

1.5KE6.8(C)A - 1.5KE440(C)A

Features

- Glass passivated junction.
- 1500W Peak Pulse Power capability at 1.0 ms.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time; typically less than 1.0 ps from 0 volts to BV for unidirectional and 5.0 ns for bidirectional.
- Typical I_R less than 1.0 μ A above 10V.
- UL certified, UL #E210467.



DO-201AE
COLOR BAND DENOTES CATHODE ON UNIDIRECTIONAL DEVICES ONLY. NO COLOR BAND ON BIDIRECTIONAL DEVICES.

DEVICES FOR BIPOLAR APPLICATIONS

- Bidirectional types use CA suffix.
- Electrical Characteristics apply in both directions.

1500 Watt Transient Voltage Suppressors

Absolute Maximum Ratings* $T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|---|--------------|------------------|
| P_{PPM} | Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$, $T_P=1\text{ms}$ | minimum 1500 | W |
| I_{PPM} | Peak Pulse Current | see table | A |
| P_D | Steady State Power Dissipation .375" lead length @ $T_A = 75^\circ\text{C}$ | 5.0 | W |
| I_{FSM} | Non-repetitive Peak Forward Surge Current superimposed on rated load (JEDEC method) (Note 1) | 200 | A |
| T_{stg} | Storage Temperature Range | -65 to +175 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature | -65 to +175 | $^\circ\text{C}$ |

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Note 1: Measured on 8.3 ms single half-sine wave; Duty cycle = 4 pulses per minute maximum.

Datasheet.Directory

Transient Voltage Suppressors

(continued)

