

| REVISIONS |     |             |        | DOC. NO. SPC-F004, Total Pages: 2<br>Effective: 7/15/97. DCP No: 229 Supersedes DCP No: 103 |        |         |        |         |  |
|-----------|-----|-------------|--------|---------------------------------------------------------------------------------------------|--------|---------|--------|---------|--|
| DCP #     | REV | DESCRIPTION | DRAWN  | DATE                                                                                        | CHECKD | DATE    | APPRVD | DATE    |  |
| 139       | A   | RELEASED    | J.W.M. | 7/23/97                                                                                     | J.C.   | 7/23/97 | B.B.   | 7/23/97 |  |
|           |     |             |        |                                                                                             |        |         |        |         |  |

| Part No.   | Reverse<br>Stand-Off<br>Voltage<br>VRWM (V) | Breakdown<br>Voltage<br>VBR (V)<br>Min @ IT | Breakdown<br>Voltage<br>VBR (V)<br>Max @ IT | Test<br>Current<br>IT<br>(mA) | Maximum<br>Clamping<br>Voltage<br>@ Ipp Vc (V) | Peak<br>Pulse<br>Current<br>Ipp (A) | Reverse<br>Leakage<br>@ VRWM<br>IR (uA) |
|------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------|------------------------------------------------|-------------------------------------|-----------------------------------------|
| 1.5KE10A   | 8.55                                        | 9.50                                        | 10.50                                       | 1                             | 14.5                                           | 103.0                               | 10.0                                    |
| 1.5KE10C   | 8.10                                        | 9.00                                        | 11.00                                       | 1                             | 15.0                                           | 100.0                               | 20.0                                    |
| 1.5KE12A   | 10.20                                       | 11.40                                       | 12.60                                       | 1                             | 16.7                                           | 90.0                                | 5.0                                     |
| 1.5KE12C   | 9.72                                        | 10.80                                       | 13.20                                       | 1                             | 17.3                                           | 87.0                                | 5.0                                     |
| 1.5KE15A   | 12.80                                       | 14.30                                       | 15.80                                       | 1                             | 21.2                                           | 71.0                                | 5.0                                     |
| 1.5KE15C   | 12.10                                       | 13.50                                       | 16.50                                       | 1                             | 22.0                                           | 68.0                                | 5.0                                     |
| 1.5KE16A   | 13.60                                       | 15.20                                       | 16.80                                       | 1                             | 22.5                                           | 67.0                                | 5.0                                     |
| 1.5KE16C   | 12.90                                       | 14.40                                       | 17.60                                       | 1                             | 23.5                                           | 64.0                                | 5.0                                     |
| 1.5KE18C   | 14.50                                       | 16.20                                       | 19.80                                       | 1                             | 26.5                                           | 56.5                                | 5.0                                     |
| 1.5KE20A   | 17.10                                       | 19.00                                       | 21.00                                       | 1                             | 27.7                                           | 54.0                                | 5.0                                     |
| 1.5KE20C   | 16.20                                       | 18.00                                       | 22.00                                       | 1                             | 29.1                                           | 51.5                                | 5.0                                     |
| 1.5KE22A   | 18.80                                       | 20.90                                       | 23.10                                       | 1                             | 30.6                                           | 49.0                                | 5.0                                     |
| 1.5KE22C   | 17.80                                       | 19.80                                       | 24.20                                       | 1                             | 31.9                                           | 47.0                                | 5.0                                     |
| 1.5KE30A   | 25.60                                       | 28.50                                       | 31.50                                       | 1                             | 41.4                                           | 36.0                                | 5.0                                     |
| 1.5KE30C   | 24.30                                       | 27.00                                       | 33.00                                       | 1                             | 43.5                                           | 34.5                                | 5.0                                     |
| 1.5KE36A   | 30.80                                       | 34.20                                       | 37.80                                       | 1                             | 49.9                                           | 30.0                                | 5.0                                     |
| 1.5KE36C   | 29.10                                       | 32.40                                       | 39.60                                       | 1                             | 52.0                                           | 29.0                                | 5.0                                     |
| 1.5KE36CA  | 30.80                                       | 34.20                                       | 37.80                                       | 1                             | 49.9                                           | 30.0                                | 5.0                                     |
| 1.5KE39A   | 33.30                                       | 37.10                                       | 41.00                                       | 1                             | 53.9                                           | 28.0                                | 5.0                                     |
| 1.5KE39C   | 31.60                                       | 35.10                                       | 42.90                                       | 1                             | 56.4                                           | 26.5                                | 5.0                                     |
| 1.5KE51A   | 43.60                                       | 48.50                                       | 53.60                                       | 1                             | 70.1                                           | 21.4                                | 5.0                                     |
| 1.5KE51C   | 41.30                                       | 45.90                                       | 56.10                                       | 1                             | 73.5                                           | 20.4                                | 5.0                                     |
