

ALT4ME5.0A - ALT4ME75A

SURFACE MOUNT UNIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSORS

STAND-OFF VOLTAGE - 5.0 to 75 Volts

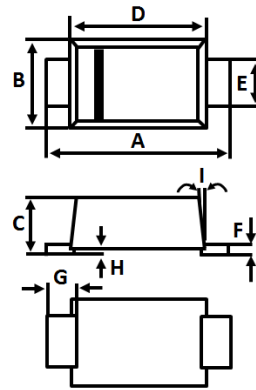
FEATURES

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ns for Uni-direction.
- RoHS compliant
- IEC6100-4-2, >30KV(air); >30KV(Contact).(Note.4)
- AEC-Q101 qualified
- PPAP capable
- Automotive grade
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

MECHANICAL DATA

- Package : Molded plastic
- Polarity : by cathode band denotes uni-directional device.
- Weight : 0.002 ounces, 0.0165 gram

DO-219



| DO-219 | | | |
|--------|------|------|------|
| DIM. | MIN. | TYP. | MAX |
| A | 3.50 | 3.80 | 3.90 |
| B | 1.70 | 1.90 | 2.00 |
| C | 0.81 | 1.18 | 1.20 |
| D | 2.70 | 2.80 | 2.90 |
| E | 0.80 | 1.00 | 1.35 |
| F | 0.05 | 0.15 | 0.30 |
| G | 0.35 | 0.60 | 0.85 |
| H | 0.03 | 0.07 | 0.10 |
| I | 0° | 5° | 8° |

All Dimensions in millimeter

CATHODE ← → ANODE

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

ABSOLUTE RATINGS

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|------------------|-------------|------|
| Peak Power Dissipation at TA = 25°C , TP = 1 ms (Note 5) | P _{PP} | 400 | W |
| Peak Forward Surge Current 8.3ms single half sine-wave @ TJ = 25 °C (Note 6) | I _{FSM} | 40 | A |
| Steady State Power Dissipation at TL =120°C | PM(AV) | 1.0 | W |
| Maximum Instantaneous forward voltage at 16A for unidirectional devices only (Note 7) | VF | 3 | V |
| Operating junction temperature range | T _J | -55 to +175 | °C |
| Storage temperature range | T _{STG} | -55 to +175 | °C |

NOTES :

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. ALT4ME5.0A thru ALT4ME24A devices that comply IEC 61000-4-2 levels.
5. Non-repetitive current pulse, per fig. 3 and derated above TA= 25°C per fig.1.
6. Only for unidirectional units.
7. VF max=3V at IF=16 A 300us square wave pulse.

