# BZT52C2V4 THRU BZT52C75

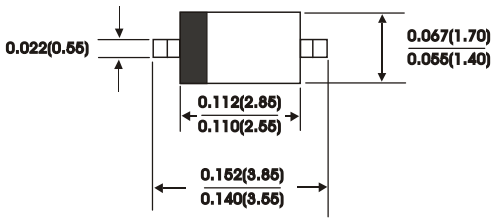
## SURFAC MOUNT ZENER DIODES

## SOD-123

## FEATURES:

- Silicon planar power zener diodies
- Standard Zener voltage tolerance is ± 5% AND

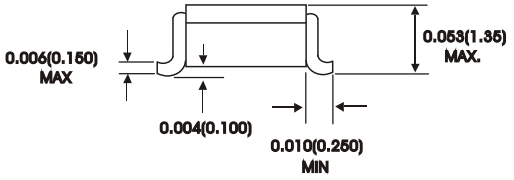
  SUFFIX "ZMM55C" FOR ±5% of $V_{ZNOM}$




## MECHANICAL DATA

Case: SOD-123 Molded plastic

Weigh: 0.01grams(approx)




Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25℃ ambient temp. unless otherwise specified.

| Characteristic | Symbol | Value | Units |
|---|---|---|---|
| Power Dissipation at Tamb=25℃ | Ptot | 0.41(1) | W |
| Z-current | Iz | See Table"Characteristic) | mA |
| Tremal Resistance Junction to Ambient Air | RthJ-A | 300(2) | K/W |
| Junction temperature | $T_J$ | 150 | ℃ |
| Storage temperature range | Tstg | -65 to+150 | ℃ |

NOTE:

