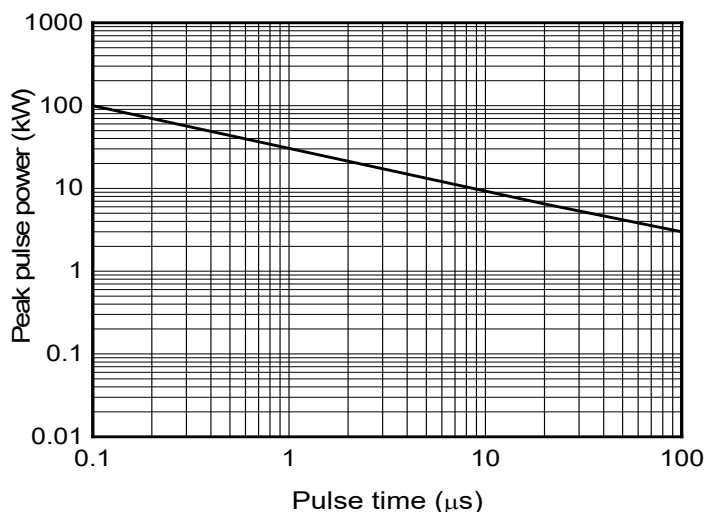
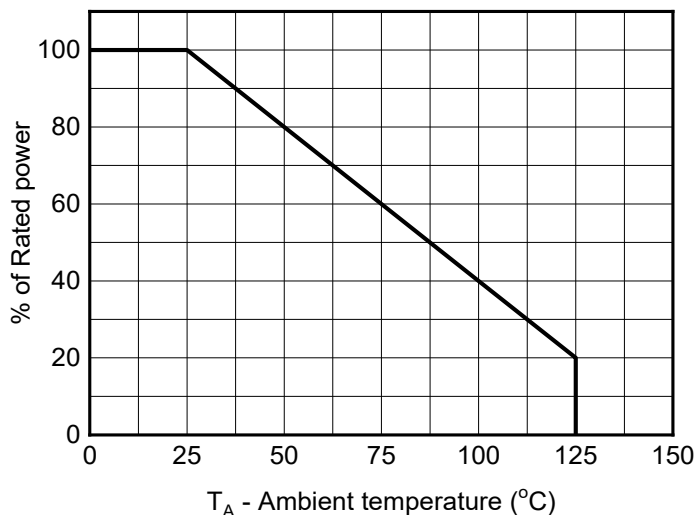
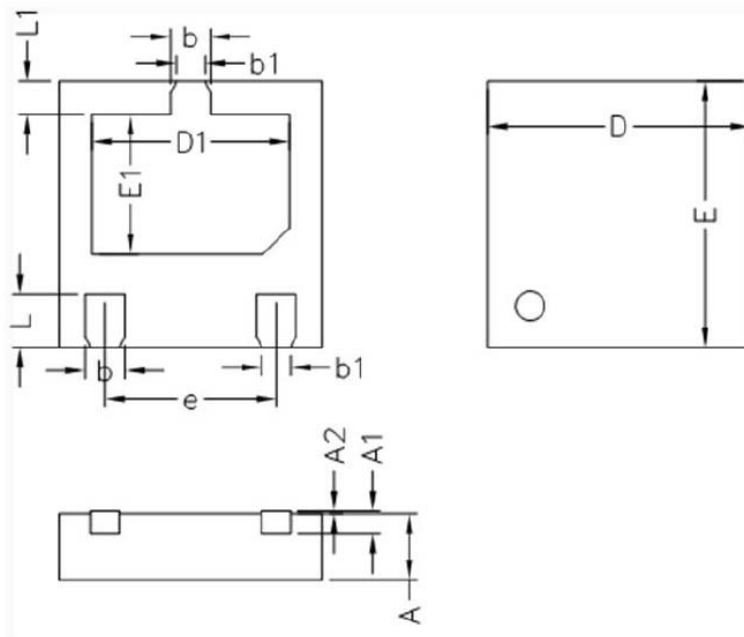


Fig.6 Power derating vs. Ambient temperature

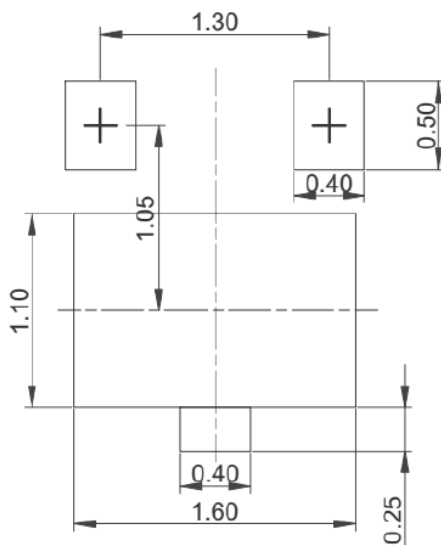


## ■ Outline Dimensions



| SYM | MILLIMETERS |      |      |
|-----|-------------|------|------|
|     | MIN         | NOM  | MAX  |
| A   | 0.45        | 0.50 | 0.60 |
| A1  | 0.15REF     |      |      |
| A2  | 0.00        | 0.02 | 0.05 |
| b   | 0.25        | 0.30 | 0.35 |
| b1  | 0.22REF     |      |      |
| D   | 1.95        | 2.00 | 2.05 |
| D1  | 1.45        | 1.50 | 1.55 |
| E   | 1.95        | 2.00 | 2.05 |
| E1  | 1.00        | 1.05 | 1.10 |
| e   | 1.30BSC     |      |      |
| L   | 0.35        | 0.40 | 0.45 |
| L1  | 0.20        | 0.25 | 0.30 |

## ■ 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

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