Electrical Characteristics

T_A = 25°C unless otherwise noted

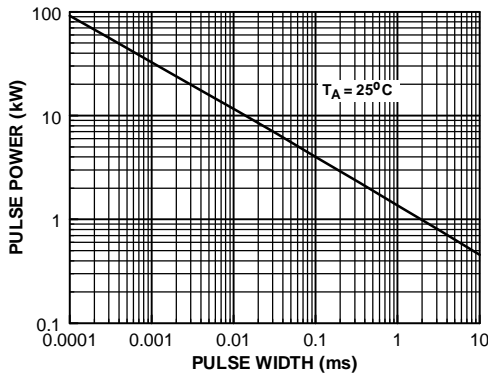
| Uni-directional Bi-directional (C) Device | Reverse Stand-off Voltage V _{RWM} (V) | Breakdown Voltage V _{BR} (V) | | Test Current I _T (mA) | Max Clamping Voltage @ IPPM V _C (V) | Max Peak Pulse Surge Current I _{PPM} (A) | Max Reverse Leakage V _{RWM} I _R (uA)* |
|---|--|--|-------|--|--|---|---|
| | | min | max | | | | |
| 1.5KE6.8(C)A | 5.80 | 6.45 | 7.14 | 10 | 10.5 | 143 | 1000 |
| 1.5KE7.5(C)A | 6.40 | 7.13 | 7.88 | 10 | 11.3 | 133 | 500 |
| 1.5KE8.2(C)A | 7.02 | 7.79 | 8.61 | 10 | 12.1 | 124 | 200 |
| 1.5KE9.1(C)A | 7.78 | 8.65 | 9.55 | 1 | 13.4 | 112 | 50 |
| 1.5KE10(C)A | 8.55 | 9.50 | 10.5 | 1 | 14.5 | 103 | 10 |
| 1.5KE11(C)A | 9.40 | 10.5 | 11.6 | 1 | 15.6 | 96.2 | 5 |
| 1.5KE12(C)A | 10.2 | 11.4 | 12.6 | 1 | 16.7 | 90.0 | 5 |
| 1.5KE13(C)A | 11.1 | 12.4 | 13.7 | 1 | 18.2 | 82.0 | 5 |
| 1.5KE15(C)A | 12.8 | 14.3 | 15.8 | 1 | 21.2 | 71.0 | 5 |
| 1.5KE16(C)A | 13.6 | 15.2 | 16.8 | 1 | 22.5 | 67.0 | 5 |
| 1.5KE18(C)A | 15.3 | 17.1 | 18.9 | 1 | 26.2 | 59.5 | 5 |
| 1.5KE20(C)A | 17.1 | 19.0 | 21.0 | 1 | 27.7 | 54.2 | 5 |
| 1.5KE22(C)A | 18.8 | 20.9 | 23.1 | 1 | 30.6 | 49.0 | 5 |
| 1.5KE24(C)A | 20.5 | 22.8 | 25.2 | 1 | 33.2 | 45.2 | 5 |
| 1.5KE27(C)A | 23.1 | 25.7 | 28.4 | 1 | 37.5 | 40.0 | 5 |
| 1.5KE30(C)A | 25.6 | 28.5 | 31.5 | 1 | 41.4 | 36.2 | 5 |
| 1.5KE33(C)A | 28.2 | 31.4 | 34.7 | 1 | 45.7 | 33.0 | 5 |
| 1.5KE36(C)A | 30.8 | 34.2 | 37.8 | 1 | 49.9 | 30.1 | 5 |
| 1.5KE39(C)A | 33.3 | 37.1 | 41.0 | 1 | 53.9 | 28.0 | 5 |
| 1.5KE43(C)A | 36.8 | 40.9 | 45.2 | 1 | 59.3 | 25.3 | 5 |
| 1.5KE47(C)A | 40.2 | 44.7 | 49.4 | 1 | 64.8 | 23.2 | 5 |
| 1.5KE51(C)A | 43.6 | 48.5 | 53.6 | 1 | 70.1 | 21.4 | 5 |
| 1.5KE56(C)A | 47.8 | 53.2 | 58.8 | 1 | 77.0 | 19.5 | 5 |
| 1.5KE62(C)A | 53.0 | 58.9 | 65.1 | 1 | 85.0 | 17.7 | 5 |
| 1.5KE68(C)A | 58.1 | 64.6 | 71.4 | 1 | 92.0 | 16.3 | 5 |
| 1.5KE75(C)A | 64.1 | 71.3 | 78.8 | 1 | 104.0 | 14.6 | 5 |
| 1.5KE82(C)A | 70.1 | 77.9 | 86.1 | 1 | 113.0 | 13.3 | 5 |
| 1.5KE91(C)A | 77.8 | 86.5 | 95.5 | 1 | 125.0 | 12.0 | 5 |
| 1.5KE100(C)A | 85.5 | 95.0 | 105.0 | 1 | 137.0 | 11.0 | 5 |
| 1.5KE110(C)A | 94.0 | 106.0 | 116.0 | 1 | 152.0 | 9.9 | 5 |
| 1.5KE120(C)A | 102.0 | 114.0 | 126.0 | 1 | 165.0 | 9.1 | 5 |
| 1.5KE130(C)A | 111.0 | 124.0 | 137.0 | 1 | 179.0 | 8.4 | 5 |
| 1.5KE150(C)A | 128.0 | 143.0 | 158.0 | 1 | 207.0 | 7.2 | 5 |
| 1.5KE160(C)A | 136.0 | 152.0 | 168.0 | 1 | 219.0 | 6.8 | 5 |
| 1.5KE170(C)A | 145.0 | 162.0 | 179.0 | 1 | 234.0 | 6.4 | 5 |
| 1.5KE180(C)A | 154.0 | 171.0 | 189.0 | 1 | 246.0 | 6.1 | 5 |
| 1.5KE200(C)A | 171.0 | 190.0 | 210.0 | 1 | 274.0 | 5.5 | 5 |
| 1.5KE220(C)A | 185.0 | 209.0 | 231.0 | 1 | 328.0 | 4.6 | 5 |
| 1.5KE250(C)A | 214.0 | 237.0 | 263.0 | 1 | 344.0 | 4.5 | 5 |
| 1.5KE300(C)A | 256.0 | 285.0 | 315.0 | 1 | 414.0 | 3.8 | 5 |
| 1.5KE350(C)A | 300.0 | 333.0 | 368.0 | 1 | 482.0 | 3.2 | 5 |
| 1.5KE400(C)A | 342.0 | 380.0 | 420.0 | 1 | 548.0 | 2.8 | 5 |
| 1.5KE440(C)A | 376.0 | 418.0 | 462.0 | 1 | 602.0 | 2.6 | 5 |

* For bidirectional parts with V_{RWM} < 10V, the I_R max limit is doubled.