RATING AND CHARACTERISTIC CURVES
ALT4ME5.0A - ALT4ME75A

FIG.1- Pulse Derating Curve

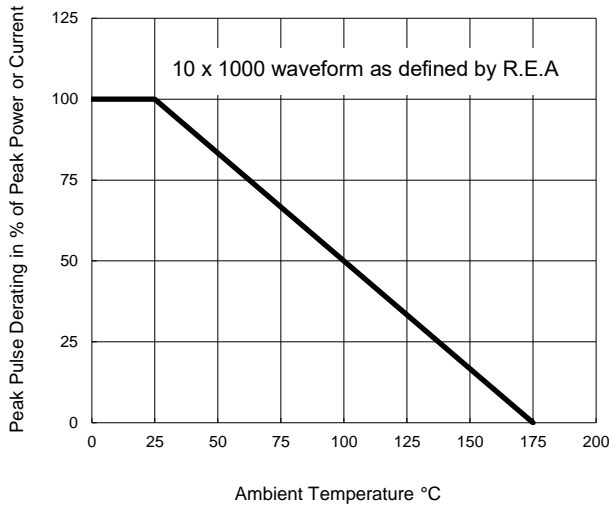


FIG.2- Steady State Power Derating Curve

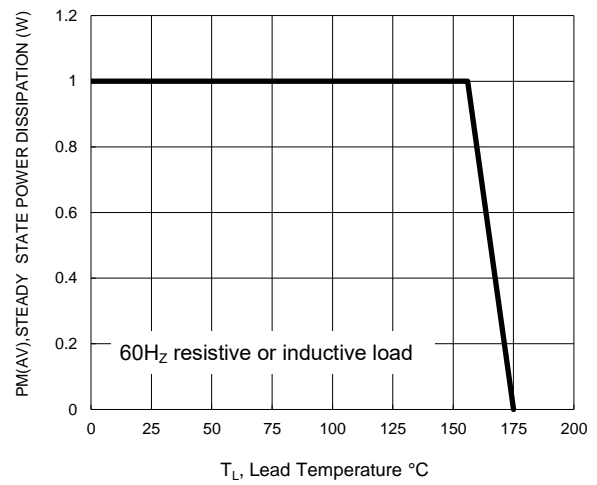


FIG3- Pulse Rating Curve

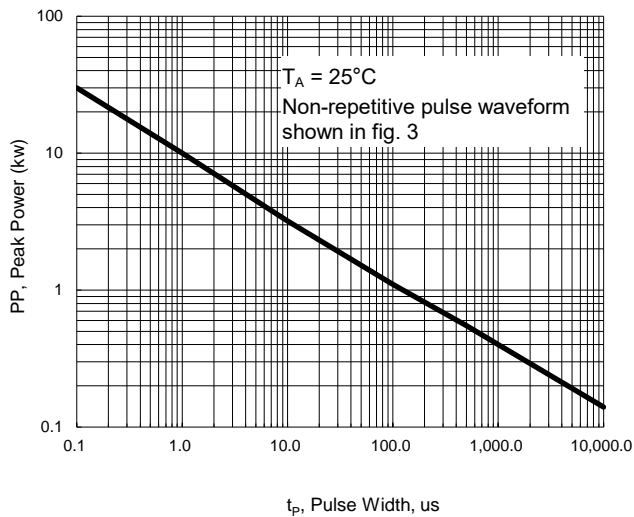


FIG4- Typical Junction Capacitance

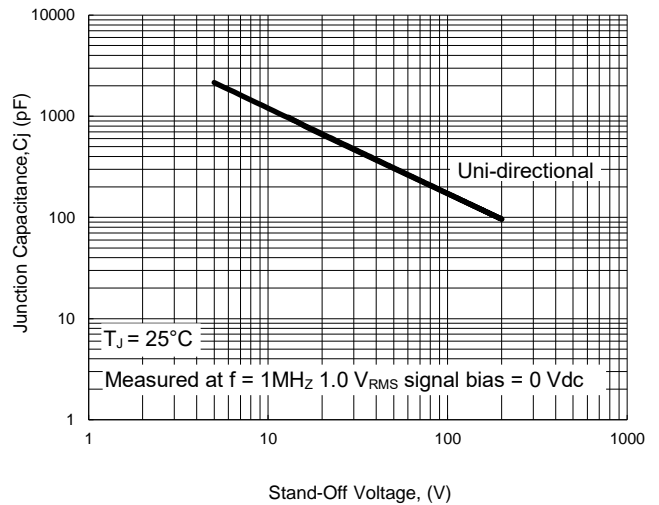
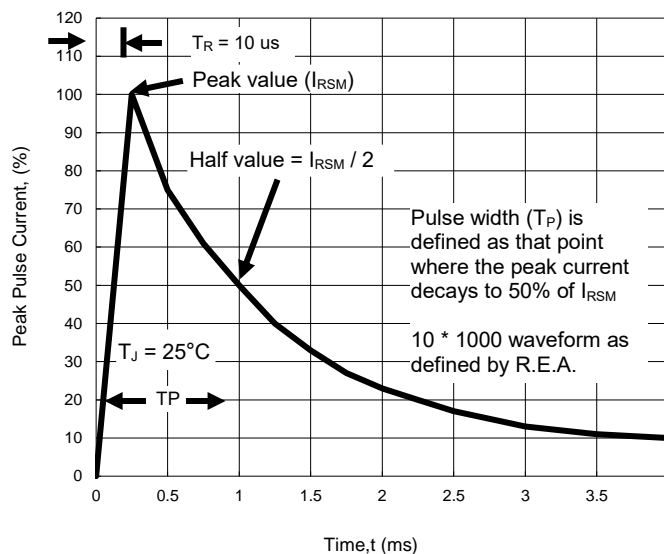


