

1.5KE Series

Breakdown Voltage: 6.8 - 440 Volts

Power: 1500 Watt

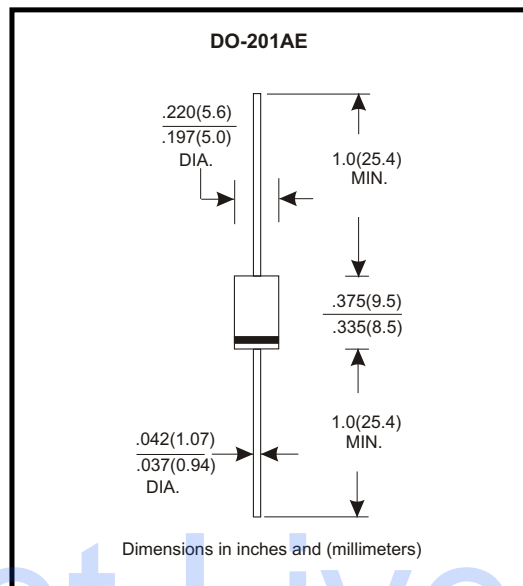


Features

- Plastic package has underwriters laboratory flammability classification 94V-0
- 1500W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0 ps from 0 Volts to B_v min
- Typical I_r less than $1\mu A$ above 10V
- High temperature aging guaranteed: $260^\circ C/10s$ / .375" (9.5mm) lead length/5lbs., (2.3kg) tension

Mechanical data

- Case: molded plastic
- Terminals: Auaxial leads, solderable per MIL-STD-202, method 208
- Polarity: color band denoted cathode except bipolar
- Weight: 1.2 GRAMS



Maximum Ratings and Electrical Characteristics

| RATINGS | SYMBOL | VALUE | UNITS |
|--|----------------|---------------|------------|
| PEAK POWER DISSIPATION AT $T_A=25^\circ C$, $T_P=1ms$ (NOTE 1) | P_{PK} | MINIMUM 1500 | WATTS |
| STEADY STATE POWER DISSIPATION AT $T_L=75^\circ C$ LEAD LENGTHS .375" (9.5mm) (NOTE 2) | PD | 5.0 | WATTS |
| PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD (JEDEC METHOD) (NOTE 3) | I_{FSM} | 200 | Amps |
| OPERATING AND STORAGE TEMPERATURE RANGE | T_J, T_{STG} | - 55 TO + 175 | $^\circ C$ |

NOTE :

1. NON-REPETITIVE CURRENT PULSE, PER FIG.3 AND DERATED ABOVE $T_A=25^\circ C$ PER FIG 2.
2. MOUNTED ON COPPER LEAF AREA OF $0.79 IN^2$ ($20mm^2$)
3. 8.3ms SINGLE HALF SINE-WAVE, DUTY CYCLE=4 PULSES PER MINUTES MAXIMUM
4. FOR BIDIRECTIONAL USE C SUFFIX FOR 10% TOLERANCE, CA SUFFIX FOR 5% TOLERANCE

