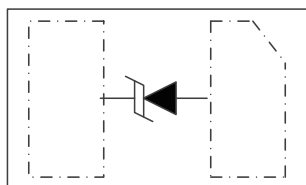


## Surface Mount Transient Voltage Suppressor Diode

### Features

- ✧ Uni-directional protection of one power line
- ✧ Solid-state silicon-avalanche technology
- ✧ Working Voltage: 6.8V
- ✧ Peak Power up to 980 Watts @ 8 x 20 $\mu$ s Pulse
- ✧ Low Leakage current
- ✧ Response Time is Typically < 1 ns
- ✧ IEC 61000-4-2 (ESD)  $\pm$ 30kV (air),  $\pm$ 30kV (contact)
- ✧ IEC 61000-4-4 (EFT) 60A (5/50ns)



Circuit Diagram

### Applications

- ✧ Cellular Handsets & Accessories
- ✧ Portable devices
- ✧ Digital cameras
- ✧ Power supplies

### Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ Reel Size : 7 inch
- ✧ RoHS/WEEE Compliant



DFN1610

### Absolute Maximum Rating at $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Rating                                                         | Symbol    | Value                | Units              |
|----------------------------------------------------------------|-----------|----------------------|--------------------|
| Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )                   | $P_{PP}$  | 980                  | Watts              |
| Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ ) (note1)         | $I_{pp}$  | 70                   | A                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | $\pm 30$<br>$\pm 30$ | kV                 |
| Lead Soldering Temperature                                     | $T_L$     | 260(10seconds)       | $^{\circ}\text{C}$ |
| Junction Temperature                                           | $T_J$     | -55 to + 125         | $^{\circ}\text{C}$ |
| Storage Temperature                                            | $T_{stg}$ | -55 to + 150         | $^{\circ}\text{C}$ |

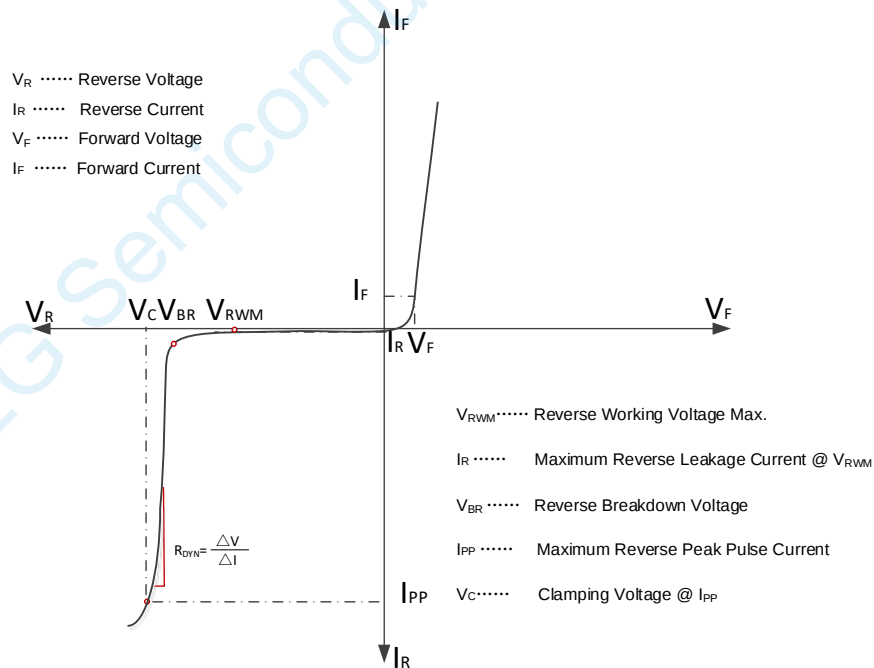
## Electrical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                 | Symbol    | Conditions                                     | Min. | Typical | Max. | Units         |
|---------------------------|-----------|------------------------------------------------|------|---------|------|---------------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                                |      |         | 6.8  | V             |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1\text{mA}$                               | 7.0  |         |      | V             |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=6.8\text{V}$ , $T=25^{\circ}\text{C}$ |      |         | 1.0  | $\mu\text{A}$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p=8/20\mu\text{s}$                          |      |         | 70   | A             |
| Clamping Voltage          | $V_C$     | $I_{PP}=40\text{A}$ , $t_p=8/20\mu\text{s}$    |      | 11.7    |      | V             |
| Clamping Voltage          | $V_C$     | $I_{PP}=70\text{A}$ , $t_p=8/20\mu\text{s}$    |      | 14      |      | V             |
| Junction Capacitance      | $C_J$     | $V_R = 0\text{V}$ , $f = 1\text{MHz}$          |      | 560     |      | pF            |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