(1) Diode on ceramic substrate 0.7mm; 2.5$mm^2$ area

(2) Valid provided that electrodes are kept at ambient temperature

## SURFACE MOUNT ZENER DIODES BZT52C2V4 THRU BZT52C75

| Device Type | Nominal Zener Voltage $V_{ZNOM}$ | Nominal Zener Voltage $V_z$ [1] at Izt | Test Current $I_{ZT}$ (3) | Maximum Zener Impedance | | | Reverse Voltage at IR=0.1uA | Admissable Zerer Current (2) | | Temp. Coeff. Of Zener current at Iz=5mA $Vz10^{-4}$ /K |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Rzj at IzT f=1KHZ | Rzj at IzK F=1KHZ | IzK | | At Tamb=45℃ Iz | At Tamb=25℃ Iz | |
| | Volts | Volts | mA | Ω | Ω | mA | Volts | mA | mA | |
| BZT52C2V4 | 2.4 | 2.28-2.56 | 5 | 85 | 600 | 1.0 | - | - | - | TYP.-1.8 |
| BZT52C2V7 | 2.7 | 2.5-2.9 | 5 | 75(<83) | <500 | 1.0 | - | 113 | 134 | -9~-4 |
| BZT52C3V0 | 3.0 | 2.8-3.2 | 5 | 80(<95) | <500 | 1.0 | - | 98 | 118 | -9~-3 |
| BZT52C3V3 | 3.3 | 3.1-3.5 | 5 | 80(<95) | <500 | 1.0 | - | 92 | 109 | -8~-3 |
| BZT52C3V6 | 3.6 | 3.4-3.8 | 5 | 80(<95) | <500 | 1.0 | - | 85 | 100 | -8~-3 |
| BZT52C3V9 | 3.9 | 3.7-4.1 | 5 | 80(<95) | <500 | 1.0 | - | 77 | 92 | -7~-3 |
| BZT52C4V3 | 4.3 | 4.0-4.6 | 5 | 80(<95) | <500 | 1.0 | - | 71 | 84 | -6~-1 |
| BZT52C4V7 | 4.7 | 4.4-5.0 | 5 | 70(<78) | <500 | 1.0 | - | 64 | 76 | -5~+2 |
| BZT52C5V1 | 5.1 | 4.8-5.4 | 5 | 30(<60) | <480 | 1.0 | >0.8 | 56 | 67 | -3~+4 |
| BZT52C5V6 | 5.6 | 5.2-6.0 | 5 | 10(<40) | <400 | 1.0 | >1 | 50 | 59 | -2~+6 |
| BZT52C6V2 | 6.2 | 5.8-6.6 | 5 | 4.8(<10) | <200 | 1.0 | >2 | 45 | 54 | -1~+7 |
| BZT52C6V8 | 6.8 | 6.4-7.2 | 5 | 4.5(<8) | <150 | 1.0 | >3 | 41 | 49 | +2~+7 |
| BZT52C7V5 | 7.5 | 7.0-7.9 | 5 | 4(<7) | <50 | 1.0 | >5 | 37 | 44 | +3~+7 |
| BZT52C8V2 | 8.2 | 7.7-8.7 | 5 | 4.5(<7) | <50 | 1.0 | >6 | 34 | 40 | +4~+7 |
| BZT52C9V1 | 9.1 | 8.5-9.6 | 5 | 4.8(<10) | <50 | 1.0 | >7 | 30 | 36 | +5~+8 |