1500W Transient Voltage Suppressor

| JEDEC TYPE NUMBER | GENERAL PART NUMBER | BREAKDOWN V_{BR} (VOLTS) | | @IT (mA) | WORKING PEAK REVERSE VOLTAGE V_{RWM} (VOLTS) | MAXIMUM REVERSE LEAKAGE AT V_{RWM} IR(μ A) | MAXIMUM REVERSE SURGE CURRENT I_{RSM} (AMPS) | MAX CLAMPING VOLTAGE V_{RWM} (VOLTS) | MAXIMUM TEMPERATURE COEFFICIENT OF V_{BR} (%C) V_{RSM} (VOLTS) |
|-------------------|---------------------|----------------------------|------|----------|--|---|--|--|--|
| | | MIN | MAX | | | | | | |
| 1N6267 | 1.5KE6.8 | 6.12 | 7.48 | 10 | 5.50 | 1000 | 139 | 10.8 | 0.057 |
| 1N6267A | 1.5KE6.8A | 6.45 | 7.14 | 10 | 5.80 | 1000 | 143 | 10.5 | 0.057 |
| 1N6268 | 1.5KE7.5 | 6.75 | 8.25 | 10 | 6.05 | 500 | 128 | 11.7 | 0.061 |
| 1N6268A | 1.5KE7.5A | 7.13 | 7.88 | 10 | 6.40 | 500 | 132 | 11.3 | 0.061 |
| 1N6269 | 1.5KE8.2 | 7.38 | 9.02 | 10 | 6.63 | 200 | 120 | 12.5 | 0.065 |
| 1N6269A | 1.5KE8.2A | 7.79 | 8.00 | 10 | 7.02 | 200 | 124 | 12.1 | 0.065 |
| 1N6270 | 1.5KE9.1 | 8.19 | 10.0 | 1.0 | 7.37 | 50 | 109 | 13.8 | 0.068 |
| 1N6270A | 1.5KE9.1A | 8.65 | 9.55 | 1.0 | 7.78 | 50 | 112 | 13.4 | 0.068 |
| 1N6271 | 1.5KE10 | 9.00 | 11.0 | 1.0 | 8.10 | 10 | 100 | 15.0 | 0.073 |
| 1N6271A | 1.5KE10A | 9.50 | 10.5 | 1.0 | 8.55 | 10 | 103 | 14.5 | 0.073 |
| 1N6272 | 1.5KE11 | 9.90 | 12.1 | 1.0 | 8.92 | 5.0 | 93.0 | 16.2 | 0.075 |
| 1N6272A | 1.5KE11A | 10.5 | 11.6 | 1.0 | 9.40 | 5.0 | 96.0 | 15.6 | 0.075 |
| 1N6273 | 1.5KE12 | 10.8 | 13.2 | 1.0 | 9.72 | 5.0 | 87.0 | 17.3 | 0.078 |
| 1N6273A | 1.5KE12A | 11.4 | 12.6 | 1.0 | 10.2 | 5.0 | 90.0 | 16.7 | 0.078 |
| 1N6274 | 1.5KE13 | 11.7 | 14.3 | 1.0 | 10.5 | 5.0 | 79.0 | 19.0 | 0.081 |
| 1N6274A | 1.5KE13A | 12.4 | 13.7 | 1.0 | 11.1 | 5.0 | 82.0 | 18.2 | 0.081 |
| 1N6275 | 1.5KE15 | 13.5 | 16.5 | 1.0 | 12.1 | 5.0 | 68.0 | 22.0 | 0.084 |
| 1N6275A | 1.5KE15A | 14.3 | 15.8 | 1.0 | 12.8 | 5.0 | 71.0 | 21.2 | 0.084 |
| 1N6276 | 1.5KE16 | 14.4 | 17.6 | 1.0 | 12.9 | 5.0 | 64.0 | 23.5 | 0.086 |
| 1N6276A | 1.5KE16A | 15.2 | 16.8 | 1.0 | 13.6 | 5.0 | 67.0 | 22.5 | 0.086 |
| 1N6277 | 1.5KE18 | 16.2 | 19.8 | 1.0 | 14.5 | 5.0 | 56.5 | 26.5 | 0.088 |
| 1N6277A | 1.5KE18A | 17.1 | 18.9 | 1.0 | 15.3 | 5.0 | 59.5 | 25.2 | 0.088 |
| 1N6278 | 1.5KE20 | 18.0 | 22.0 | 1.0 | 16.2 | 5.0 | 51.5 | 29.1 | 0.090 |
| 1N6278A | 1.5KE20A | 19.0 | 21.0 | 1.0 | 17.1 | 5.0 | 54.0 | 27.7 | 0.090 |