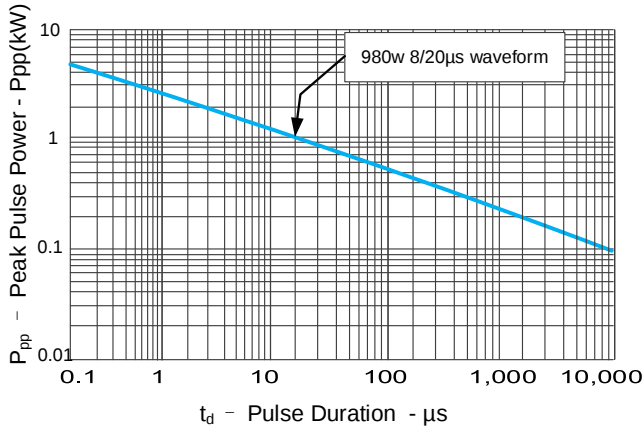
1. All parameters specified at  $T_A = 25^{\circ}\text{C}$  unless otherwise noted.
2. These parameters are guaranteed by design and characterization.
3. Standard IEC 61000-4-2 with  $C_{\text{Discharge}} = 150\text{ pF}$ ,  $R_{\text{Discharge}} = 330\text{ }\Omega$

## Electrical Parameters at $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

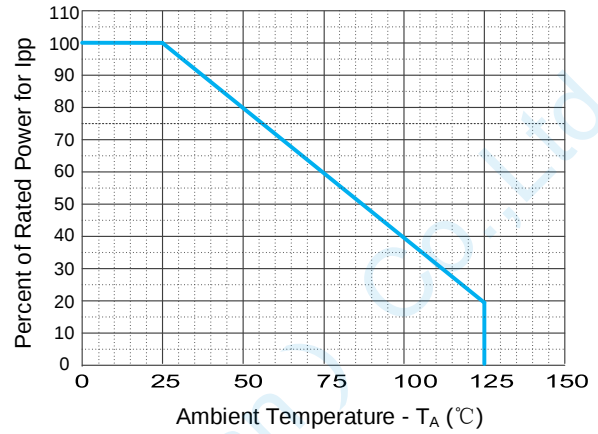


## Typical Characteristics at $T_A = 25^\circ\text{C}$ , unless otherwise specified

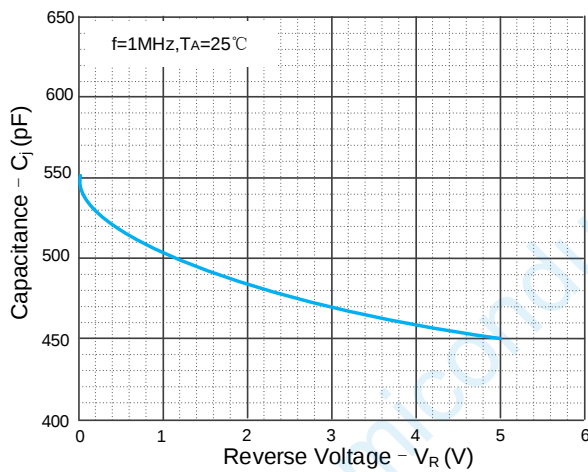
**Non-repetitive Peak Pulse Power vs. Pulse Time**



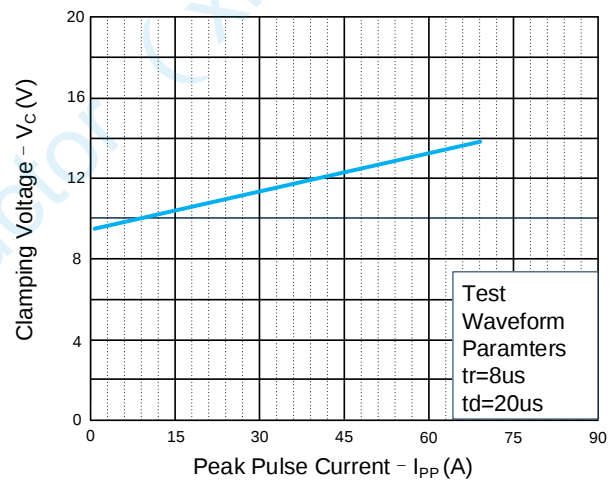
**Power derating vs. Ambient temperature**



