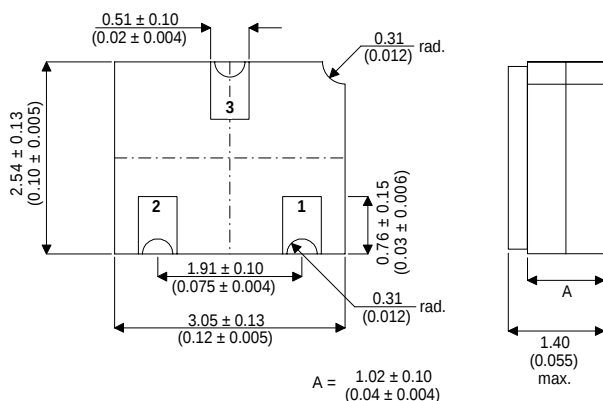


## MECHANICAL DATA

Dimensions in mm(inches)



### SOT23 CERAMIC (LCC1 PACKAGE)

#### Underside View

Pad 1 – Anode

Pad 2 – N/C

Pad 3 – Cathode

## VOLTAGE REGULATOR DIODE IN A CERAMIC SURFACE MOUNT PACKAGE FOR HI-REL APPLICATIONS

### FEATURES

- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- VOLTAGE RANGE 2.4 TO 100V

## ABSOLUTE MAXIMUM RATINGS

|                   |                                              |                         |                         |
|-------------------|----------------------------------------------|-------------------------|-------------------------|
| $P_{TOT}$         | Power Dissipation                            | $T_{AMB} = 25^{\circ}C$ | 500mW                   |
|                   | Derate above $25^{\circ}C$                   |                         | 4mW/ $^{\circ}C$        |
| $T_J$             | Maximum Junction Temperature                 |                         | -65 to +200 $^{\circ}C$ |
| $T_{STG}$         | Storage Temperature Range                    |                         | -65 to +200 $^{\circ}C$ |
| $T_{SOL}$         | Soldering Temperature                        | (5 seconds max.)        | 230 $^{\circ}C$         |
| $R_{\theta JA}$   | Thermal Resistance Junction to Ambient       |                         | 336 $^{\circ}C/W$       |
| $R_{\theta J-MB}$ | Thermal Resistance Junction to Mounting Base |                         | 140 $^{\circ}C/W$       |

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}C$ unless otherwise stated)

| Parameter                                                  | Test Conditions                              | Min.       | Typ.       | Max.       | Units    |
|------------------------------------------------------------|----------------------------------------------|------------|------------|------------|----------|
| $V_Z$ Zener Voltage                                        | For $V_Z$ nom. $\leq 24V$ , $I_Z = 5mA$      | $V_Z$ min. | $V_Z$ nom. | $V_Z$ max. | V        |
|                                                            | For $V_Z$ nom. $\geq 27V$ , $I_Z = 2mA$      |            |            |            |          |
| $I_R$ Reverse Current                                      | $V_R = V_R$ test                             |            |            | $I_R$ max. | $\mu A$  |
|                                                            | $V_R = V_R$ test $T_{AMB} = 150^{\circ}C$    |            |            | $I_R$ max  |          |
| $Z_Z$ Small Signal Breakdown Impedance                     | $I_Z = I_Z$ test                             |            |            | $Z_Z$ max. | $\Omega$ |
| $Z_Z$ Small Signal Breakdown Impedance near breakdown knee | For $V_Z$ nom. $\leq 24V$ , $I_{ZK} = 1mA$   |            |            | $Z_K$ max. | $\Omega$ |
|                                                            | For $V_Z$ nom. $\geq 27V$ , $I_{ZK} = 0.5mA$ |            |            |            |          |

See table 1 for type variants and test parameters.