| 1N6279 | 1.5KE22 | 19.8 | 24.2 | 1.0 | 17.8 | 5.0 | 47.0 | 31.9 | 0.092 |
| 1N6279A | 1.5KE22A | 20.9 | 23.1 | 1.0 | 18.8 | 5.0 | 49.0 | 30.6 | 0.092 |
| 1N6280 | 1.5KE24 | 21.6 | 26.4 | 1.0 | 19.4 | 5.0 | 43.0 | 34.7 | 0.094 |
| 1N6280A | 1.5KE24A | 22.8 | 25.2 | 1.0 | 20.5 | 5.0 | 45.0 | 33.2 | 0.094 |
| 1N6281 | 1.5KE27 | 24.3 | 29.7 | 1.0 | 21.8 | 5.0 | 38.5 | 39.1 | 0.096 |
| 1N6281A | 1.5KE27A | 25.7 | 28.4 | 1.0 | 23.1 | 5.0 | 40.0 | 37.5 | 0.096 |
| 1N6282 | 1.5KE30 | 27.0 | 33.0 | 1.0 | 24.3 | 5.0 | 34.5 | 43.5 | 0.097 |
| 1N6282A | 1.5KE30A | 28.5 | 31.5 | 1.0 | 25.6 | 5.0 | 36.0 | 41.4 | 0.097 |
| 1N6283 | 1.5KE33 | 29.7 | 36.3 | 1.0 | 26.8 | 5.0 | 31.5 | 47.7 | 0.098 |
| 1N6283A | 1.5KE33A | 31.4 | 34.7 | 1.0 | 28.2 | 5.0 | 33.0 | 45.7 | 0.098 |
| 1N6284 | 1.5KE36 | 32.4 | 39.6 | 1.0 | 29.1 | 5.0 | 29.0 | 52.0 | 0.099 |
| 1N6284A | 1.5KE36A | 34.2 | 37.8 | 1.0 | 30.8 | 5.0 | 30.0 | 49.9 | 0.099 |
| 1N6285 | 1.5KE39 | 35.1 | 42.9 | 1.0 | 31.6 | 5.0 | 26.5 | 56.4 | 0.100 |
| 1N6285A | 1.5KE39A | 37.1 | 41.0 | 1.0 | 33.3 | 5.0 | 28.0 | 53.9 | 0.100 |
| 1N6286 | 1.5KE43 | 38.7 | 47.3 | 1.0 | 34.8 | 5.0 | 24.0 | 61.9 | 0.101 |
| 1N6286A | 1.5KE43A | 40.9 | 45.2 | 1.0 | 36.8 | 5.0 | 25.3 | 59.3 | 0.101 |
| 1N6287 | 1.5KE47 | 42.3 | 51.7 | 1.0 | 36.1 | 5.0 | 22.2 | 67.8 | 0.101 |
| 1N6287A | 1.5KE47A | 44.7 | 49.4 | 1.0 | 40.2 | 5.0 | 23.2 | 64.8 | 0.101 |
| 1N6288 | 1.5KE51 | 45.9 | 56.1 | 1.0 | 41.3 | 5.0 | 20.4 | 73.5 | 0.102 |
| 1N6288A | 1.5KE51A | 48.5 | 53.6 | 1.0 | 43.6 | 5.0 | 21.4 | 70.1 | 0.102 |
| 1N6289 | 1.5KE56 | 50.4 | 61.8 | 1.0 | 45.4 | 5.0 | 18.6 | 80.5 | 0.103 |
| 1N6289A | 1.5KE56A | 53.2 | 58.8 | 1.0 | 47.8 | 5.0 | 19.5 | 77.0 | 0.103 |
| 1N6290 | 1.5KE62 | 55.8 | 68.2 | 1.0 | 50.2 | 5.0 | 16.9 | 89.0 | 0.104 |
| 1N6290A | 1.5KE62A | 58.9 | 65.1 | 1.0 | 53.0 | 5.0 | 17.7 | 85.0 | 0.104 |
| 1N6291 | 1.5KE68 | 61.2 | 74.8 | 1.0 | 55.1 | 5.0 | 15.3 | 98.0 | 0.104 |
| 1N6291A | 1.5KE68A | 64.6 | 71.4 | 1.0 | 58.1 | 5.0 | 16.3 | 92.0 | 0.104 |
| 1N6292 | 1.5KE75 | 67.5 | 82.5 | 1.0 | 60.7 | 5.0 | 13.9 | 108.0 | 0.105 |
| 1N6292A | 1.5KE75A | 71.3 | 78.8 | 1.0 | 64.1 | 5.0 | 14.6 | 103.0 | 0.105 |
| 1N6293 | 1.5KE82 | 73.8 | 90.2 | 1.0 | 66.4 | 5.0 | 12.7 | 118.0 | 0.105 |
| 1N6293A | 1.5KE82A | 77.9 | 86.1 | 1.0 | 70.1 | 5.0 | 13.3 | 113.0 | 0.105 |