| BZT55C10 | 10 | 9.4-10.6 | 5 | 5.2(<15) | <70 | 1.0 | >7.5 | 28 | 33 | +5~+8 |
| BZT52C11 | 11 | 10.4-11.6 | 5 | 6(<20) | <70 | 1.0 | >8.5 | 25 | 30 | +5~+9 |
| BZT52C12 | 12 | 11.4-12.7 | 5 | 7(<20) | <90 | 1.0 | >9 | 23 | 28 | +6~+9 |
| BZT52C13 | 13 | 12.4-14.1 | 5 | 9(<25) | <110 | 1.0 | >10 | 21 | 25 | +7~+9 |
| BZT52C15 | 15 | 13.8-15.6 | 5 | 11(<30) | <110 | 1.0 | >11 | 19 | 23 | +7~+9 |
| BZT52C16 | 16 | 15.3-17.1 | 5 | 13(<40) | <170 | 1.0 | >12 | 17 | 20 | +8~+9.5 |
| BZT52C18 | 18 | 16.8-19.1 | 5 | 18(<50) | <170 | 1.0 | >14 | 15 | 18 | +8~+9.5 |
| BZT52C20 | 20 | 18.8-21.2 | 5 | 20(<50) | <220 | 1.0 | >15 | 14 | 17 | +8~+10 |
| BZT52C22 | 22 | 20.8-23.3 | 5 | 25(<55) | <220 | 1.0 | >17 | 13 | 16 | +8~+10 |
| BZT52C24 | 24 | 22.8-25.6 | 5 | 28(<80) | <220 | 1.0 | >18 | 11 | 13 | +8~+10 |
| BZT52C27 | 27 | 25.1-28.9 | 5 | 30(<80) | <250 | 1.0 | >20 | 10 | 12 | +8~+10 |
| BZT52C30 | 30 | 28-32 | 5 | 35(<80) | <250 | 1.0 | >22.5 | 9 | 10 | +8~+10 |
| BZT52C33 | 33 | 31-35 | 5 | 40(<80) | <250 | 1.0 | >25 | 8 | 9 | +8~+10 |
| BZT52C36 | 36 | 34-38 | 5 | 40(<90) | <250 | 1.0 | >27 | 8 | 9 | +8~+10 |
| BZT52C39 | 39 | 37-41 | 5 | 50(<90) | <300 | 1.0 | >29 | 7 | 8 | +10~+12 |
| BZT52C43 | 43 | 40-46 | 5 | 60(<100) | <700 | 1.0 | >32 | 6 | 7 | +10~+12 |
| BZT52C47 | 47 | 44-50 | 5 | 70(<100) | <750 | 1.0 | >35 | 5 | 6 | +10~+12 |
| BZT52C51 | 51 | 48-54 | 5 | 70(<100) | <750 | 1.0 | >38 | 5 | 6 | +10~+12 |
| BZT52C56 | 56 | 52-60 | 2.5 | <135 | <1000 | 0.5 | - | - | - | Type.+10 (4) |
| BZT52C62 | 62 | 58-66 | 2.5 | <150 | <1000 | 0.5 | - | - | - | Type.+10 (4) |
| BZT52C68 | 68 | 64-72 | 2.5 | <200 | <1000 | 0.5 | - | - | - | Type.+10 (4) |
| BZT52C75 | 75 | 70-79 | 2.5 | <250 | <1500 | 0.5 | - | - | - | Type.+10 (4) |

