



**CHENMKO ENTERPRISE CO.,LTD**

**SURFACE MOUNT ZENER**

**SILICON PLANAR POWER ZENER DIODES  
VOLTAGE RANGE 3.3V TO 100V**

**CHAZ4728BGP**

**THRU**

**CHAZ4764BGP**

*Halogens free devices*

**FEATURE**

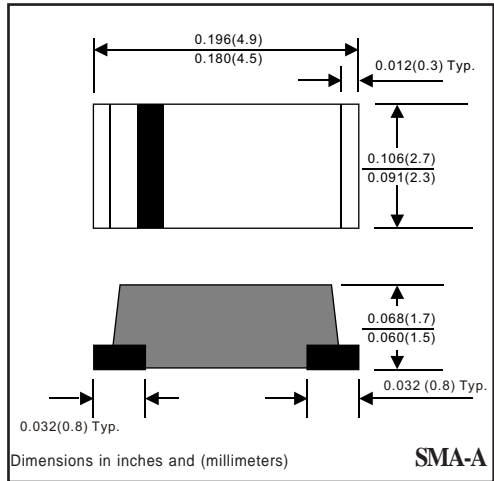
- \* High temperature soldering type.
- \* ESD rating of class 3(>16 kV) per human body model.
- \* Silicon planar zener diodes.
- \* For surface mounted applications.
- \* Low Zener impedance.
- \* Low regulation factor

**MECHANICAL**

- \* SMA Packaging.
- \* Cathode indicated by polarity band.
- \* Mounting position: Any.



**SMA-A**



**CIRCUIT**



**MAXIMUM RATINGS** ( At  $T_A = 25^{\circ}\text{C}$  unless otherwise noted )

| RATINGS  | SYMBOL    | VALUE       | UNITS              |
|--|-----------|-------------|--------------------|
| Zener Current ( see Table "Characteristics" )                  | -         | -           | -                  |
| Max. Steady State Power Dissipation @ $T_A=25^{\circ}\text{C}$ | $P_D$     | 1000        | mW                 |
| Max. Operating Temperature Range                               | $T_J$     | +150        | $^{\circ}\text{C}$ |
| Storage Temperature Range                                      | $T_{STG}$ | -65 to +150 | $^{\circ}\text{C}$ |

**ELECTRICAL CHARACTERISTICS** ( At  $T_A = 25^{\circ}\text{C}$  unless otherwise noted )

| CHARACTERISTICS   | SYMBOL          | MIN. | TYP. | MAX. | UNITS                |
|---|-----------------|------|------|------|----------------------|
| Thermal Resistance Junction to Ambient                    | $R_{\theta JA}$ | -    | -    | 390  | $^{\circ}\text{C/W}$ |
| Max. Instantaneous Forward Voltage at $I_F = 10\text{mA}$ | $V_F$           | -    | -    | 1.0  | Volts                |

- NOTES :
1. The JEDEC type numbers listed have a standard tolerance on the normal zener voltage of  $\pm 10\%$ , Suffix B= $\pm 5\%$ , Suffix S= $\pm 2\%$ .
  2. The zener impedance is derived from 1KHz AC voltage, which results when an AC current having an RMS value equal to 10% of DC zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve to eliminate unstable units.
  3. Valid provided that electrodes at distance of 10mm from case are kept ambient temperature.
  4. Measured under thermal equilibrium and DC test conditions.