1500W Transient Voltage Suppressor

| DEVICE | GENERAL PART NUMBER | BREAKDOWN V_{BR} (VOLTS) | | @ I_T (mA) | WORKING PEAK REVERSE VOLTAGE V_{RWM} (VOLTS) | MAXIMUM REVERSE LEAKAGE AT V_{RWM} I_R (μ A) | MAXIMUM REVERSE CURRENT I_{RSM} (AMPS) | MAX CLAMPING VOLTAGE V_{RWM} (VOLTS) | MAXIMUM TEMPERATURE COEFFICIENT OF V_{BR} (%C) V_{RSM} (VOLTS) |
|---------|---------------------|----------------------------|-------|--------------|--|---|--|--|--|
| | | MIN | MAX | | | | | | |
| 1N6294 | 1.5KE91 | 81.9 | 100.0 | 1.0 | 73.7 | 5.0 | 11.4 | 131.8 | 0.106 |
| 1N6294A | 1.5KE91A | 86.5 | 95.50 | 1.0 | 77.8 | 5.0 | 12.0 | 125.0 | 0.106 |
| 1N6295 | 1.5KE100 | 90.0 | 110.0 | 1.0 | 81.0 | 5.0 | 10.4 | 144.0 | 0.106 |
| 1N6295A | 1.5KE100A | 95.0 | 105.0 | 1.0 | 85.5 | 5.0 | 11.0 | 137.0 | 0.106 |
| 1N6296 | 1.5KE110 | 99.0 | 121.0 | 1.0 | 89.2 | 5.0 | 9.5 | 158.0 | 0.107 |
| 1N6296A | 1.5KE110A | 106.0 | 116.0 | 1.0 | 94.0 | 5.0 | 9.9 | 152.0 | 0.107 |
| 1N6297 | 1.5KE120 | 108.0 | 132.0 | 1.0 | 97.2 | 5.0 | 8.7 | 173.0 | 0.107 |
| 1N6297A | 1.5KE120A | 114.0 | 126.0 | 1.0 | 102.0 | 5.0 | 9.1 | 165.0 | 0.107 |
| 1N6298 | 1.5KE130 | 117.0 | 143.0 | 1.0 | 106.0 | 5.0 | 8.0 | 187.0 | 0.107 |
| 1N6298A | 1.5KE130A | 124.0 | 137.0 | 1.0 | 111.0 | 5.0 | 8.4 | 179.0 | 0.107 |
| 1N6299 | 1.5KE150 | 136.0 | 165.0 | 1.0 | 121.0 | 5.0 | 7.0 | 215.0 | 0.108 |
| 1N6299A | 1.5KE150A | 143.0 | 158.0 | 1.0 | 128.0 | 5.0 | 7.2 | 207.0 | 0.108 |
| 1N6300 | 1.5KE160 | 144.0 | 176.0 | 1.0 | 130.0 | 5.0 | 6.5 | 230.0 | 0.108 |
| 1N6300A | 1.5KE160A | 152.0 | 168.0 | 1.0 | 136.0 | 5.0 | 6.8 | 219.0 | 0.108 |
| 1N6301 | 1.5KE170 | 153.0 | 187.0 | 1.0 | 138.0 | 5.0 | 6.2 | 244.0 | 0.108 |
| 1N6301A | 1.5KE170A | 162.0 | 179.0 | 1.0 | 145.0 | 5.0 | 6.4 | 234.0 | 0.108 |
| 1N6302 | 1.5KE180 | 162.0 | 198.0 | 1.0 | 146.0 | 5.0 | 5.8 | 258.0 | 0.108 |
| 1N6302A | 1.5KE180A | 171.0 | 189.0 | 1.0 | 154.0 | 5.0 | 6.1 | 246.0 | 0.108 |
| 1N6303 | 1.5KE200 | 180.0 | 220.0 | 1.0 | 162.0 | 5.0 | 5.2 | 287.0 | 0.108 |
| 1N6303A | 1.5KE200A | 190.0 | 210.0 | 1.0 | 171.0 | 5.0 | 5.5 | 274.0 | 0.108 |
| | 1.5KE220 | 196.0 | 242.0 | 1.0 | 175.0 | 5.0 | 4.4 | 344.0 | 0.108 |
| | 1.5KE220A | 209.0 | 231.0 | 1.0 | 185.0 | 5.0 | 4.6 | 328.0 | 0.108 |
| | 1.5KE250 | 225.0 | 275.0 | 1.0 | 202.0 | 5.0 | 4.2 | 360.0 | 0.110 |
| | 1.5KE250A | 237.0 | 263.0 | 1.0 | 214.0 | 5.0 | 4.4 | 344.0 | 0.110 |
| | 1.5KE300 | 270.0 | 330.0 | 1.0 | 243.0 | 5.0 | 3.5 | 430.0 | 0.110 |
| | 1.5KE300A | 285.0 | 315.0 | 1.0 | 256.0 | 5.0 | 3.6 | 414.0 | 0.110 |
| | 1.5KE350 | 315.0 | 385.0 | 1.0 | 284.0 | 5.0 | 3.0 | 504.0 | 0.110 |
| | 1.5KE350A | 333.0 | 368.0 | 1.0 | 300.0 | 5.0 | 3.1 | 482.0 | 0.110 |
| | 1.5KE400 | 360.0 | 440.0 | 1.0 | 324.0 | 5.0 | 2.6 | 574.0 | 0.110 |
| | 1.5KE400A | 380.0 | 420.0 | 1.0 | 342.0 | 5.0 | 2.7 | 548.0 | 0.110 |
| | 1.5KE440 | 396.0 | 484.0 | 1.0 | 356.0 | 5.0 | 2.4 | 631.0 | 0.110 |
| | 1.5KE440A | 418.0 | 462.0 | 1.0 | 376.0 | 5.0 | 2.5 | 602.0 | 0.110 |

