

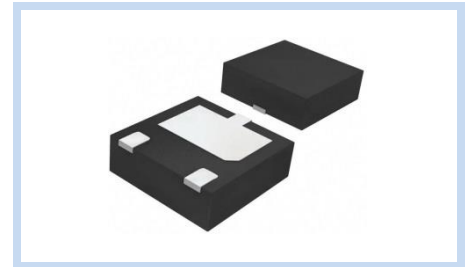
ESD Suppressor 12V Unidirectional DFN2020

ME121U25D2020

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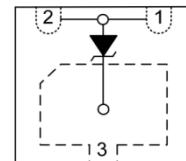
FEATURE

- IEC 61000-4-2 ESD: $\pm 30\text{KV}$ (Air) $\pm 30\text{KV}$ (Contact)
- ESD Protection for one Unidirectional Channel
- High Surge Capability
- Low Leakage Current
- Low Clamping Voltage
- Solid-State Silicon-Avalanche Technology



APPLICATION

- Power Port Protection
- I²C Bus Protection
- Computer Interfaces Protection
- Microprocessors Protection
- Peripherals



MAXIMUM RATINGS AND CHARACTERISTICS

| Parameter | Symbol | Value | Unit |
|---|----------------|----------|--------------------|
| ESD Voltage (Contact discharge) | V_{ESD} | ± 30 | KV |
| ESD Voltage (Air discharge) | | ± 30 | |
| Peak Pulse Power ($t_p=10/1000\mu\text{s}$) | P_{PP} | 400 | W |
| Peak Pulse Power ($t_p=8/20\mu\text{s}$) | P_{PP} | 4000 | W |
| Operating & Storage Temperature Range | T_J, T_{STG} | -55~+150 | $^{\circ}\text{C}$ |

ELECTRICAL CHARACTERISTICS

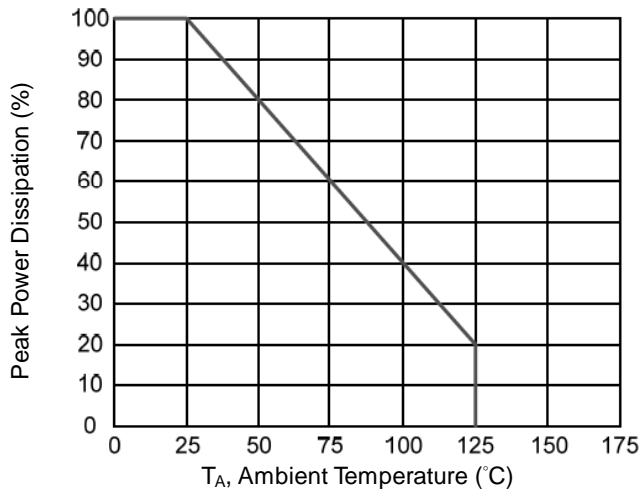
| Parameter | Condition | Symbol | Min. | Typ. | Max. | Unit |
|--------------------------------|---|-----------|------|------|------|---------------|
| Reverse Stand-Off Voltage | -- | V_{RWM} | -- | -- | 12 | V |
| Reverse Breakdown Voltage | $I_{BR}=1\text{mA}$ | V_{BR} | 13 | -- | -- | V |
| Reverse Leakage Current | $V_R=12\text{V}$ | I_R | -- | -- | 1 | μA |
| Clamping Voltage | $I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$ | V_C | -- | -- | 25 | V |
| Clamping Voltage | $I_{PP}=130\text{A}, t_p=8/20\mu\text{s}$ | V_C | -- | -- | 45 | V |
| Off State Junction Capacitance | $V_{dc}=0, f=1\text{MHz}$ Between I/O pins and GND | C_J | -- | 1200 | 2000 | pF |

Notes:

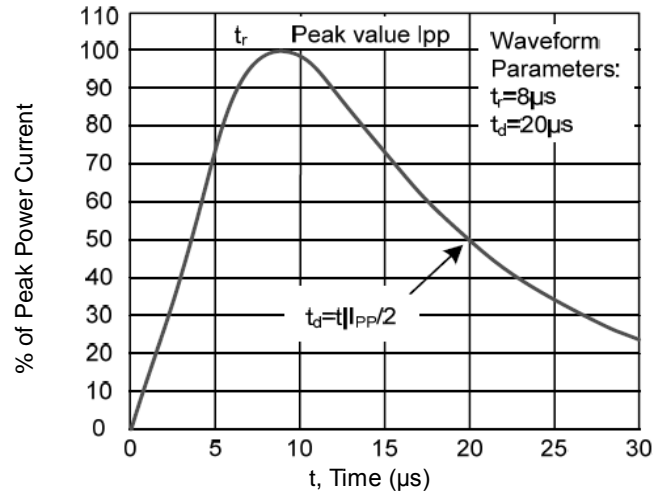
1. $T_J=25^{\circ}\text{C}$ unless otherwise specified

