

Features

- 1500W Peak Pulse Power Dissipation
- Voltage Range 6.8V - 400V
- Constructed with Glass Passivated Die
- Uni and Bidirectional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Lead Free Finish, RoHS Compliant (Note 3)**



Mechanical Data

- Case: DO-201
- Case Material: Transfer Molding Epoxy. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Tin. Leads: Axial, Solderable per MIL-STD-202 Method 208
- Ordering Information: See Page 4
- Marking: Unidirectional - Type Number and Cathode Band
- Marking: Bidirectional - Type Number Only
- Weight: 1.12 grams (approximate)

| DO-201 | | |
|----------------------|-------|------|
| Dim | Min | Max |
| A | 25.40 | — |
| B | 8.50 | 9.53 |
| C | 0.96 | 1.06 |
| D | 4.80 | 5.21 |
| All Dimensions in mm | | |

Maximum Ratings @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Peak Power Dissipation at t _p = 1.0ms (Non-repetitive current pulse, derated above T _A = 25°C) | P _{pk} | 1500 | W |
| Steady State Power Dissipation at T _L = 75°C Lead Lengths 9.5 mm | P _d | 5.0 | W |
| Peak Forward Surge Current, 8.3 Single Half Sine Wave Superimposed on Rated Load (8.3ms Single Half Sine Wave, Duty Cycle = 4 pulses per minute maximum) | I _{FSM} | 200 | A |
| Forward Voltage @ I _F = 50A 300µs Square Wave Pulse, Unidirectional Only | V _F | 3.5 5.0 | V |
| Operating and Storage Temperature Range | T _j , T _{STG} | -55 to +175 | °C |

- Notes:
1. Suffix 'C' denotes bidirectional device.
 2. For bidirectional devices having V_R of 10 volts and under, the I_R limit is doubled.
 3. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.