2004-9

## ELECTRICAL CHARACTERISTICS ( CHAZ4728BGP THRU CHAZ4764BGP )

| TYPE        | Zener voltage<br>V <sub>Z</sub> (V) @ I <sub>ZT</sub> |       |        | Test<br>current      | Maximum Zener impedance                      |                        |                               | Maximum<br>reverse leakage current |                          | Maximum<br>surge<br>current |
|-------------|---|-------|--------|----------------------|--|------------------------|-------------------------------|------------------------------------|--------------------------|-----------------------------|
|             | Min   | Nom   | Max    |                      | Z <sub>ZT</sub><br>at I <sub>ZT</sub><br>(Ω) | Z <sub>ZK</sub><br>(Ω) | at<br>I <sub>ZK</sub><br>(mA) | I <sub>R</sub><br>(μA)             | at V <sub>R</sub><br>(V) |                             |
|             | Volts   | Volts | Volts  | I <sub>ZT</sub> (mA) |  |                        |                               |                                    |                          | I <sub>RM</sub><br>(mApk)   |
| CHAZ4728BGP | 3.135   | 3.3   | 3.465  | 76                   | 10   | 400                    | 1.0                           | 100                                | 1                        | 1380                        |
| CHAZ4729BGP | 3.420   | 3.6   | 3.780  | 69                   | 10   | 400                    | 1.0                           | 100                                | 1                        | 1260                        |
| CHAZ4730BGP | 3.705   | 3.9   | 4.095  | 64                   | 9  | 400                    | 1.0                           | 50                                 | 1                        | 1190                        |
| CHAZ4731BGP | 4.085   | 4.3   | 4.515  | 58                   | 9  | 400                    | 1.0                           | 10                                 | 1                        | 1070                        |
| CHAZ4732BGP | 4.465   | 4.7   | 4.935  | 53                   | 8  | 500                    | 1.0                           | 10                                 | 1                        | 970                         |
| CHAZ4733BGP | 4.845   | 5.1   | 5.355  | 49                   | 7  | 550                    | 1.0                           | 10                                 | 1                        | 890                         |
| CHAZ4734BGP | 5.320   | 5.6   | 5.880  | 45                   | 5  | 600                    | 1.0                           | 10                                 | 2                        | 810                         |
| CHAZ4735BGP | 5.890   | 6.2   | 6.510  | 41                   | 2  | 700                    | 1.0                           | 10                                 | 3                        | 730                         |
| CHAZ4736BGP | 6.460   | 6.8   | 7.140  | 37                   | 3.5  | 700                    | 1.0                           | 10                                 | 4                        | 660                         |
| CHAZ4737BGP | 7.125   | 7.5   | 7.875  | 34                   | 4  | 700                    | 0.5                           | 10                                 | 5                        | 605                         |
| CHAZ4738BGP | 7.790   | 8.2   | 8.610  | 31                   | 4.5  | 700                    | 0.5                           | 10                                 | 6                        | 550                         |
| CHAZ4739BGP | 8.645   | 9.1   | 9.555  | 28                   | 5  | 700                    | 0.5                           | 10                                 | 7                        | 500                         |
| CHAZ4740BGP | 9.500   | 10    | 10.50  | 25                   | 7  | 700                    | 0.25                          | 10                                 | 7.6                      | 454                         |
| CHAZ4741BGP | 10.45   | 11    | 11.55  | 23                   | 8  | 700                    | 0.25                          | 5                                  | 8.4                      | 414                         |
| CHAZ4742BGP | 11.40   | 12    | 12.60  | 21                   | 9  | 700                    | 0.25                          | 5                                  | 9.1                      | 380                         |
| CHAZ4743BGP | 12.35   | 13    | 13.65  | 19                   | 10   | 700                    | 0.25                          | 5                                  | 9.9                      | 344                         |
| CHAZ4744BGP | 14.25   | 15    | 15.75  | 17                   | 14   | 700                    | 0.25                          | 5                                  | 11.4                     | 305                         |
| CHAZ4745BGP | 15.20   | 16    | 16.80  | 15.5                 | 16   | 700                    | 0.25                          | 5                                  | 12.2                     | 285                         |
| CHAZ4746BGP | 17.10   | 18    | 18.90  | 14                   | 20   | 750                    | 0.25                          | 5                                  | 13.7                     | 250                         |
| CHAZ4747BGP | 19.00   | 20    | 21.00  | 12.5                 | 22   | 750                    | 0.25                          | 5                                  | 15.2                     | 225                         |
| CHAZ4748BGP | 20.90   | 22    | 23.10  | 11.5                 | 23   | 750                    | 0.25                          | 5                                  | 16.7                     | 205                         |
| CHAZ4749BGP | 22.80   | 24    | 25.20  | 10.5                 | 25   | 750                    | 0.25                          | 5                                  | 18.2                     | 190                         |
| CHAZ4750BGP | 25.65   | 27    | 28.35  | 9.5                  | 35   | 750                    | 0.25                          | 5                                  | 20.6                     | 170                         |
| CHAZ4751BGP | 28.50   | 30    | 31.50  | 8.5                  | 40   | 1000                   | 0.25                          | 5                                  | 22.8                     | 150                         |
| CHAZ4752BGP | 31.35   | 33    | 34.65  | 7.5                  | 45   | 1000                   | 0.25                          | 5                                  | 25.1                     | 135                         |
| CHAZ4753BGP | 34.20   | 36    | 37.80  | 7.0                  | 50   | 1000                   | 0.25                          | 5                                  | 27.4                     | 125                         |
| CHAZ4754BGP | 37.05   | 39    | 40.95  | 6.5                  | 60   | 1000                   | 0.25                          | 5                                  | 29.7                     | 115                         |
| CHAZ4755BGP | 40.85   | 43    | 45.15  | 6.0                  | 70   | 1500                   | 0.25                          | 5                                  | 32.7                     | 110                         |
| CHAZ4756BGP | 44.65   | 47    | 49.35  | 5.5                  | 80   | 1500                   | 0.25                          | 5                                  | 35.8                     | 95                          |
| CHAZ4757BGP | 48.45   | 51    | 53.35  | 5.0                  | 95   | 1500                   | 0.25                          | 5                                  | 38.8                     | 90                          |
| CHAZ4758BGP | 53.20   | 56    | 58.80  | 4.5                  | 110  | 2000                   | 0.25                          | 5                                  | 42.6                     | 80                          |
| CHAZ4759BGP | 58.90   | 62    | 65.10  | 4.0                  | 125  | 2000                   | 0.25                          | 5                                  | 47.1                     | 70                          |
| CHAZ4760BGP | 64.60   | 68    | 71.40  | 3.7                  | 150  | 2000                   | 0.25                          | 5                                  | 51.7                     | 65                          |
| CHAZ4761BGP | 71.25   | 75    | 78.75  | 3.3                  | 175  | 2000                   | 0.25                          | 5                                  | 56                       | 60                          |
| CHAZ4762BGP | 77.90   | 82    | 86.10  | 3.0                  | 200  | 3000                   | 0.25                          | 5                                  | 62.2                     | 55                          |
| CHAZ4763BGP | 86.45   | 91    | 95.55  | 2.8                  | 250  | 3000                   | 0.25                          | 5                                  | 69.2                     | 50                          |
| CHAZ4764BGP | 95.00   | 100   | 105.00 | 2.5                  | 350  | 3000                   | 0.25                          | 5                                  | 76                       | 45                          |