CHARACTERISTIC CURVES

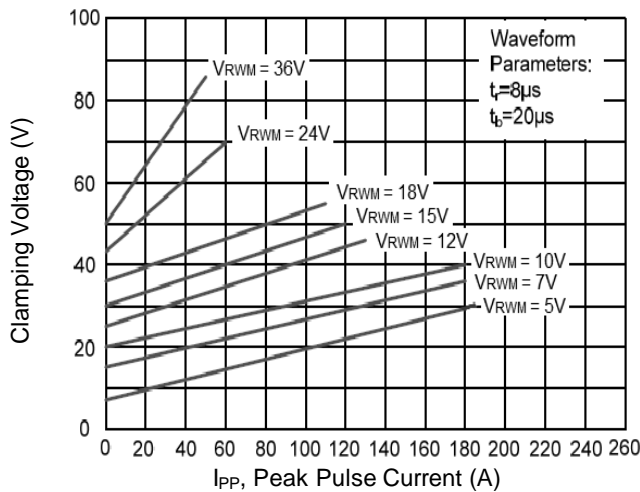
Power Derating Curve



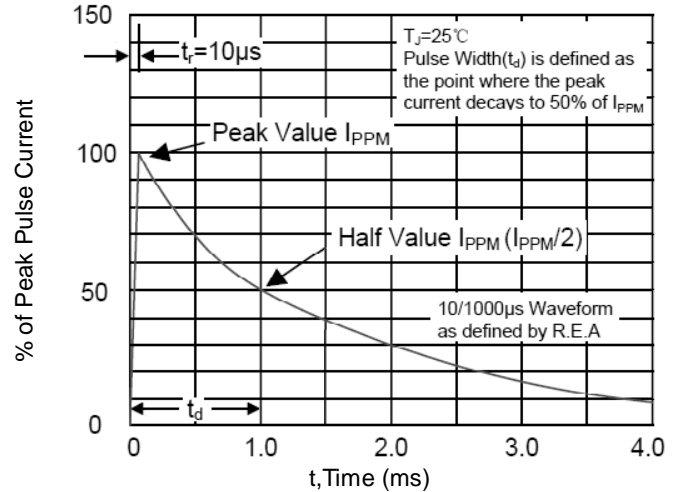
8/20µs Pulse Waveforms



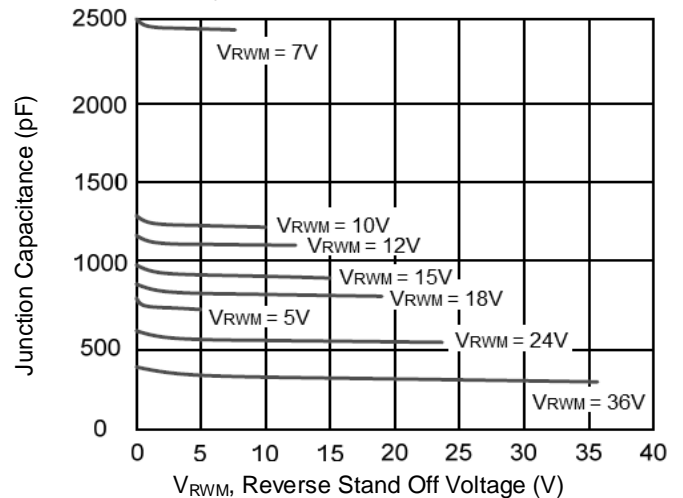
Clamping Voltage vs. Peak Pulse Current



10/1000µs Pulse Waveform



Typical Junction Capacitance



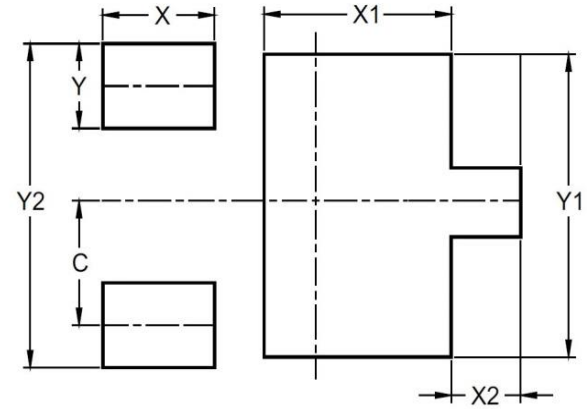
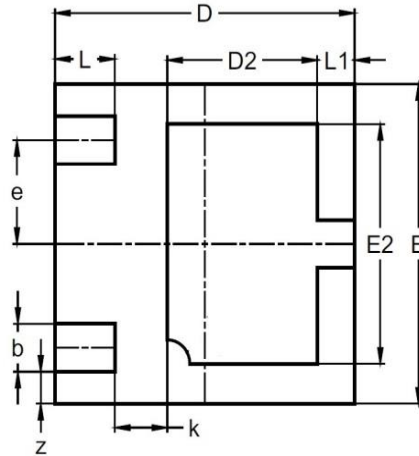
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DIMENSIONS AND RECOMMENDED LAND PATTERN

| Item | Min (mm) | Max (mm) |
|------|----------|----------|
| A | 0.50 | 0.60 |
| b | 0.30 | 0.30 |
| D | 1.90 | 2.10 |
| D2 | 0.90 | 1.15 |
| E | 1.90 | 2.10 |
| E2 | 1.40 | 1.60 |
| e | 0.65 | 0.65 |
| k | 0.20 | 0.45 |
| L | 0.32 | 0.47 |
| L1 | 0.20 | 0.30 |
| z | 0.50 | 0.50 |
| C | 0.60 | 0.60 |
| X | 0.50 | 0.50 |
| X1 | 1.10 | 1.10 |
| X2 | 0.25 | 0.25 |
| Y | 0.40 | 0.40 |
| Y1 | 1.60 | 1.60 |
| Y2 | 1.60 | 1.60 |



*Specifications subject to change without notice.