FIG.5- Pulse waveform



| Device Uni- Directional | Device Marking Code | Reverse Standoff Voltage | Breakdown Voltage V _{BR} Volts | | | Max. Clamping Voltage @I _{pp} | Max. Peak Pulse Current | Max. Reverse Leakage @ V _R |
|----------------------------|------------------------|--------------------------------|--|-------|----------------------|--|----------------------------------|---|
| | (UNI) | V _R (V) | Min. | Max. | @I _t (mA) | V _C (V) | I _{PP} (A) | I _R (uA) |
| ALT4ME5.0A | AHE | 5.0 | 6.40 | 7.07 | 10 | 9.2 | 43.5 | 150 |
| ALT4ME6.0A | AHG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 38.8 | 150 |
| ALT4ME6.5A | AHK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 35.7 | 150 |
| ALT4ME7.0A | AHM | 7.0 | 7.78 | 8.60 | 10 | 12.0 | 33.3 | 150 |
| ALT4ME7.5A | AHP | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 31.0 | 100 |
| ALT4ME8.0A | AHR | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 29.4 | 50 |
| ALT4ME8.5A | AHT | 8.5 | 9.44 | 10.43 | 1 | 14.4 | 27.7 | 10 |
| ALT4ME9.0A | AHV | 9.0 | 10.0 | 11.1 | 1 | 15.4 | 26.0 | 5 |
| ALT4ME10A | AHX | 10 | 11.1 | 12.3 | 1 | 17.0 | 23.5 | 5 |
| ALT4ME11A | AHZ | 11 | 12.2 | 13.5 | 1 | 18.2 | 22.0 | 0.5 |
| ALT4ME12A | AIE | 12 | 13.3 | 14.7 | 1 | 19.9 | 20.1 | 0.5 |
| ALT4ME13A | AIG | 13 | 14.4 | 15.9 | 1 | 21.5 | 18.6 | 0.5 |
| ALT4ME14A | AIK | 14 | 15.6 | 17.2 | 1 | 23.2 | 17.2 | 0.5 |
| ALT4ME15A | AIM | 15 | 16.7 | 18.5 | 1 | 24.4 | 16.4 | 0.5 |
| ALT4ME16A | AIP | 16 | 17.8 | 19.7 | 1 | 26.0 | 15.3 | 0.5 |
| ALT4ME17A | AIR | 17 | 18.9 | 20.9 | 1 | 27.6 | 14.5 | 0.5 |
| ALT4ME18A | AIT | 18 | 20.0 | 22.1 | 1 | 29.2 | 13.7 | 0.5 |
| ALT4ME20A | AIV | 20 | 22.2 | 24.5 | 1 | 32.4 | 12.3 | 0.5 |
| ALT4ME22A | AIX | 22 | 24.4 | 27.0 | 1 | 35.5 | 11.2 | 0.5 |
| ALT4ME24A | AIZ | 24 | 26.7 | 29.5 | 1 | 38.9 | 10.3 | 0.5 |
| ALT4ME26A | AJE | 26 | 28.9 | 31.9 | 1 | 42.1 | 9.5 | 0.5 |
| ALT4ME28A | AJG | 28 | 31.1 | 34.4 | 1 | 45.4 | 8.8 | 0.5 |
| ALT4ME30A | AJK | 30 | 33.3 | 36.8 | 1 | 48.4 | 8.3 | 0.5 |
| ALT4ME33A | AJM | 33 | 36.7 | 40.6 | 1 | 53.3 | 7.5 | 0.5 |
| ALT4ME36A | AJP | 36 | 40.0 | 44.2 | 1 | 58.1 | 6.9 | 0.5 |
| ALT4ME40A | AJR | 40 | 44.4 | 49.1 | 1 | 64.5 | 6.2 | 0.5 |
| ALT4ME43A | AJT | 43 | 47.8 | 52.8 | 1 | 69.4 | 5.7 | 0.5 |
| ALT4ME45A | AJV | 45 | 50.0 | 55.3 | 1 | 72.7 | 5.5 | 0.5 |
| ALT4ME48A | AJX | 48 | 53.3 | 58.9 | 1 | 77.4 | 5.2 | 0.5 |
| ALT4ME51A | AJZ | 51 | 56.7 | 62.7 | 1 | 82.4 | 4.9 | 0.5 |
| ALT4ME54A | ARE | 54 | 60.0 | 66.3 | 1 | 87.1 | 4.6 | 0.5 |
| ALT4ME58A | ARG | 58 | 64.4 | 71.2 | 1 | 93.6 | 4.3 | 0.5 |
| ALT4ME60A | ARK | 60 | 66.7 | 73.7 | 1 | 96.8 | 4.1 | 0.5 |
| ALT4ME64A | ARM | 64 | 71.1 | 78.6 | 1 | 103 | 3.9 | 0.5 |
| ALT4ME70A | ARP | 70 | 77.8 | 86.0 | 1 | 113 | 3.5 | 0.5 |
| ALT4ME75A | ARR | 75 | 83.3 | 92.1 | 1 | 121 | 3.3 | 0.5 |

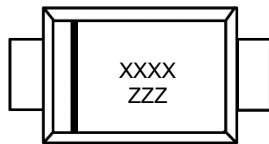
NOTE : Suffix 'A' denotes 5% tolerance device.

8. Only Uni-directional units on ALT4ME series.

Ordering Information :

| Part Number | Package | Packing | |
|-------------|---------|----------|---------|
| | | Qty. | Carrier |
| ALT4MEx.xA | DO-219 | 10000pcs | Reel |
| ALT4MExxA | DO-219 | 10000pcs | Reel |

Marking Information :



Uni-Directional

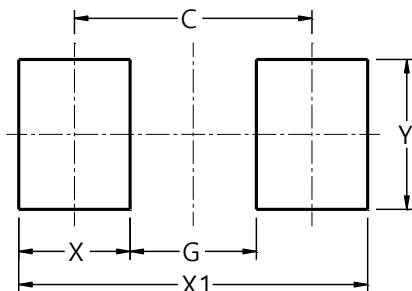
XXXX : Assembly Tracking code

ZZZ : Product Type Marking code

Packaging Information :

| DEVICE | REEL DIA. | Q'TY/REEL | REEL/BOX | Q'TY/BOX | BOX/CARTON | Q'TY/CARTON | BOX SIZE | CARTON SIZE |
|-------------------------|-----------|-----------|----------|----------|------------|-------------|------------|-------------|
| | (INCH) | (PCS) | (REEL) | (PCS) | (BOX) | (PCS) | (mm) | (mm) |
| ALT4MEx.xA ALT4MExxA | 13 | 10000 | 2 | 10000 | 8 | 160000 | 334*334*39 | 350*350*340 |

Suggested Pad Layout :



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 2.86 |
| G | 1.52 |
| X | 1.34 |
| X1 | 4.20 |
| Y | 1.80 |

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