## Features

- Uni-Directional ESD Protection of One Line
- Low Clamping Voltage
- Moisture Sensitivity Level 1
- Halogen Free. “Green” Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

# ESD Protection Device

## Maximum Ratings

| | | |
|---|---|---|
| IEC61000-4-2 (ESD) | Air | ±30KV |
| | Contact | ±30KV |
| Peak Pulse Current (8/20μs) | $I_{PP}$ | 160A |
| Peak Pulse Power (8/20μs)(Note2) | $P_{PK}$ | 2400W |
| Operating Junction Temperature Range | $T_J$ | -40°C to +125°C |
| Storage Temperature Range | $T_{STG}$ | -55°C to +150°C |

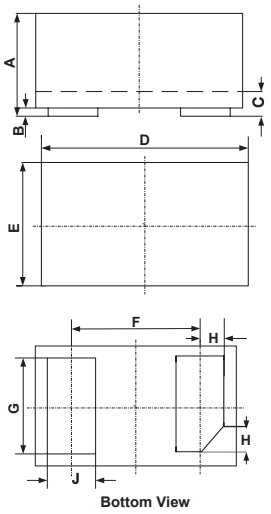
Note :

1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

### Internal Structure

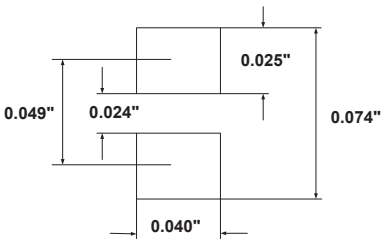

### Marking Code


## DFN1610-2

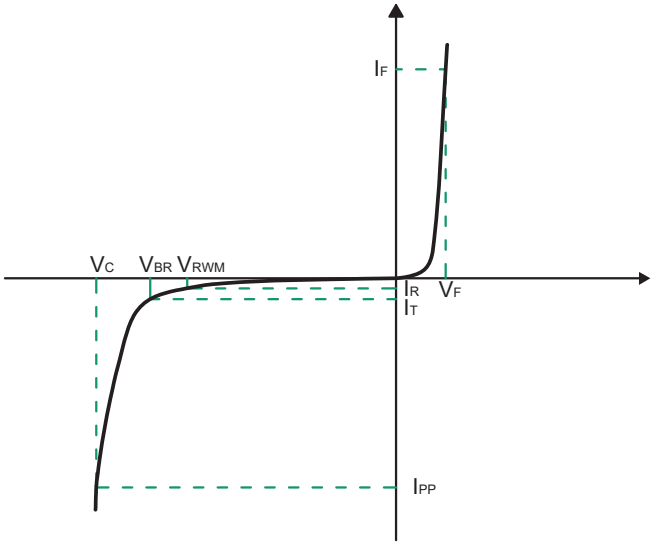



| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | 0.018 | 0.022 | 0.45 | 0.55 | |
| B | 0.000 | 0.002 | 0.00 | 0.05 | |
| C | 0.004 | 0.008 | 0.10 | 0.20 | |
| D | 0.062 | 0.066 | 1.55 | 1.65 | |
| E | 0.038 | 0.042 | 0.95 | 1.05 | |
| F | 0.044 | | 1.10 | | TYP. |
| G | 0.030 | 0.034 | 0.75 | 0.85 | |
| H | 0.006 | 0.010 | 0.15 | 0.25 | |
| J | 0.014 | 0.018 | 0.35 | 0.45 | |

SUGGESTED SOLDER PAD LAYOUT



| Symbol | Parameter |
|---|---|
| $V_{RWM}$ | Peak Reverse Working Voltage |
| $I_R$ | Reverse Leakage Current @ VRWM |
| $V_{BR}$ | Breakdown Voltage @ IT |
| IT | Test Current |
| $I_{PP}$ | Maximum Reverse Peak Pulse Current |
| $V_C$ | Clamping Voltage @ IPP |
| $P_{PK}$ | Peak Pulse Power |
| $C_J$ | Junction Capacitance |
| $I_F$ | Forward Current |
| $V_F$ | Forward Voltage @ IF |