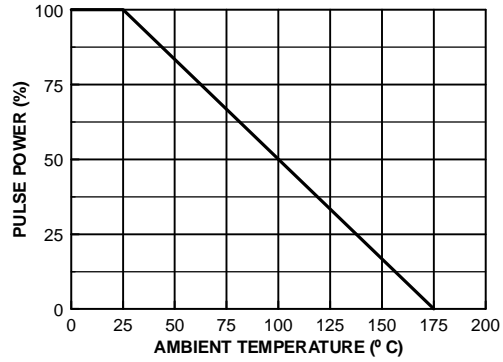
1.5KE6.8(C)A - 1.5KE440(C)A

Typical Characteristics

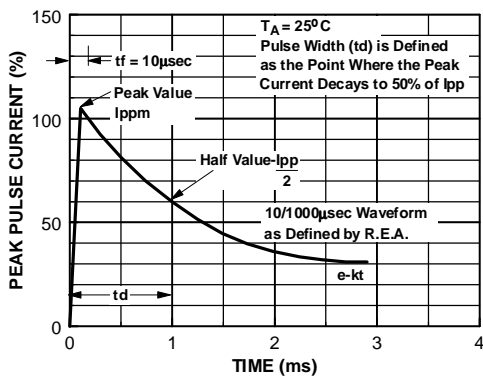
Peak Pulse Power Rating Curve



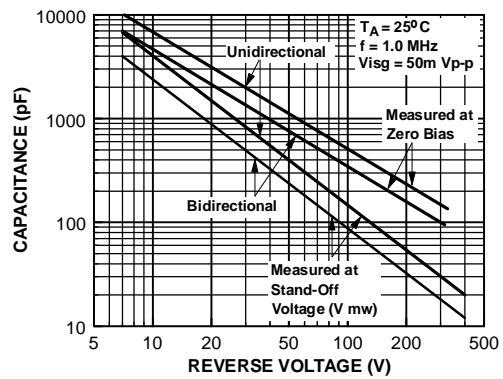
Pulse Derating Curve



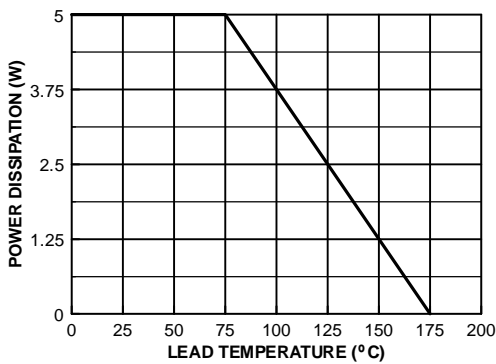
Pulse Waveform



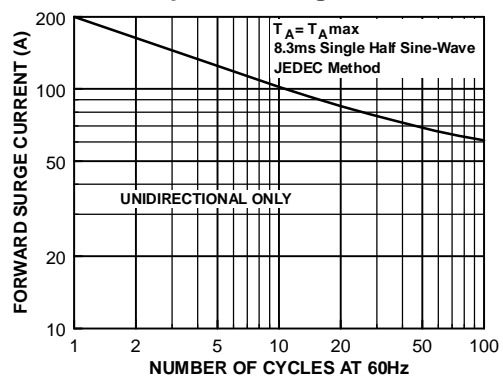
Junction Capacitance



Steady State Power Derating Curve



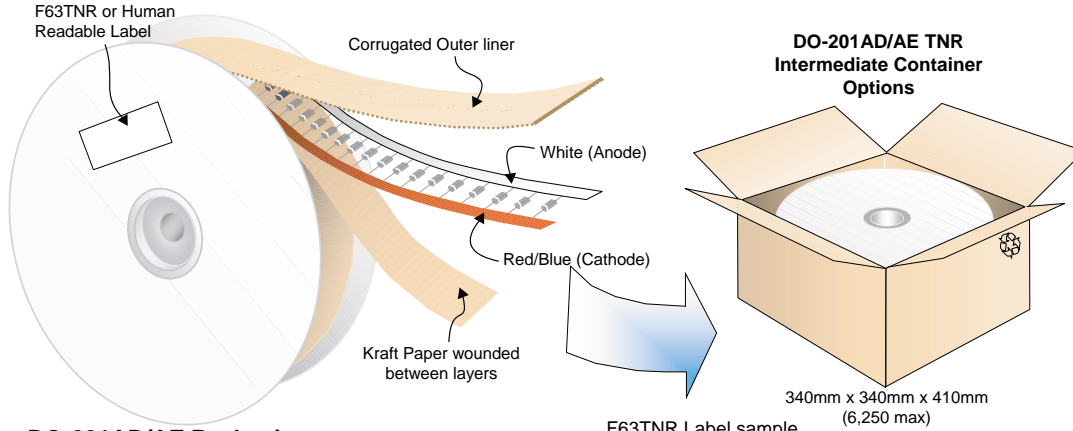
Non-Repetitive Surge Current



DO-201AD/AE Tape and Reel Data



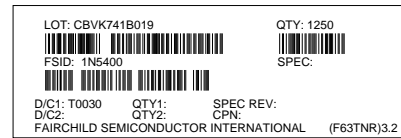
DO-201AD/AE Packaging Configuration: Figure 1.0



DO-201AD/AE Packaging Information Table : Figure 2.0

| DO-201AD/AE Packaging Information | |
|-----------------------------------|-----------------------|
| Packaging Option | Under package code P3 |
| Packaging type | TNR |
| Qty per Reel/Tube/Bag | 1250 |
| Reel Size (inch diameter) | 13 |
| Inside Tape Spacing (mm) | 52 |
| Int Box Dimension (mm) | 340x340x410 |
| Max qty per Box | 6,250 |
| Weight per unit (gm) | 1.20 AD/1.10 AE |
| Weight per Reel (kg) | 1.50 AD/1.20 AE |
| Note/Comments | |