(1)Tighter tolerances available request :
BZT52C---- ± 5% of $V_{ZNOM}$
(2)Vaild provild that electrodes are kept at ambient temperature
(3)Tested pulses tp=5ms
(4)at Iz=2.5mA

FIGURE.1-MAXIMUM ADMISSIBLE POWER DISSIPATION CHARACTERISTICS

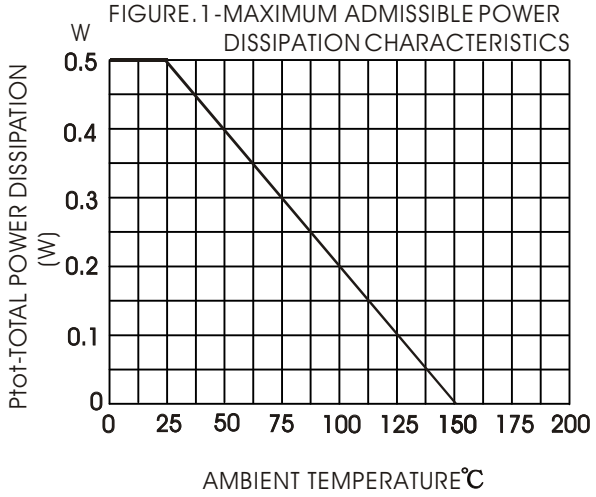



FIGURE.6-FORWARD CURRENT CHARACTERISTICS

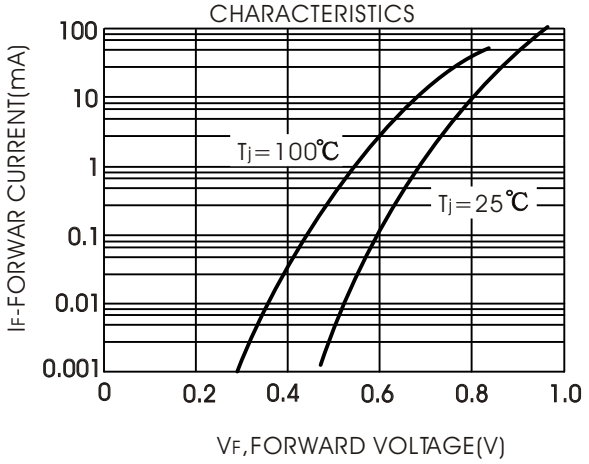



FIGURE.3-BREAKDOWN CHARACTERISTICS