# RATING CHARACTERISTIC CURVES ( CHAZ4728BGP THRU CHAZ4764BGP )

FIG. 1 - TYPICAL TEMPERATURE COEFFICIENTS)

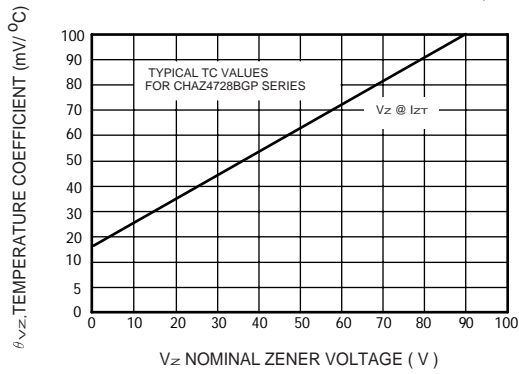


FIG. 2 - TYPICAL LEAKAGE CURRENT

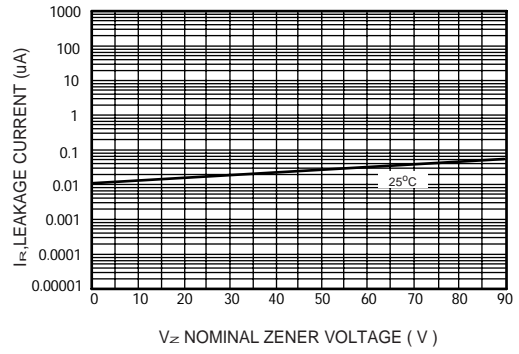


FIG. 3 - ZENER VOLTAGE VERSUS ZENER CURRENT

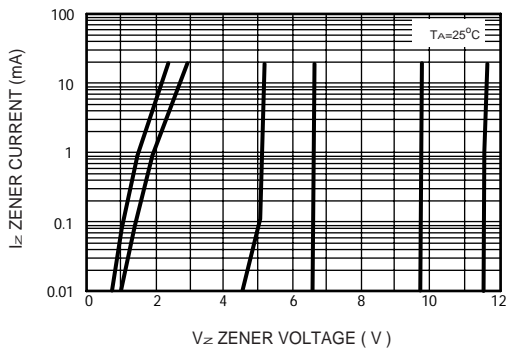


FIG. 4 - ZENER VOLTAGE VERSUS ZENER CURRENT