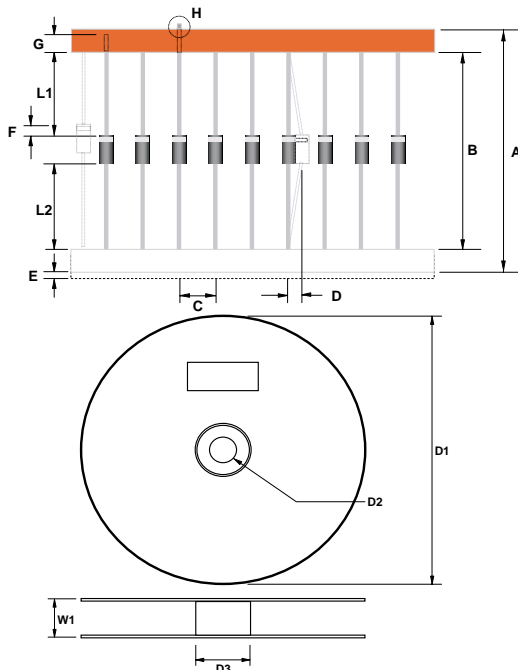
F63TNR Label sample



Human Readable Label sample



DO-201AD/AE Taping Dimension: Figure 5.0



TAPING DIMENSIONS

| | INCH | MM | MILS | NOTES |
|-------|---------------|-------------|-----------|------------------------------|
| A | 2.520 | 64.00 | 2519 | Overall width |
| | +0.066/ | +1.69/ | +66.5/ | |
| | -0.027 | -0.69 | -27.0 | |
| | 1.496 | 38.00 | 1496 | |
| | +0.059/ | +1.5 | +59 | |
| | -0.039 | -1.0 | -39 | |
| B | 2.047±0.027 | 52 ±0.69 | 2047±27 | Inside Tape Spacing |
| C | 0.200 ±0.0157 | 10.08 ±0.40 | 394 ±15.7 | Component Pitch |
| D | 0.047(max) | 1.2(max) | 47(max) | Component Misalignment |
| E | 0.022(max) | 0.55(max) | 22(max) | Tape Mismatch |
| F | 0.027(max) | ±0.69 | ±27 | Units in line w/ one another |
| G | 0.126(min) | 3.2(min) | 126(min) | Lead amount between tapes |
| H | 0 | 0 | 0 | Lead amount beyond tapes |
| L1-L2 | ±0.027 | ±0.69 | ±27 | Delta between two leads |

REEL DIMENSIONS

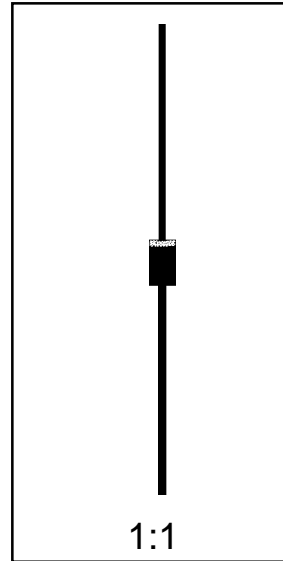
| ITEM DESCRIPTION | SYMBOL | MINIMUM | MAXIMUM |
|--------------------------------|--------|---------|---------|
| Reel Diameter | D1 | 13.875 | 14.125 |
| Arbor Hole Diameter (Standard) | D2 | 1.245 | 1.255 |
| Core Diameter | D3 | 3.190 | 3.310 |
| Flange to Flange Outer Width | W1 | | 3.400 |

Note: All Dimensions are in inches

DO-201AD Package Dimensions



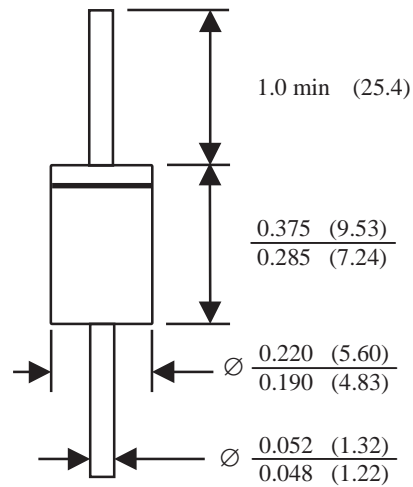
DO-201AD (FS PKG Code P3)



Scale 1:1 on letter size paper

Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 1.1



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