NOTES : 1. V_{BR} MEASURED AFTER I_T APPLIED FOR 300 μ S, I_T =SQUARE WAVE PULSE OR EQUIVALENT

2. SURGE CURRENT WAVEFORM PER FIGURE 3 AND DERATED PER FIGURE 2.

3. V_F =3.5V MAX, I_F =100A (1.5KE6.8 THRU 1.5KE91A)

V_F =5.0V MAX, I_F =100A (1.5KE100 THRU 1.5KE440A) PER 1/2 SQUARE OR EQUIVALENT SINE WAVE.

PW=8.3ms, DUTY CYCLE=4 PULSES PER MINUTE MXIMUM

4. FOR BIPOLAR TYPES HAVING V_{RWM} OF 10 VOLTS AND UNDER, THE I_R LIMIT IS DOUBLED

Rating and Characteristic Curves (1.5KE6.8 THRU 1.5KE440CA)

FIG. 1 - PEAK PULSE POWER RATING CURVE

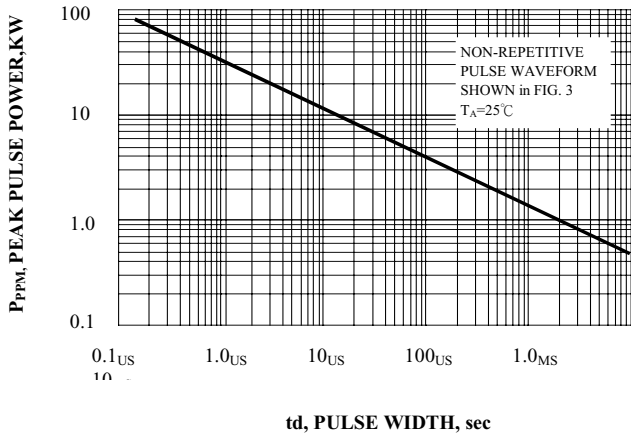


FIG. 2 - PULSE DERATING CURVE

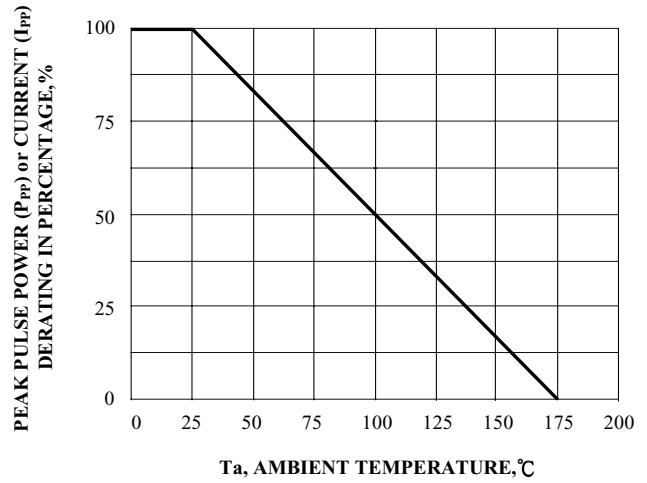


FIG. 3 - PULSE WAVEFORM

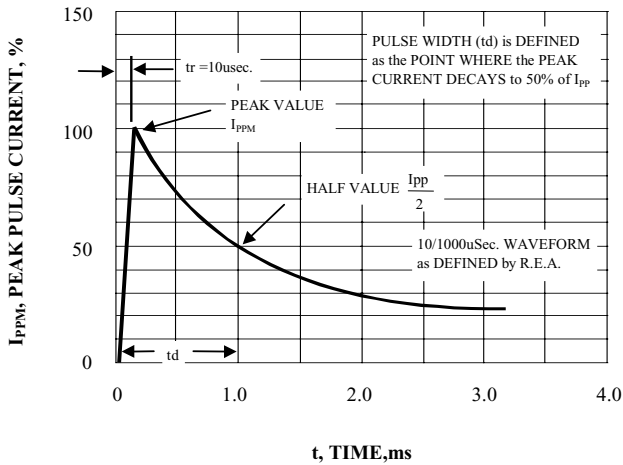


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

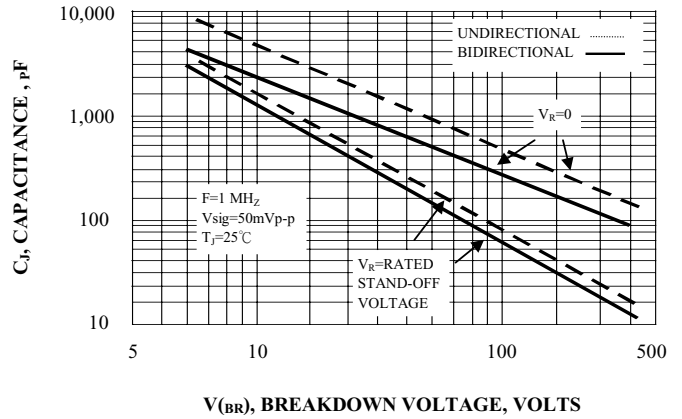


FIG. 5 - STEADY STATE POWER DERATING

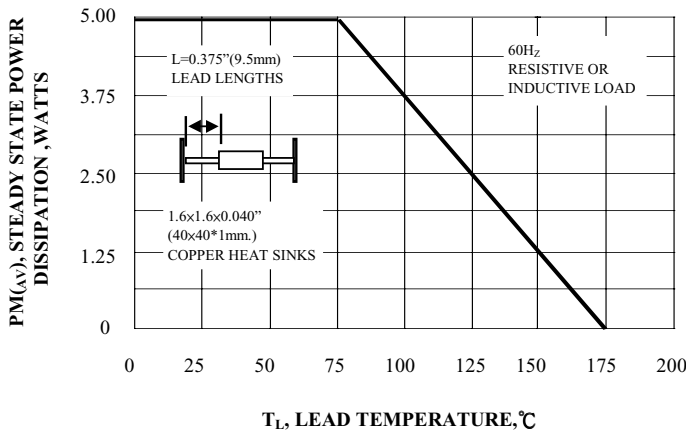
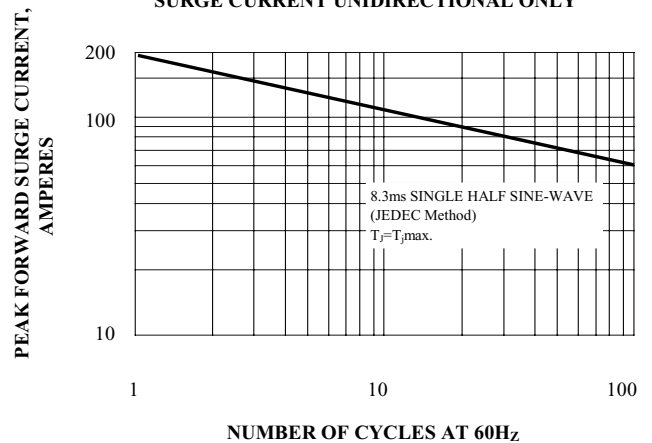