| 1.5KE51CA  | 43.60                                       | 48.50                                       | 53.60                                       | 1                             | 70.1                                           | 21.4                                | 5.0                                     |
| 1.5KE68A   | 58.10                                       | 64.60                                       | 71.40                                       | 1                             | 92.0                                           | 16.3                                | 5.0                                     |
| 1.5KE68C   | 55.10                                       | 61.20                                       | 74.80                                       | 1                             | 98.0                                           | 15.3                                | 5.0                                     |
| 1.5KE75A   | 64.10                                       | 71.30                                       | 78.80                                       | 1                             | 103.0                                          | 14.6                                | 5.0                                     |
| 1.5KE75C   | 60.70                                       | 67.50                                       | 82.50                                       | 1                             | 108.0                                          | 13.9                                | 5.0                                     |
| 1.5KE82A   | 70.10                                       | 77.90                                       | 86.10                                       | 1                             | 113.0                                          | 13.3                                | 5.0                                     |
| 1.5KE82C   | 66.40                                       | 73.80                                       | 90.20                                       | 1                             | 118.0                                          | 12.7                                | 5.0                                     |
| 1.5KE82CA  | 70.10                                       | 77.90                                       | 86.10                                       | 1                             | 113.0                                          | 13.3                                | 5.0                                     |
| 1.5KE91A   | 77.80                                       | 86.50                                       | 95.50                                       | 1                             | 125.0                                          | 12.0                                | 5.0                                     |
| 1.5KE91C   | 73.70                                       | 81.90                                       | 100.00                                      | 1                             | 131.0                                          | 11.4                                | 5.0                                     |
| 1.5KE100A  | 85.50                                       | 95.00                                       | 105.00                                      | 1                             | 137.0                                          | 11.0                                | 5.0                                     |
| 1.5KE100C  | 81.00                                       | 90.00                                       | 110.00                                      | 1                             | 144.0                                          | 10.5                                | 5.0                                     |
| 1.5KE120A  | 102.00                                      | 114.00                                      | 126.00                                      | 1                             | 165.0                                          | 9.1                                 | 5.0                                     |
| 1.5KE120C  | 97.20                                       | 108.00                                      | 132.00                                      | 1                             | 173.0                                          | 8.7                                 | 5.0                                     |
| 1.5KE150A  | 128.00                                      | 143.00                                      | 158.00                                      | 1                             | 207.0                                          | 7.2                                 | 5.0                                     |
| 1.5KE150C  | 121.00                                      | 135.00                                      | 165.00                                      | 1                             | 215.0                                          | 7.0                                 | 5.0                                     |
| 1.5KE160CA | 136.00                                      | 152.00                                      | 168.00                                      | 1                             | 219.0                                          | 6.8                                 | 5.0                                     |
| 1.5KE180A  | 154.00                                      | 171.00                                      | 189.00                                      | 1                             | 246.0                                          | 6.1                                 | 5.0                                     |
| 1.5KE180C  | 146.00                                      | 162.00                                      | 198.00                                      | 1                             | 258.0                                          | 5.8                                 | 5.0                                     |
| 1.5KE200A  | 171.00                                      | 190.00                                      | 210.00                                      | 1                             | 274.0                                          | 5.5                                 | 5.0                                     |
| 1.5KE200C  | 162.00                                      | 180.00                                      | 220.00                                      | 1                             | 287.0                                          | 5.2                                 | 5.0                                     |
| 1.5KE200CA | 171.00                                      | 190.00                                      | 210.00                                      | 1                             | 274.0                                          | 5.5                                 | 5.0                                     |
| 1.5KE250A  | 214.00                                      | 237.00                                      | 263.00                                      | 1                             | 344.0                                          | 5.0                                 | 5.0                                     |
| 1.5KE250C  | 202.00                                      | 225.00                                      | 275.00                                      | 1                             | 360.0                                          | 5.0                                 | 5.0                                     |
| 1.5KE300A  | 256.00                                      | 285.00                                      | 315.00                                      | 1                             | 414.0                                          | 5.0                                 | 5.0                                     |
| 1.5KE300C  | 243.00                                      | 270.00                                      | 330.00                                      | 1                             | 430.0                                          | 5.0                                 | 5.0                                     |

