

1.5KE SERIES

V_{BR} : 6.8 - 440 Volts
P_{PK} : 1500 Watts

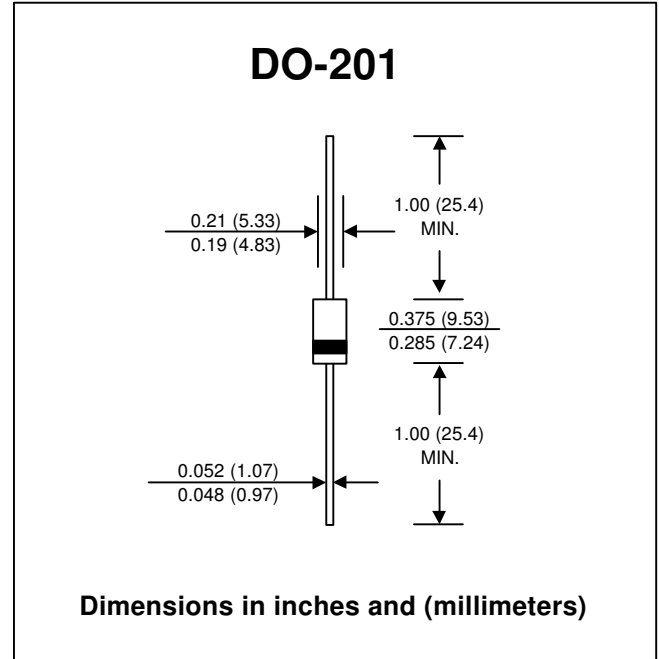
FEATURES :

- * 1500W surge capability at 1ms
- * Excellent clamping capability
- * Low zener impedance
- * Fast response time : typically less than 1.0 ps from 0 volt to V_{BR(min.)}
- * Typical I_R less than 1μA above 10V

MECHANICAL DATA

- * Case : DO-201 Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- * Polarity : Color band denotes cathode end except Bipolar.
- * Mounting position : Any
- * Weight : 0.93 grams

TRANSIENT VOLTAGE SUPPRESSOR



MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

| Rating | Symbol | Value | Unit |
|--|-----------------------------------|---------------|------|
| Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1) | PPK | Minimum 1500 | W |
| Steady State Power Dissipation at TL = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2) | P _D | 5.0 | W |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3) | I _{FSM} | 200 | A |
| Operating and Storage Temperature Range | T _J , T _{STG} | - 65 to + 175 | °C |

Notes :

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on Copper Leaf area of 1.57 in² (40mm²).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.



ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified

| Type No. | | Breakdown Voltage @ It (Note 1) | | | Working Peak Reverse Voltage | Maximum Reverse Leakage @ VRWM | Maximum Reverse Current | Maximum Clamping Voltage @ IRSM | Maximum Temperature Co-efficient of VBR |
|-----------------|----------------|--------------------------------------|------|------|------------------------------------|--------------------------------------|-------------------------------|---------------------------------------|--|
| Uni-directional | Bi-directional | VBR (V) | | It | VRWM | IR | IRSM | VRSM | of VBR (% /°C) |
| | | Min. | Max. | (mA) | (V) | (µA) | (A) | (V) | |
| 1.5KE6.8A | 1.5KE6.8CA | 6.45 | 7.14 | 10 | 5.80 | 2000 | 143 | 10.5 | 0.057 |
| 1.5KE7.5A | 1.5KE7.5CA | 7.13 | 7.88 | 10 | 6.40 | 1000 | 132 | 11.3 | 0.061 |
| 1.5KE8.2A | 1.5KE8.2CA | 7.79 | 8.61 | 10 | 7.02 | 400 | 124 | 12.1 | 0.065 |
| 1.5KE9.1A | 1.5KE9.1CA | 8.65 | 9.55 | 1.0 | 7.78 | 100 | 112 | 13.4 | 0.068 |
| 1.5KE10A | 1.5KE10CA | 9.50 | 10.5 | 1.0 | 8.55 | 10 | 103 | 14.5 | 0.073 |
| 1.5KE11A | 1.5KE11CA | 10.5 | 11.6 | 1.0 | 9.40 | 10 | 96.0 | 15.6 | 0.075 |
| 1.5KE12A | 1.5KE12CA | 11.4 | 12.6 | 1.0 | 10.2 | 5.0 | 90.0 | 16.7 | 0.078 |
| 1.5KE13A | 1.5KE13CA | 12.4 | 13.7 | 1.0 | 11.1 | 5.0 | 82.0 | 18.2 | 0.081 |
| 1.5KE15A | 1.5KE15CA | 14.3 | 15.8 | 1.0 | 12.8 | 5.0 | 71.0 | 21.2 | 0.084 |
| 1.5KE16A | 1.5KE16CA | 15.2 | 16.8 | 1.0 | 13.6 | 5.0 | 67.0 | 22.5 | 0.086 |
| 1.5KE18A | 1.5KE18CA | 17.1 | 18.9 | 1.0 | 15.3 | 5.0 | 59.5 | 25.2 | 0.088 |
| 1.5KE20A | 1.5KE20CA | 19.0 | 21.0 | 1.0 | 17.1 | 5.0 | 54.0 | 27.7 | 0.090 |
| 1.5KE22A | 1.5KE22CA | 20.9 | 23.1 | 1.0 | 18.8 | 5.0 | 49.0 | 30.6 | 0.092 |
| 1.5KE24A | 1.5KE24CA | 22.8 | 25.2 | 1.0 | 20.5 | 5.0 | 45.0 | 33.2 | 0.094 |
| 1.5KE27A | 1.5KE27CA | 25.7 | 28.4 | 1.0 | 23.1 | 5.0 | 40.0 | 37.5 | 0.096 |
| 1.5KE30A | 1.5KE30CA | 28.5 | 31.5 | 1.0 | 25.6 | 5.0 | 36.0 | 41.4 | 0.097 |
| 1.5KE33A | 1.5KE33CA | 31.4 | 34.7 | 1.0 | 28.2 | 5.0 | 33.0 | 45.7 | 0.098 |
| 1.5KE36A | 1.5KE36CA | 34.2 | 37.8 | 1.0 | 30.8 | 5.0 | 30.0 | 49.9 | 0.099 |
| 1.5KE39A | 1.5KE39CA | 37.1 | 41.0 | 1.0 | 33.3 | 5.0 | 28.0 | 53.9 | 0.100 |
| 1.5KE43A | 1.5KE43CA | 40.9 | 45.2 | 1.0 | 36.8 | 5.0 | 25.3 | 59.3 | 0.101 |
| 1.5KE47A | 1.5KE47CA | 44.7 | 49.4 | 1.0 | 40.2 | 5.0 | 23.2 | 64.8 | 0.101 |
| 1.5KE51A | 1.5KE51CA | 48.5 | 53.6 | 1.0 | 43.6 | 5.0 | 21.4 | 70.1 | 0.102 |
| 1.5KE56A | 1.5KE56CA | 53.2 | 58.8 | 1.0 | 47.8 | 5.0 | 19.5 | 77.0 | 0.103 |
| 1.5KE62A | 1.5KE62CA | 58.9 | 65.1 | 1.0 | 53.0 | 5.0 | 17.7 | 85.0 | 0.104 |
| 1.5KE68A | 1.5KE68CA | 64.6 | 71.4 | 1.0 | 58.1 | 5.0 | 16.3 | 92.0 | 0.104 |
| 1.5KE75A | 1.5KE75CA | 71.3 | 78.8 | 1.0 | 64.1 | 5.0 | 14.6 | 103 | 0.105 |
| 1.5KE82A | 1.5KE82CA | 77.9 | 86.1 | 1.0 | 70.1 | 5.0 | 13.3 | 113 | 0.105 |
| 1.5KE91A | 1.5KE91CA | 86.5 | 95.5 | 1.0 | 77.8 | 5.0 | 12.0 | 125 | 0.106 |
| 1.5KE100A | 1.5KE100CA | 95.0 | 105 | 1.0 | 85.5 | 5.0 | 11.0 | 137 | 0.106 |
| 1.5KE110A | 1.5KE110CA | 105 | 116 | 1.0 | 94.0 | 5.0 | 9.9 | 152 | 0.107 |
| 1.5KE120A | 1.5KE120CA | 114 | 126 | 1.0 | 102 | 5.0 | 9.1 | 165 | 0.107 |
| 1.5KE130A | 1.5KE130CA | 124 | 137 | 1.0 | 111 | 5.0 | 8.4 | 179 | 0.107 |
| 1.5KE150A | 1.5KE150CA | 143 | 158 | 1.0 | 128 | 5.0 | 7.2 | 207 | 0.108 |
| 1.5KE160A | 1.5KE160CA | 152 | 168 | 1.0 | 136 | 5.0 | 6.8 | 219 | 0.108 |
| 1.5KE170A | 1.5KE170CA | 162 | 179 | 1.0 | 145 | 5.0 | 6.4 | 234 | 0.108 |
| 1.5KE180A | 1.5KE180CA | 171 | 189 | 1.0 | 154 | 5.0 | 6.1 | 246 | 0.108 |
| 1.5KE200A | 1.5KE200CA | 190 | 210 | 1.0 | 171 | 5.0 | 5.5 | 274 | 0.108 |
| 1.5KE220A | 1.5KE220CA | 209 | 231 | 1.0 | 185 | 5.0 | 4.6 | 328 | 0.108 |
| 1.5KE250A | 1.5KE250CA | 237 | 263 | 1.0 | 214 | 5.0 | 5.0 | 344 | 0.110 |
| 1.5KE300A | 1.5KE300CA | 285 | 315 | 1.0 | 256 | 5.0 | 5.0 | 414 | 0.110 |
| 1.5KE350A | 1.5KE350CA | 332 | 368 | 1.0 | 300 | 5.0 | 4.0 | 482 | 0.110 |
| 1.5KE400A | 1.5KE400CA | 380 | 420 | 1.0 | 342 | 5.0 | 4.0 | 548 | 0.110 |
| 1.5KE440A | 1.5KE440CA | 418 | 462 | 1.0 | 376 | 5.0 | 2.50 | 602 | 0.110 |