FIG. 6 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY



Rating and Characteristic Curves (1.5KE6.8 THRU 1.5KE440CA)

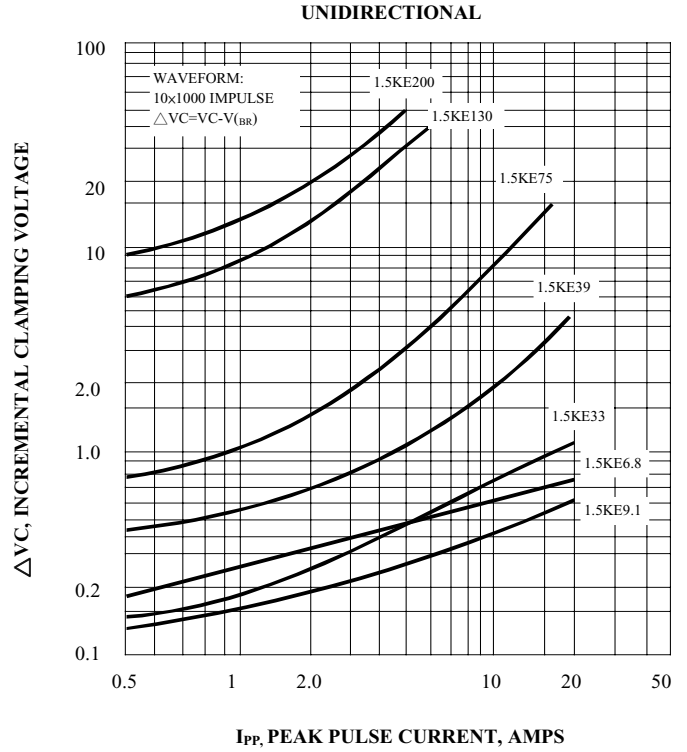
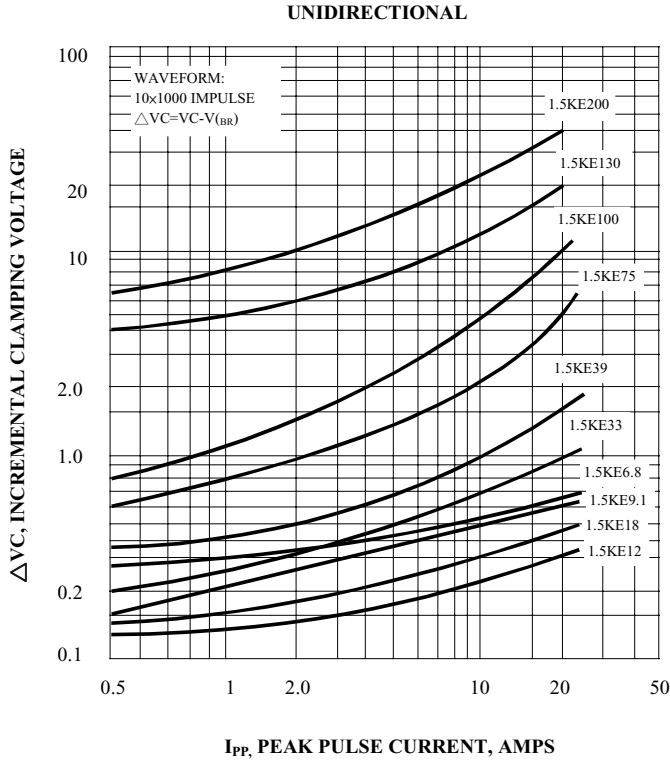