**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | | 5 | V |
| Reverse Breakdown Voltage | $V_{BR}$ | $I_{BR}$=1mA | 5.2 | | 7 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$=5V | | | 1 | μA |
| Forward Voltage | $V_F$ | $I_F$=20mA | 0.45 | | 1.25 | V |
| Clamping Voltage[Note1] | $V_C$ | $I_{PP}$=160A, $t_P$=8/20μs | | 12 | 14 | V |
| Junction Capacitance | $C_J$ | $V_R$=0V, f=1MHz | | 500 | | pF |
| Dynamic Resistance [Note2] | $R_{DYN}$ | TLP, $t_P$=100ns | | 0.02 | | Ω |

Note :

1.Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

2.TLP parameter: $Z_0$=50Ω, tp=100ns, tr=2ns, averaging window from 60ns to 80ns. $R_{DYN}$ is calculated from 4A to 16A.

## Curve Characteristics

Fig. 1 - 8 X 20μs Pulse Waveform

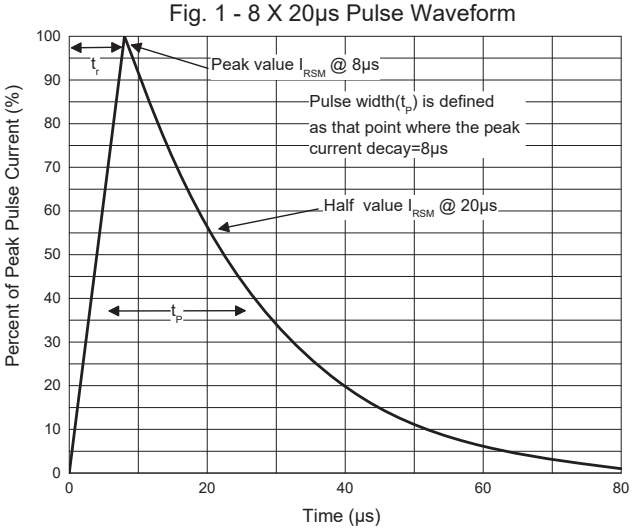



Fig. 2 - Non-Repetitive Peak Pulse Power

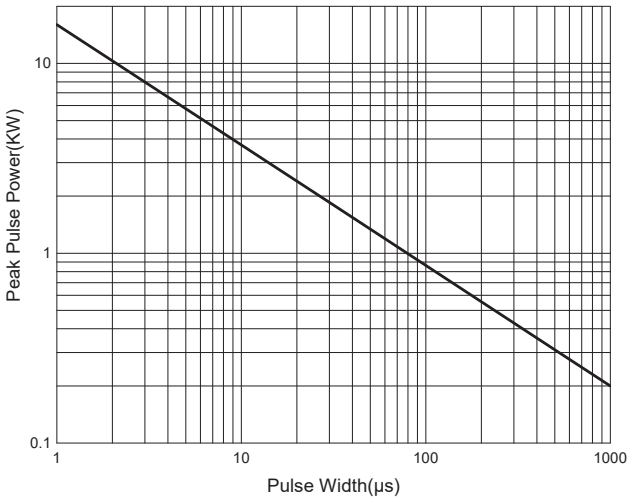



Fig. 3 - Capacitance Characteristics

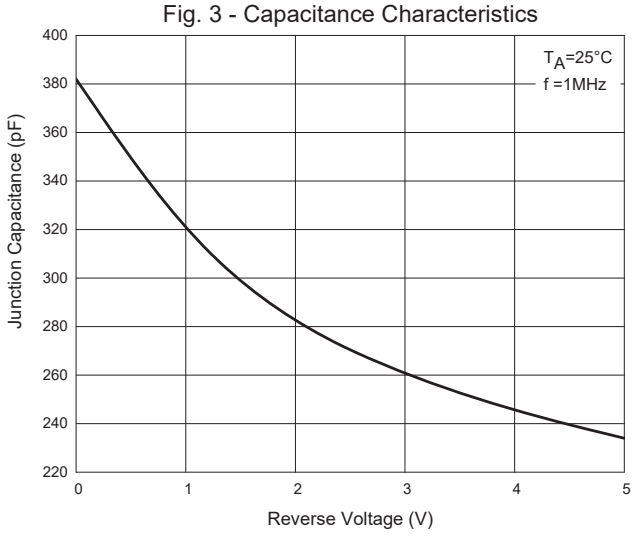



Fig. 4 - Clamping Voltage Characteristics

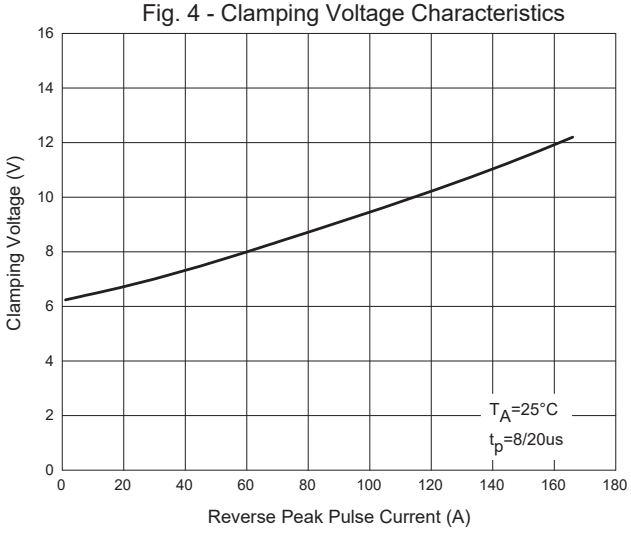



Fig. 5 - TLP Curve

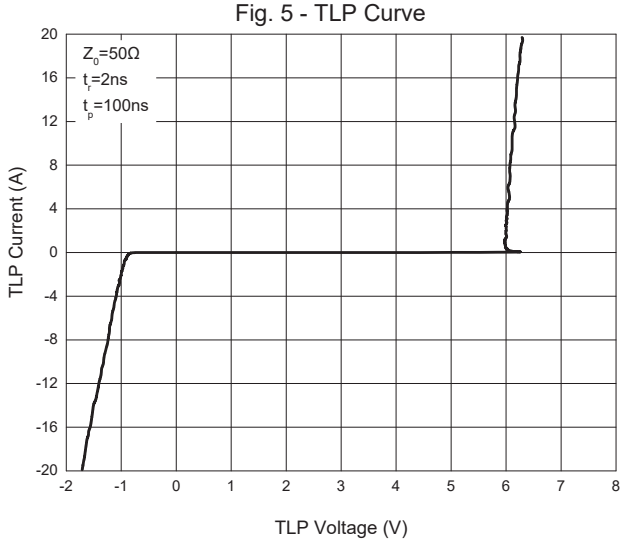
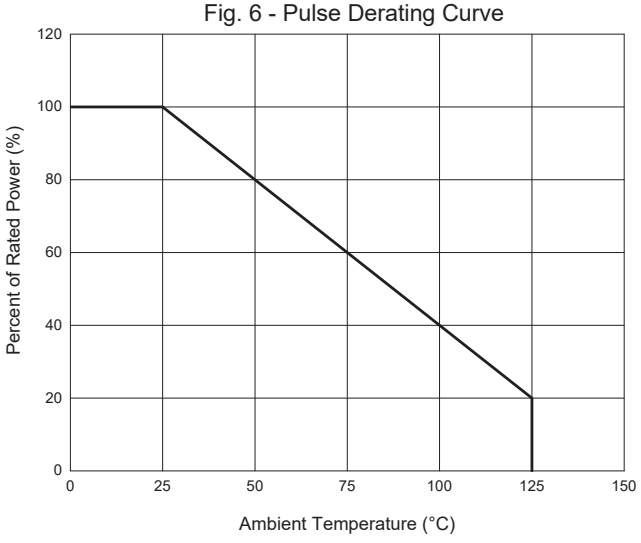



Fig. 6 - Pulse Derating Curve



## Ordering Information

| Device | Packing |
|---|---|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

# Mouser Electronics

Authorized Distributor

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Micro Commercial Components (MCC):

ESD0552P6-TP