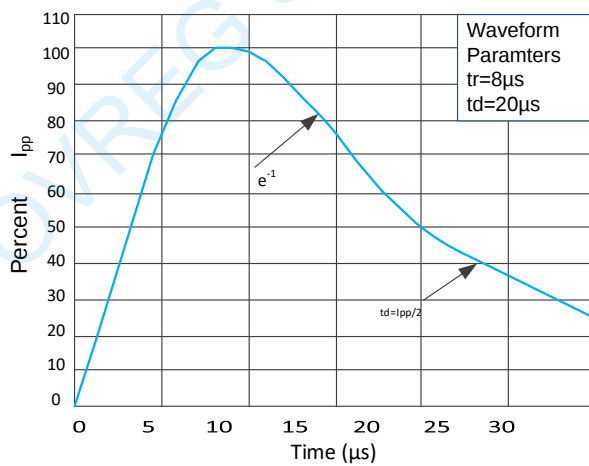
**Capacitance vs. Reverse Voltage**



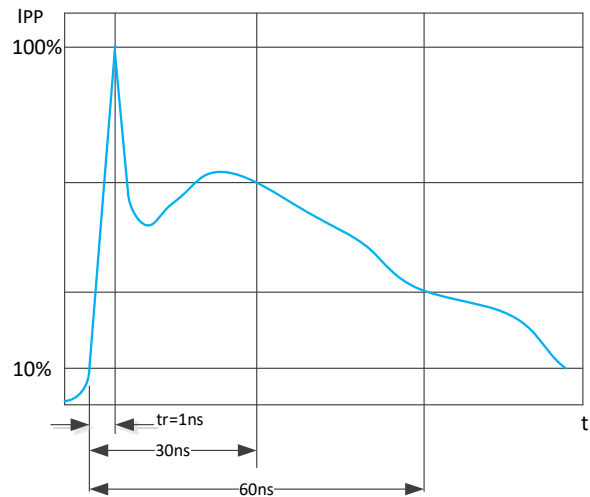
**Reverse Clamping Voltage vs. Peak Pulse Current**



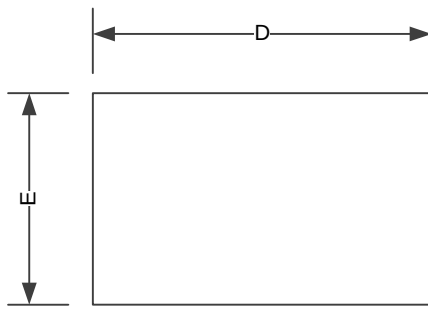
**8/20μs Pulse Waveform**



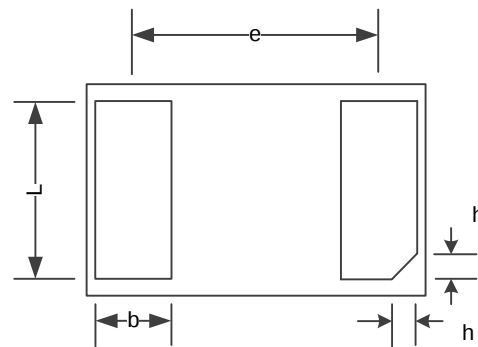
**IEC61000-4-2 +8kV Pulse Waveform**



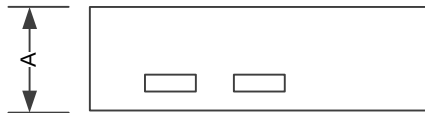
## Package Information



TOP VIEW



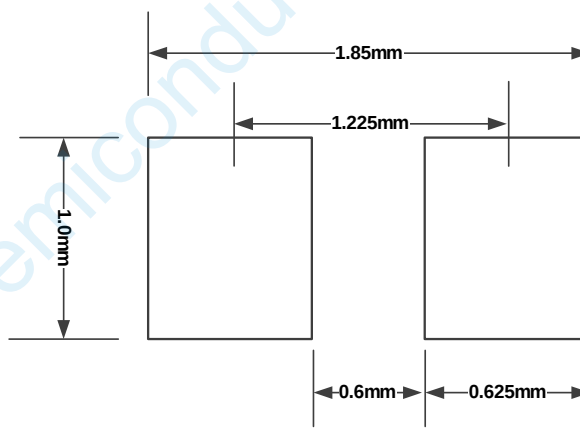
BOTTOM VIEW



SIDE VIEW

| COMMON DIMENSION (mm) |         |      |      |
|-----------------------|---------|------|------|
| PKG                   | DFN1610 |      |      |
| REF                   | MIN.    | NOM. | MAX. |
| A                     | 0.45    | 0.50 | 0.55 |
| D                     | 1.55    | 1.60 | 1.65 |
| E                     | 0.95    | 1.00 | 1.05 |
| b                     | 0.35    | 0.40 | 0.45 |
| L                     | 0.75    | 0.80 | 0.85 |
| e                     | 1.10BSC |      |      |
| h                     | 0.15    | 0.20 | 0.25 |

## Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

## Marking



## Ordering Information

| Part number | Material | Type | Reel size | MOQ      | MOQ/internal box | MOQ/carton         |
|-------------|----------|------|-----------|----------|------------------|--------------------|
| OVE67E92S1M | GREEN    | T/R  | 7 inch    | 10k/reel | 10reel= 100k/box | 4boxes=400k/carton |