FIG. 9 - INCREMENTAL CLAMPING VOLTAGE CURVE BIDIRECTIONAL

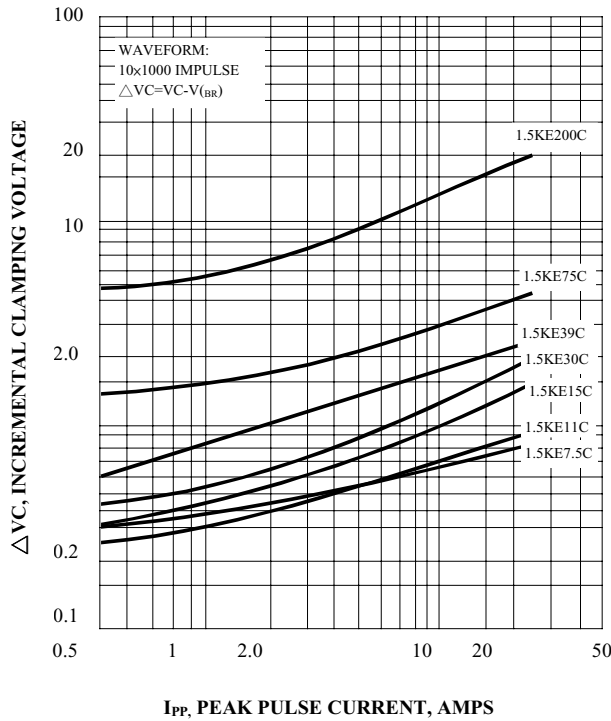
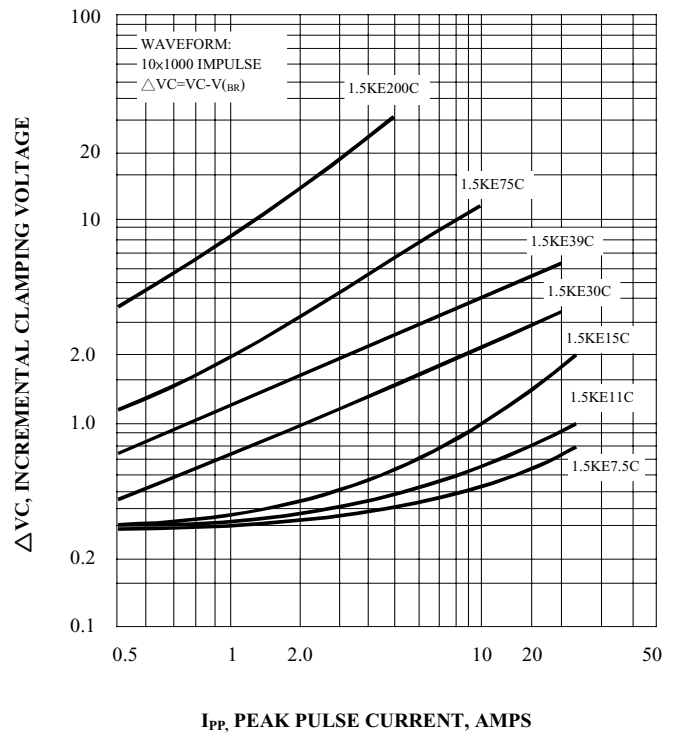


FIG. 10 - INCREMENTAL CLAMPING VOLTAGE CURVE BIDIRECTIONAL



Rating and Characteristic Curves (1.5KE6.8 THRU 1.5KE440CA)

FIG. 11 - INSTANTANEOUS FORWARD VOLTAGE CHARACTERISTICS CURVE

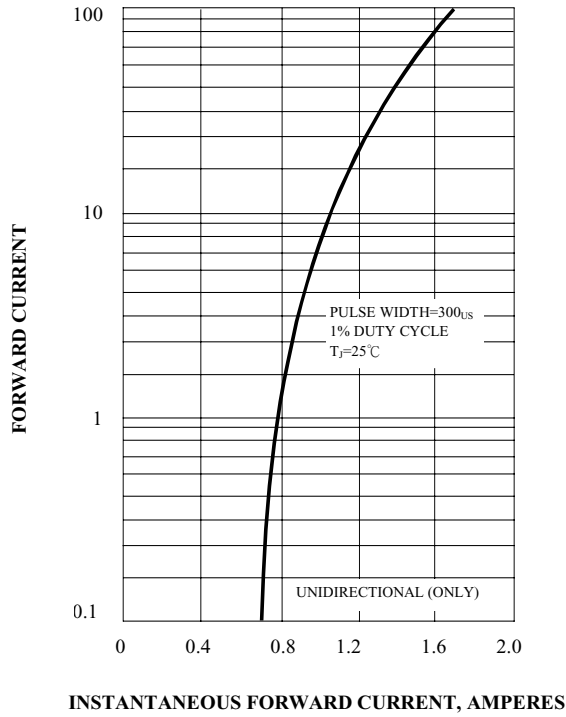


FIG. 12 - BREAKDOWN VOLTAGE TEMPERATURE COEFFICIENT CURVE