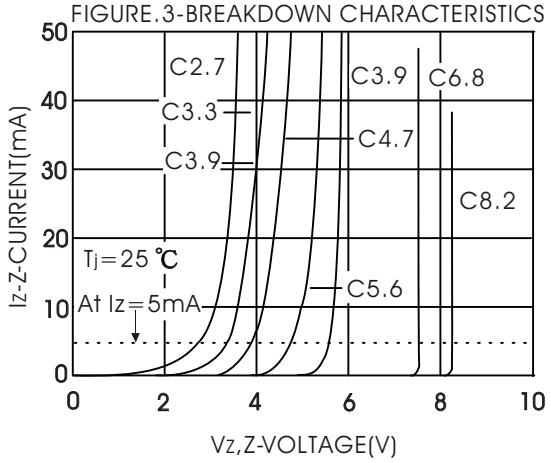



FIGURE.4-BREAKDOWN CHARACTERISTICS

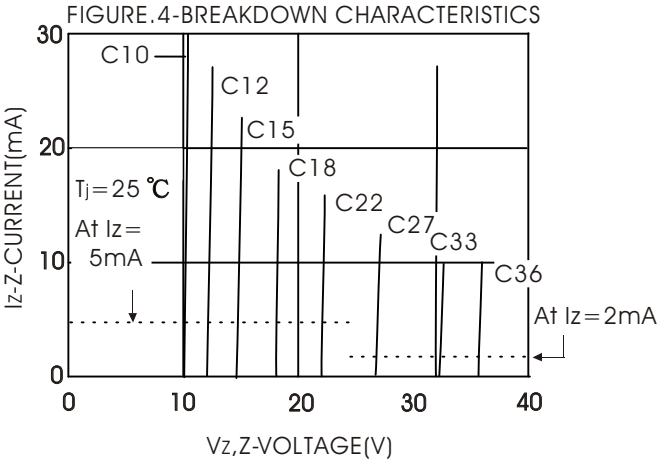



FIGURE.5-BREAKDOWN CHARACTERISTICS

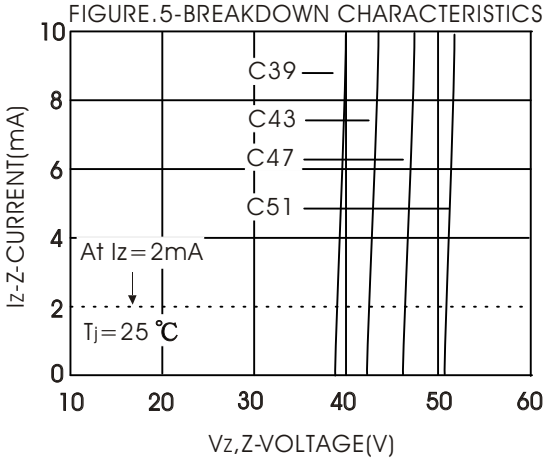



FIGURE.6-THERMAL RESISTANCE CHARACTERISTICS

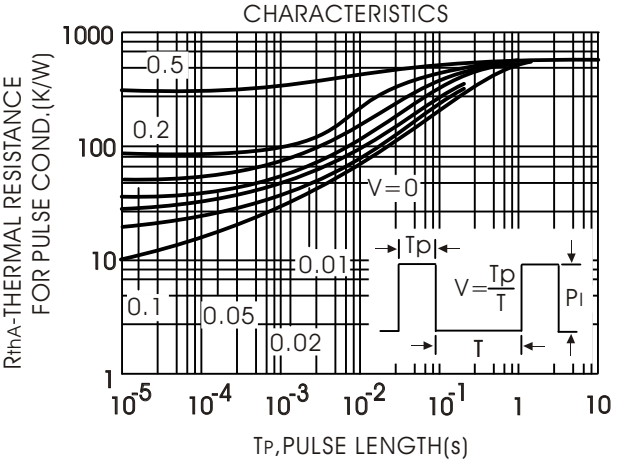


FIGURE.7-DYNAMIC RESISTANCE

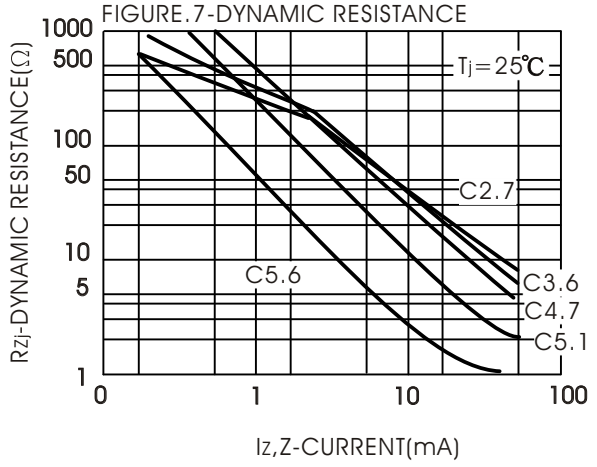



FIGURE.8-DYNAMIC RESISTANCE