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

**TABLE 1 – TYPE VARIANTS & TEST PARAMETERS**

| Product   | V <sub>Z</sub> nom.<br>(V) | V <sub>Z</sub> min.<br>(V) | V <sub>Z</sub> max.<br>(V) | I <sub>Z</sub> max.<br>(mA) | Z <sub>Z</sub> max.<br>(Ω) | V <sub>R</sub> test<br>(V) | I <sub>R</sub> max.<br>(μA)<br>(25°C) | R <sub>ZK</sub> max/I <sub>ZK</sub> max<br>(Ω) (mA) |
|-----------|----------------------------|----------------------------|----------------------------|-----------------------------|----------------------------|----------------------------|---------------------------------------|-----------------------------------------------------|
| BZX79C2V4 | 2.4                        | 2.2                        | 2.6                        | 155                         | 100                        | 1.0                        | 50                                    | 600 1.0                                             |
| BZX79C2V7 | 2.7                        | 2.5                        | 2.9                        | 135                         | 100                        | 1.0                        | 20                                    | 600 1.0                                             |
| BZX79C3V0 | 3.0                        | 2.8                        | 3.2                        | 125                         | 95                         | 1.0                        | 10                                    | 600 1.0                                             |
| BZX79C3V3 | 3.3                        | 3.1                        | 3.5                        | 115                         | 95                         | 1.0                        | 5.0                                   | 600 1.0                                             |
| BZX79C3V6 | 3.6                        | 3.4                        | 3.8                        | 105                         | 90                         | 1.0                        | 5.0                                   | 600 1.0                                             |
| BZX79C3V9 | 3.9                        | 3.7                        | 4.1                        | 95                          | 90                         | 1.0                        | 3.0                                   | 600 1.0                                             |
| BZX79C4V3 | 4.3                        | 4.0                        | 4.6                        | 90                          | 90                         | 1.0                        | 3.0                                   | 600 1.0                                             |
| BZX79C4V7 | 4.7                        | 4.4                        | 5.0                        | 85                          | 80                         | 2.0                        | 3.0                                   | 500 1.0                                             |
| BZX79C5V1 | 5.1                        | 4.8                        | 5.4                        | 80                          | 60                         | 2.0                        | 2.0                                   | 480 1.0                                             |
| BZX79C5V6 | 5.6                        | 5.2                        | 6.0                        | 70                          | 40                         | 2.0                        | 1.0                                   | 400 1.0                                             |
| BZX79C6V2 | 6.2                        | 5.8                        | 6.6                        | 64                          | 10                         | 4.0                        | 3.0                                   | 150 1.0                                             |
| BZX79C6V8 | 6.8                        | 6.4                        | 7.2                        | 58                          | 15                         | 4.0                        | 2.0                                   | 80 1.0                                              |
| BZX79C7V5 | 7.5                        | 7.0                        | 7.9                        | 53                          | 15                         | 5.0                        | 1.0                                   | 80 1.0                                              |
| BZX79C8V2 | 8.2                        | 7.7                        | 8.7                        | 47                          | 15                         | 5.0                        | 0.7                                   | 80 1.0                                              |
| BZX79C9V1 | 9.1                        | 8.5                        | 9.6                        | 43                          | 15                         | 6.0                        | 0.5                                   | 100 1.0                                             |
| BZX79C10  | 10                         | 9.4                        | 10.6                       | 40                          | 20                         | 7.0                        | 0.2                                   | 150 1.0                                             |
| BZX79C11  | 11                         | 10.4                       | 11.6                       | 36                          | 20                         | 8.0                        | 0.1                                   | 150 1.0                                             |
| BZX79C12  | 12                         | 11.4                       | 12.7                       | 32                          | 25                         | 8.0                        | 0.1                                   | 150 1.0                                             |
| BZX79C13  | 13                         | 12.4                       | 14.1                       | 29                          | 30                         | 8.0                        | 0.1                                   | 170 1.0                                             |
| BZX79C15  | 15                         | 13.8                       | 15.6                       | 27                          | 30                         | 10                         | 0.05                                  | 200 1.0                                             |
| BZX79C16  | 16                         | 15.3                       | 17.1                       | 24                          | 40                         | 11                         | 0.05                                  | 200 1.0                                             |
| BZX79C18  | 18                         | 16.8                       | 19.1                       | 21                          | 45                         | 13                         | 0.05                                  | 225 1.0                                             |
| BZX79C20  | 20                         | 18.8                       | 21.2                       | 20                          | 55                         | 14                         | 0.05                                  | 225 1.0                                             |
| BZX79C22  | 22                         | 20.8                       | 23.3                       | 18                          | 55                         | 15                         | 0.05                                  | 250 1.0                                             |
| BZX79C24  | 24                         | 22.8                       | 25.6                       | 16                          | 70                         | 17                         | 0.05                                  | 250 1.0                                             |
| BZX79C27  | 27                         | 25.1                       | 28.9                       | 14                          | 80                         | 19                         | 0.05                                  | 300 0.5                                             |
| BZX79C30  | 30                         | 28                         | 32                         | 13                          | 80                         | 21                         | 0.05                                  | 300 0.5                                             |
| BZX79C33  | 33                         | 31                         | 35                         | 12                          | 80                         | 23                         | 0.05                                  | 325 0.5                                             |
| BZX79C36  | 36                         | 34                         | 38                         | 11                          | 90                         | 25                         | 0.05                                  | 350 0.5                                             |
| BZX79C39  | 39                         | 37                         | 41                         | 10                          | 130                        | 27                         | 0.05                                  | 350 0.5                                             |
| BZX79C43  | 43                         | 40                         | 46                         | 9.2                         | 150                        | 29                         | 0.05                                  | 375 0.5                                             |
| BZX79C47  | 47                         | 44                         | 50                         | 8.5                         | 170                        | 33                         | 0.05                                  | 375 0.5                                             |
| BZX79C51  | 51                         | 48                         | 54                         | 7.8                         | 180                        | 36                         | 0.05                                  | 400 0.5                                             |
| BZX79C56  | 56                         | 52                         | 60                         | 7.0                         | 200                        | 39                         | 0.05                                  | 425 0.5                                             |
| BZX79C62  | 62                         | 58                         | 66                         | 6.4                         | 215                        | 43                         | 0.05                                  | 450 0.5                                             |
| BZX79C68  | 68                         | 64                         | 72                         | 5.9                         | 240                        | 48                         | 0.05                                  | 475 0.5                                             |
| BZX79C75  | 75                         | 70                         | 79                         | 5.3                         | 255                        | 52                         | 0.05                                  | 500 0.5                                             |
| BZX79C82  | 82                         | 77                         | 87                         | 4.9                         | 280                        | 62                         | 0.05                                  | 525 0.5                                             |
| BZX79C91  | 91                         | 85                         | 96                         | 4.4                         | 300                        | 69                         | 0.05                                  | 550 0.5                                             |
| BZX79C100 | 100                        | 94                         | 106                        | 4.0                         | 500                        | 76                         | 0.05                                  | 600 0.5                                             |

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.