*C or CA suffix denotes Bi-Directional - Electrical characteristics apply in both directions*

SPC-F004.DWG

**DISCLAIMER:**  
ALL STATEMENTS AND TECHNICAL INFORMATION CONTAINED HEREIN ARE BASED UPON INFORMATION  
AND/OR TESTS WE BELIEVE TO BE ACCURATE AND RELIABLE. SINCE CONDITIONS OF USE ARE  
BEYOND OUR CONTROL, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE  
INTENDED USE AND ASSUME ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THEREWITH.

**multicomp**

UNLESS OTHERWISE  
STATED, DIMENSIONS  
ARE FOR REFERENCE  
PURPOSES ONLY.

|               |         |
|---------------|---------|
| DRAWN BY:     | DATE:   |
| JEFF MCVICKER | 7/23/97 |
| CHECKED BY:   | DATE:   |
| JOHN COLE     | 7/23/97 |
| APPROVED BY:  | DATE:   |
| BRETT BRAATZ  | 8/1/97  |

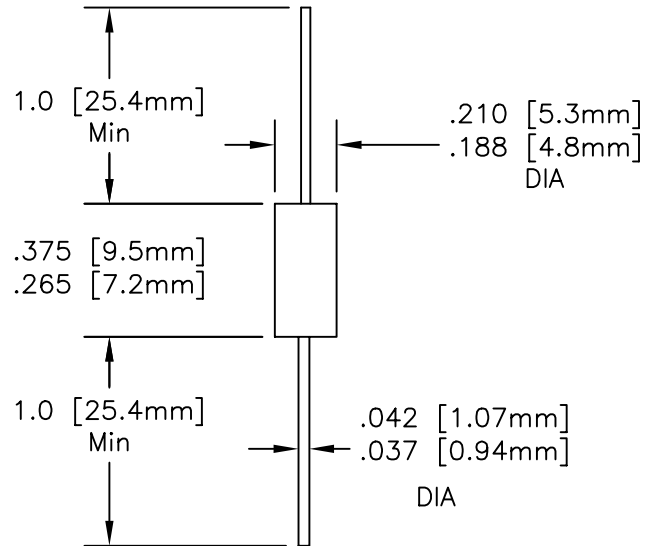
|                                                        |          |                     |               |
|--------------------------------------------------------|----------|---------------------|---------------|
| DRAWING TITLE:                                         |          |                     |               |
| GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR |          |                     |               |
| SIZE                                                   | DWG. NO. | ELECTRONIC FILE     | REV           |
| A                                                      | TA-91    | TA-91.DWG           | A             |
| SCALE: NTS                                             |          | U.O.M.: INCHES [mm] | SHEET: 1 OF 3 |

## FEATURES:

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated chip junction in Molded Plastic package
- 1500 W surge capability at 1 ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0 ps from 0 volts to BV min.
- Typical  $I_R$  less than 1 uA above 10V
- High temperature soldering guaranteed: 260°C/10 seconds/.375", [9.5mm] lead length/5lbs., [2.3kg] tension