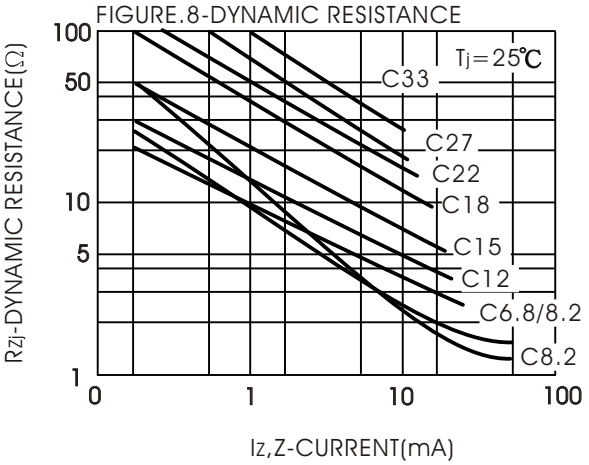



FIGURE.9-DYNAMIC RESISTANCE

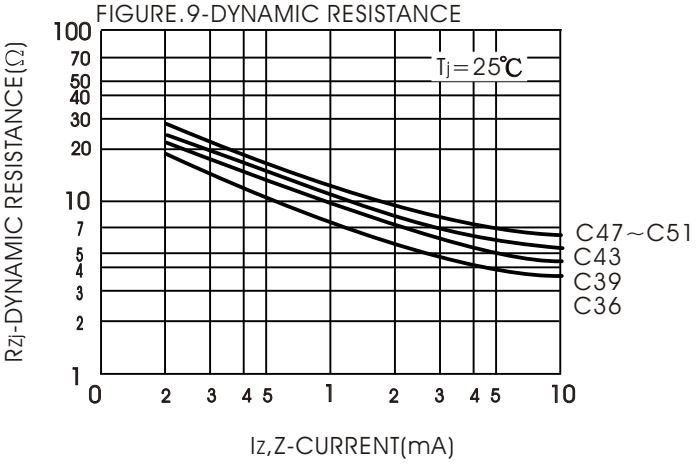



FIGURE.10-CAPACITANCE

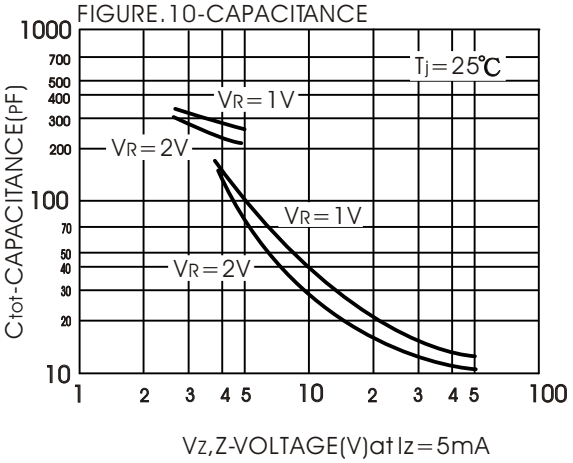



FIGURE.11-THERMAL DIFFERENTIAL RESISTANCE

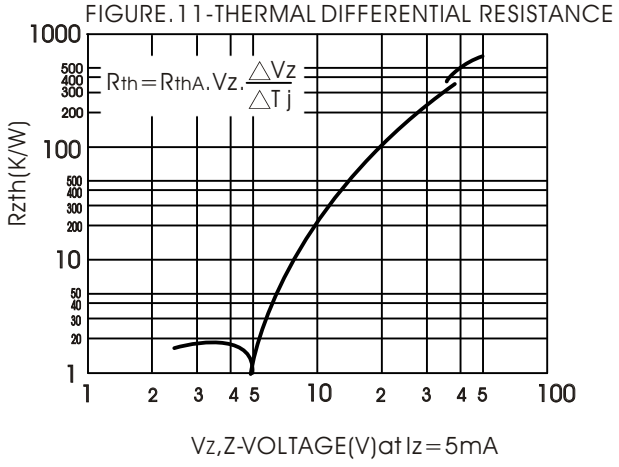



FIGURE.12-DYNAMIC RESISTANCE

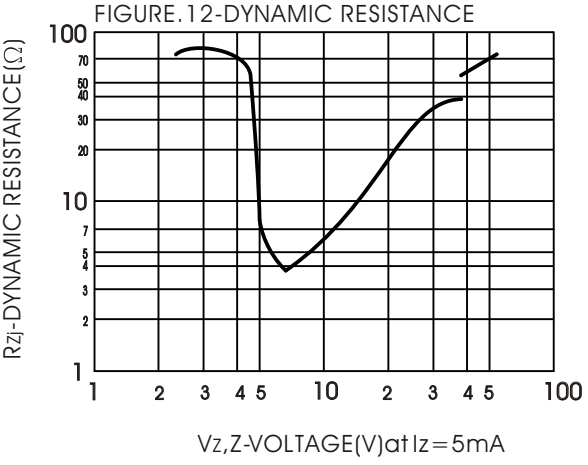
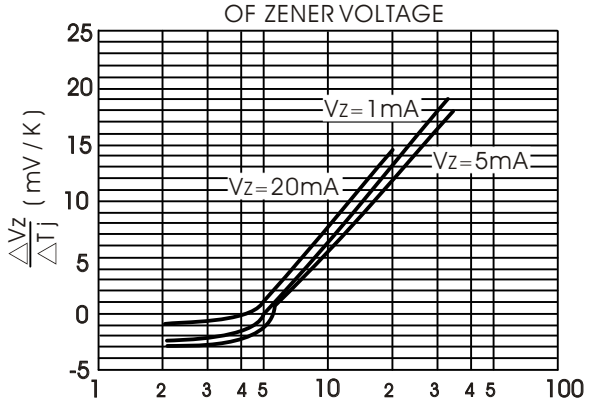
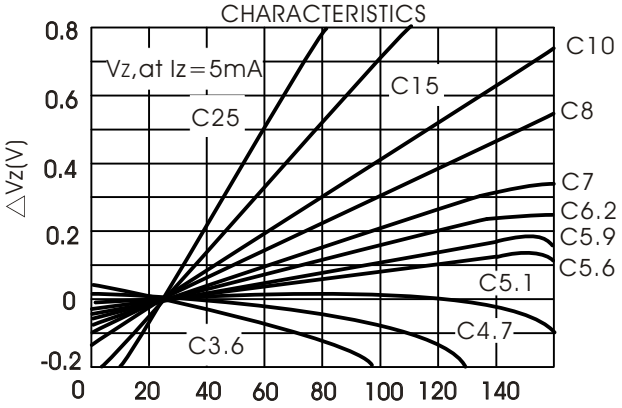