| Type Number (Note 1) | Type Number (Note 1) | Reverse Standoff Voltage | Breakdown Voltage V_{BR} @ I_T | | Test Current | Max. Reverse Leakage (Note 2) @ V_R | Max. Clamping Voltage @ I_{PP} | Max. Peak Pulse Current | Max. Voltage Temp. Variation of V_{BR} |
|-------------------------|-------------------------|--------------------------|---------------------------------------|--------|--------------|---|-------------------------------------|-------------------------|--|
| | | | (UNI) | (BI) | | | | | |
| 1.5KE6V8A | 1.5KE6V8CA | 5.80 | 6.45 | 7.14 | 10 | 1000 | 10.5 | 143.0 | 0.057 |
| 1.5KE7V5A | 1.5KE7V5CA | 6.40 | 7.13 | 7.88 | 10 | 500 | 11.3 | 132.0 | 0.061 |
| 1.5KE8V2A | 1.5KE8V2CA | 7.02 | 7.79 | 8.61 | 10 | 200 | 12.1 | 124.0 | 0.065 |
| 1.5KE9V1A | 1.5KE9V1CA | 7.78 | 8.65 | 9.55 | 1.0 | 50 | 13.4 | 112.0 | 0.068 |
| 1.5KE10A | 1.5KE10CA | 8.55 | 9.50 | 10.50 | 1.0 | 10 | 14.5 | 103.0 | 0.073 |
| 1.5KE11A | 1.5KE11CA | 9.40 | 10.50 | 11.60 | 1.0 | 5.0 | 15.6 | 96.0 | 0.075 |
| 1.5KE12A | 1.5KE12CA | 10.20 | 11.40 | 12.60 | 1.0 | 5.0 | 16.7 | 90.0 | 0.078 |
| 1.5KE13A | 1.5KE13CA | 11.10 | 12.40 | 13.70 | 1.0 | 5.0 | 18.2 | 82.0 | 0.081 |
| 1.5KE15A | 1.5KE15CA | 12.80 | 14.30 | 15.80 | 1.0 | 5.0 | 21.2 | 71.0 | 0.084 |
| 1.5KE16A | 1.5KE16CA | 13.60 | 15.20 | 16.80 | 1.0 | 5.0 | 22.5 | 67.0 | 0.086 |
| 1.5KE18A | 1.5KE18CA | 15.30 | 17.10 | 18.90 | 1.0 | 5.0 | 25.2 | 59.5 | 0.088 |
| 1.5KE20A | 1.5KE20CA | 17.10 | 19.00 | 21.00 | 1.0 | 5.0 | 27.7 | 54.0 | 0.090 |
| 1.5KE22A | 1.5KE22CA | 18.80 | 20.90 | 23.10 | 1.0 | 5.0 | 30.6 | 49.0 | 0.092 |
| 1.5KE24A | 1.5KE24CA | 20.50 | 22.80 | 25.20 | 1.0 | 5.0 | 33.2 | 45.0 | 0.094 |
| 1.5KE27A | 1.5KE27CA | 23.10 | 25.70 | 28.40 | 1.0 | 5.0 | 37.5 | 40.0 | 0.096 |
| 1.5KE30A | 1.5KE30CA | 25.60 | 28.50 | 31.50 | 1.0 | 5.0 | 41.4 | 36.0 | 0.097 |
| 1.5KE33A | 1.5KE33CA | 28.20 | 31.40 | 34.70 | 1.0 | 5.0 | 45.7 | 33.0 | 0.098 |
| 1.5KE36A | 1.5KE36CA | 30.80 | 34.20 | 37.80 | 1.0 | 5.0 | 49.9 | 30.0 | 0.099 |
| 1.5KE39A | 1.5KE39CA | 33.30 | 37.10 | 41.00 | 1.0 | 5.0 | 53.9 | 28.0 | 0.100 |
| 1.5KE43A | 1.5KE43CA | 36.80 | 40.90 | 45.20 | 1.0 | 5.0 | 59.3 | 25.3 | 0.101 |
| 1.5KE47A | 1.5KE47CA | 40.20 | 44.70 | 49.40 | 1.0 | 5.0 | 64.8 | 23.2 | 0.101 |
| 1.5KE51A | 1.5KE51CA | 43.60 | 48.50 | 53.60 | 1.0 | 5.0 | 70.1 | 21.4 | 0.102 |
| 1.5KE56A | 1.5KE56CA | 47.80 | 53.20 | 58.80 | 1.0 | 5.0 | 77.0 | 19.5 | 0.103 |
| 1.5KE62A | 1.5KE62CA | 53.00 | 58.90 | 65.10 | 1.0 | 5.0 | 85.0 | 17.7 | 0.104 |
| 1.5KE68A | 1.5KE68CA | 58.10 | 64.60 | 71.40 | 1.0 | 5.0 | 92.0 | 16.3 | 0.104 |
| 1.5KE75A | 1.5KE75CA | 64.10 | 71.30 | 78.80 | 1.0 | 5.0 | 103.0 | 14.6 | 0.105 |
| 1.5KE82A | 1.5KE82CA | 70.10 | 77.90 | 86.10 | 1.0 | 5.0 | 113.0 | 13.3 | 0.105 |
| 1.5KE91A | 1.5KE91CA | 77.80 | 86.50 | 95.50 | 1.0 | 5.0 | 125.0 | 12.0 | 0.106 |
| 1.5KE100A | 1.5KE100CA | 85.50 | 95.00 | 105.00 | 1.0 | 5.0 | 137.0 | 11.0 | 0.106 |
| 1.5KE110A | 1.5KE110CA | 94.00 | 105.00 | 116.00 | 1.0 | 5.0 | 152.0 | 9.9 | 0.107 |
| 1.5KE120A | 1.5KE120CA | 102.00 | 114.00 | 126.00 | 1.0 | 5.0 | 165.0 | 9.1 | 0.107 |
| 1.5KE130A | 1.5KE130CA | 111.00 | 124.00 | 137.00 | 1.0 | 5.0 | 179.0 | 8.4 | 0.107 |
| 1.5KE150A | 1.5KE150CA | 128.00 | 143.00 | 158.00 | 1.0 | 5.0 | 207.0 | 7.2 | 0.108 |
| 1.5KE160A | 1.5KE160CA | 136.00 | 152.00 | 168.00 | 1.0 | 5.0 | 219.0 | 6.8 | 0.108 |
| 1.5KE170A | 1.5KE170CA | 145.00 | 162.00 | 179.00 | 1.0 | 5.0 | 234.0 | 6.4 | 0.108 |
| 1.5KE180A | 1.5KE180CA | 154.00 | 171.00 | 189.00 | 1.0 | 5.0 | 246.0 | 6.1 | 0.108 |
| 1.5KE200A | 1.5KE200CA | 171.00 | 190.00 | 210.00 | 1.0 | 5.0 | 274.0 | 5.5 | 0.108 |
| 1.5KE220A | 1.5KE220CA | 185.00 | 209.00 | 231.00 | 1.0 | 5.0 | 328.0 | 4.6 | 0.108 |
| 1.5KE250A | 1.5KE250CA | 214.00 | 237.00 | 263.00 | 1.0 | 5.0 | 344.0 | 5.0 | 0.110 |
| 1.5KE300A | 1.5KE300CA | 256.00 | 285.00 | 315.00 | 1.0 | 5.0 | 414.0 | 5.0 | 0.110 |
| 1.5KE350A | 1.5KE350CA | 300.00 | 332.00 | 368.00 | 1.0 | 5.0 | 482.0 | 4.0 | 0.110 |
| 1.5KE400A | 1.5KE400CA | 342.00 | 380.00 | 420.00 | 1.0 | 5.0 | 548.0 | 4.0 | 0.110 |

Notes: 1. Suffix 'C' denotes bidirectional device.
2. For bidirectional devices having V_R of 10 volts and under, the I_R limit is doubled.



Fig. 1 Pulse Waveform



Fig. 2 Typical Total Capacitance



Fig. 3 Pulse Rating Curve



Fig. 4 Pulse Derating Curve



Fig. 5 Steady State Power Derating

Ordering Information (Note 4 & 5)

| Device | Packaging | Shipping |
|------------------|-----------|-------------------------|
| (Type Number)-B* | DO-201 | 1K/Bulk |
| (Type Number)-T* | DO-201 | 1K/Tape & Reel, 13-inch |

- Notes:
- *Add "-B" or "-T" to the appropriate type number in Table 1. Example: 6.40 Reverse Standoff Voltage, UNI = 1.5KE7V5A-B.
 - For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.