Notes:

- (1) VBR measured after It applied for 300 µs., It = square wave pulse or equivalent.
- (2) VF = 3.5 Vmax., IF = 100 Amps. (6.8 Volts thru 91 Volts)
 VF = 5.0 Vmax., IF = 100 Amps. (100 Volts thru 440 Volts) per 1/2 square or equivalent sine wave.
 PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.
- (3) "1.5" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (1.5KE SERIES)

FIG.1 - PULSE DERATING CURVE

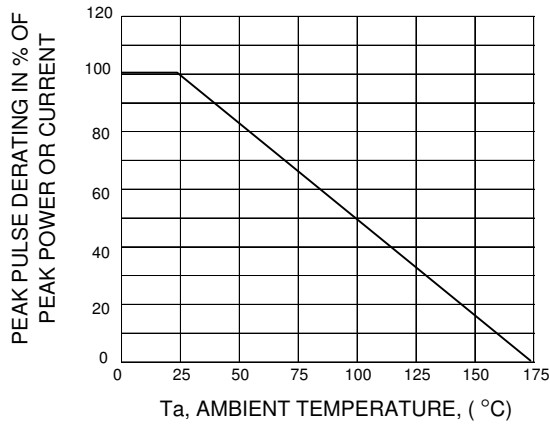


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

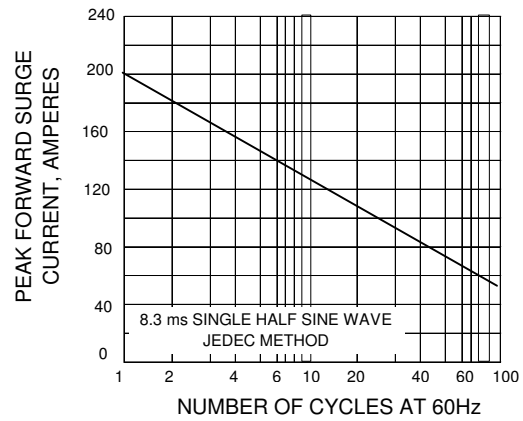


FIG.3 - STEADY STATE POWER DERATING

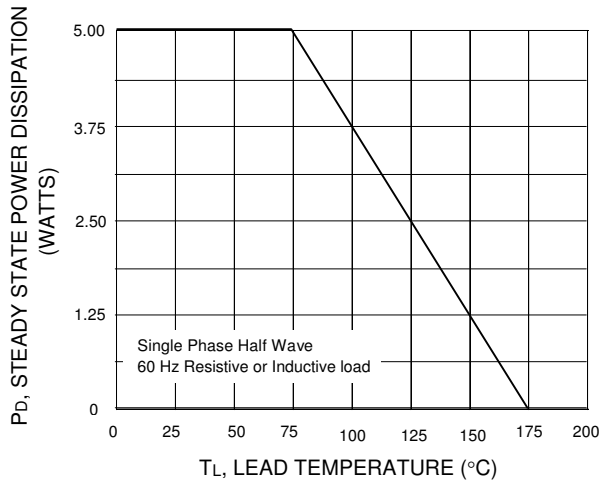


FIG.4 - PULSE RATING CURVE

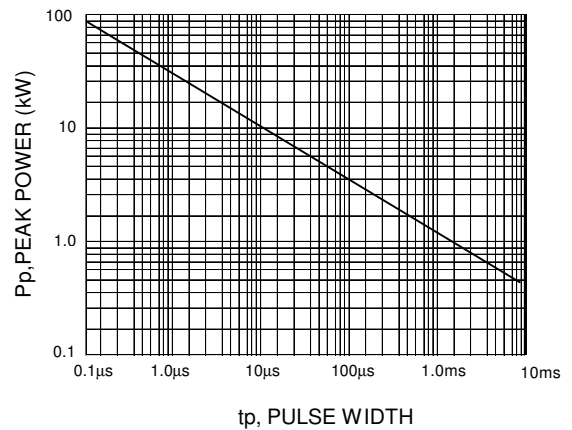


FIG.5 - PULSE WAVEFORM