FIGURE.13-TERMPERATURE DEPENDENCE OF ZENER VOLTAGE



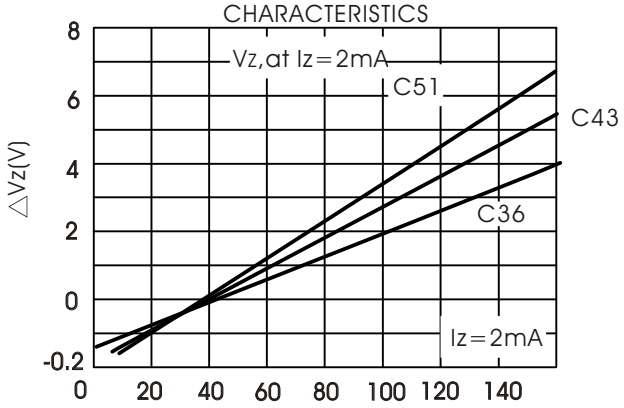

Vz,Z-VOLTAGE(V)at Iz=5mA
Vz≧27v;Iz=2mA

FIGURE.14-CHANGE OF ZENER VOLTAGE CHARACTERISTICS



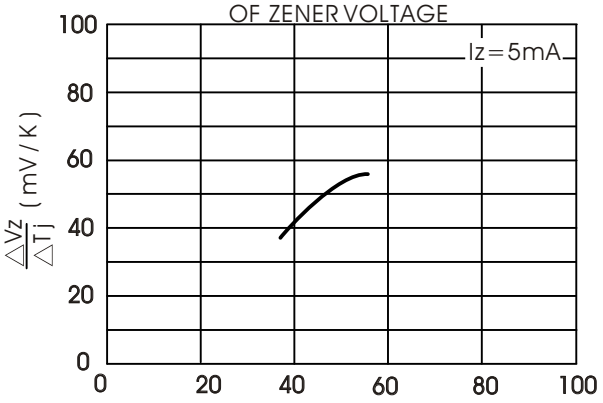

JUNCTION TEMPERATURE℃

FIGURE.15-CHANGE OF ZENER VOLTAGE CHARACTERISTICS



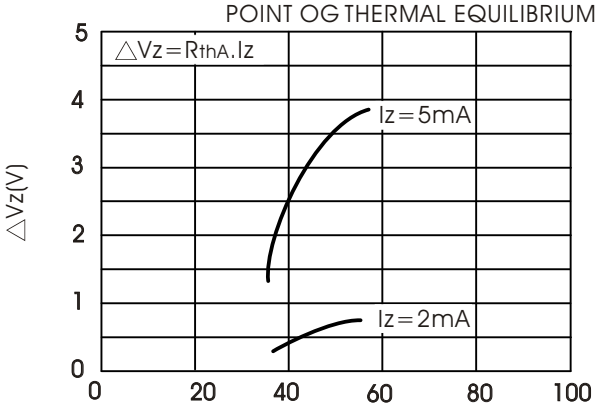

JUNCTION TEMPERATURE℃

FIGURE.16-TERMPERATURE DEPENDENCE OF ZENER VOLTAGE



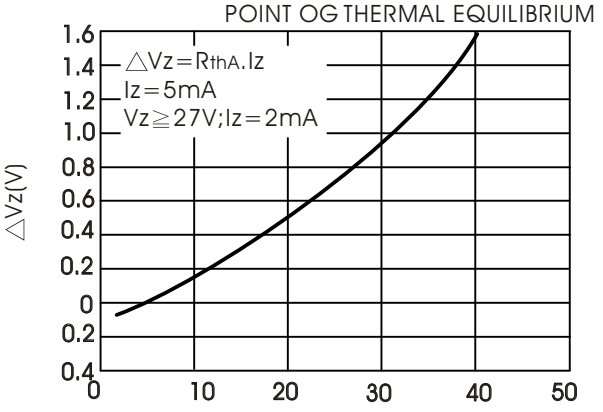

Vz,Z-VOLTAGE(V)at Iz=2mA

FIGURE.15-CHANGE OF ZENER VOLTAGE FROM TURN-ON UP TO THE POINT OG THERMAL EQUILIBRIUM




Vz,Z-VOLTAGE(V)at Iz=5mA

FIGURE.15-CHANGE OF ZENER VOLTAGE FROM TURN-ON UP TO THE POINT OG THERMAL EQUILIBRIUM




Vz,Z-VOLTAGE(V)at Iz=5mA