## MECHANICAL DATA

- Case: JEDEC DO-201AE Molded plastic
- Terminals: Axial leads, solderable per MIL-STD-202, Method 208
- Polarity Color band denoted cathode except Bipolar
- Mounting Position: Any
- Weight: 0.045 ounce [1.2 grams]



## MAXIMUM RATINGS AND CHARACTERISTICS

| Rating (At 25° C ambient temperature unless otherwise specified)                                  | Symbol            | Value        | Units |
|---------------------------------------------------------------------------------------------------|-------------------|--------------|-------|
| Peak Power Dissipation at $T_A=25^{\circ}\text{C}$ , $T_P=1\text{ms}$ (NOTE 1)                    | $P_{PK}$          | Minimum 1500 | Watts |
| Steady State Power Dissipation at $T_L=75^{\circ}\text{C}$                                        | PD                | 5            | Watts |
| Lead Lengths .375", (9.5mm) (NOTE 2)                                                              |                   |              |       |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave                                           | $I_{FSM}$         | 200          | Amps  |
| Superimposed on Rated Load (JEDEC Method) (NOTE 3)                                                |                   |              |       |
| Operating and Storage Temperature Range                                                           | $T_J$ , $T_{STG}$ | -65 to +175  | °C    |
| NOTES:                                                                                            |                   |              |       |
| 1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig. 2 |                   |              |       |
| 2. Mounted on Copper Leaf Area of 0.79 in <sup>2</sup> (20mm <sup>2</sup> )                       |                   |              |       |
| 3. 8.3ms single half sine-wave, duty cycle=4 pulses per minutes maximum                           |                   |              |       |

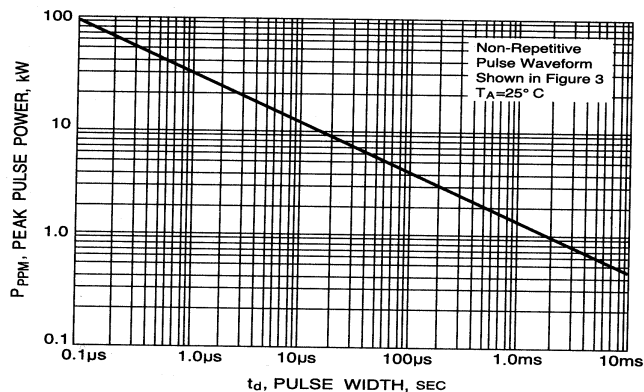


FIG.1-PEAK PULSE POWER RATING CURVE

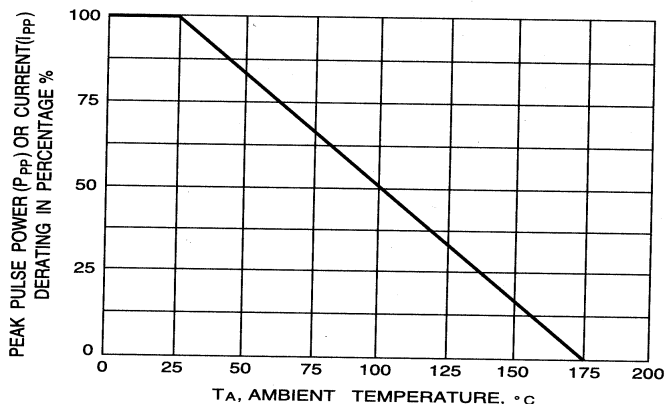


FIGURE 2-PULSE DERATING CURVE

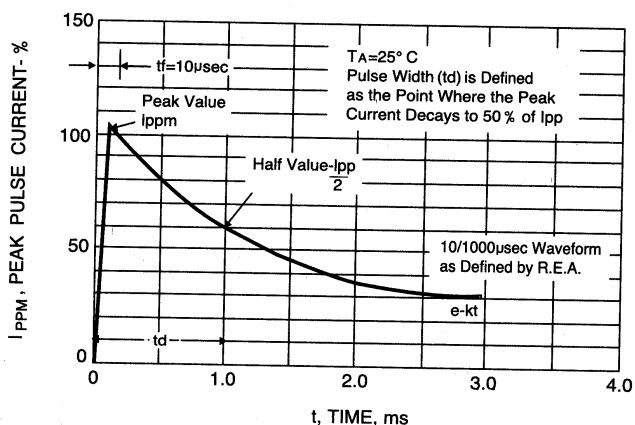


FIGURE 3-PULSE WAVEFORM

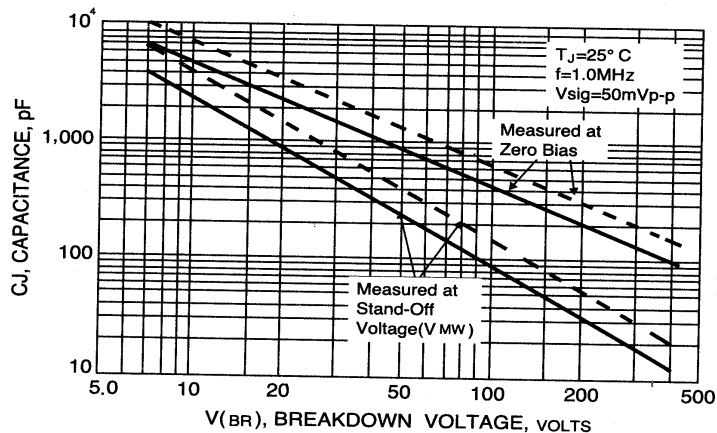


FIG.4-TYPICAL JUNCTION CAPACITANCE

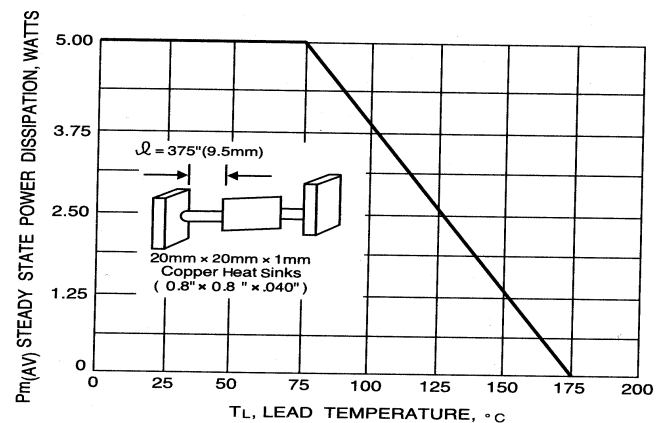


FIG. 5-STEADY STATE POWER DERATING CURVE

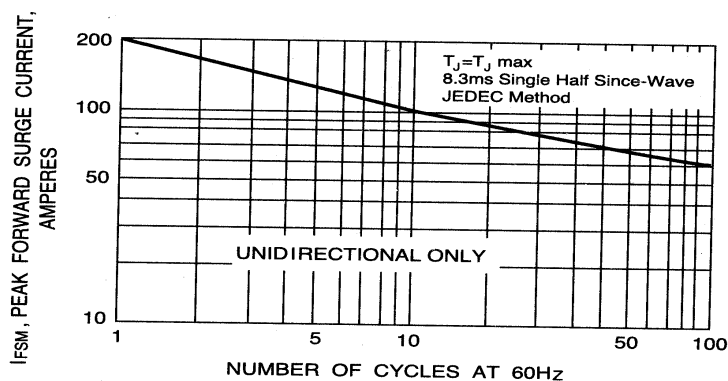


FIG.6-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL

|            |                     |                              |          |
|------------|---------------------|------------------------------|----------|
| SIZE<br>A  | DWG. NO.<br>TA-91   | ELECTRONIC FILE<br>TA-91.DWG | REV<br>A |
| SCALE: NTS | U.O.M.: INCHES [mm] | SHEET: 3 OF 3                |          |