# Zener Diode

**YFZVFH series** Datasheet

**AEC-Q101 Qualified**

## ●Application

Voltage regulation

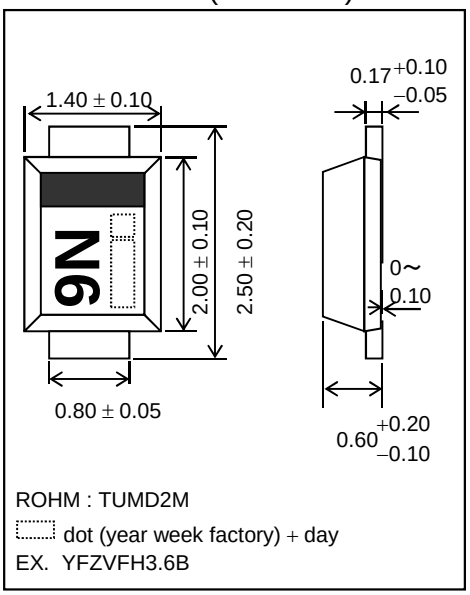
## ●Features

1) Small power mold type (TUMD2M)
2) High reliability
3) By chip-mouter, automatic mouting is possible.

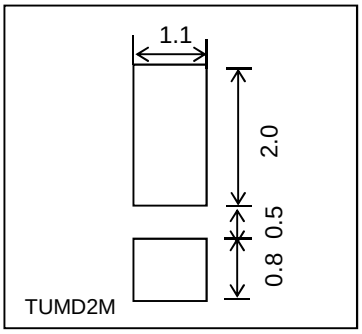
## ●Construction

Silicon epitaxial planar

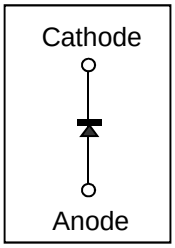
## ●Dimensions (Unit : mm)



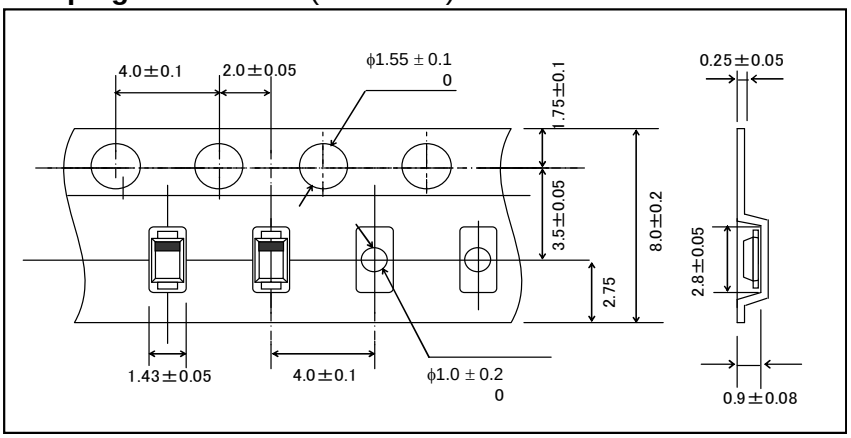

## ●Land size figure (Unit : mm)




## ●Structure




## ●Taping dimensions (Unit : mm)




## ●Absolute maximum ratings ($T_a$ = 25°C)

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Power dissipation (∗) | P | 500 | mW |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | −55 to +150 | °C |
| Operating temperature | $T_{opr}$ | −55 to +150 | °C |

(∗) Device mounted on glass-epoxy board(50×50mm, t=1.6mm) Solder land (10×10mm)

## ●Electrical characteristics ($T_a$= 25°C)

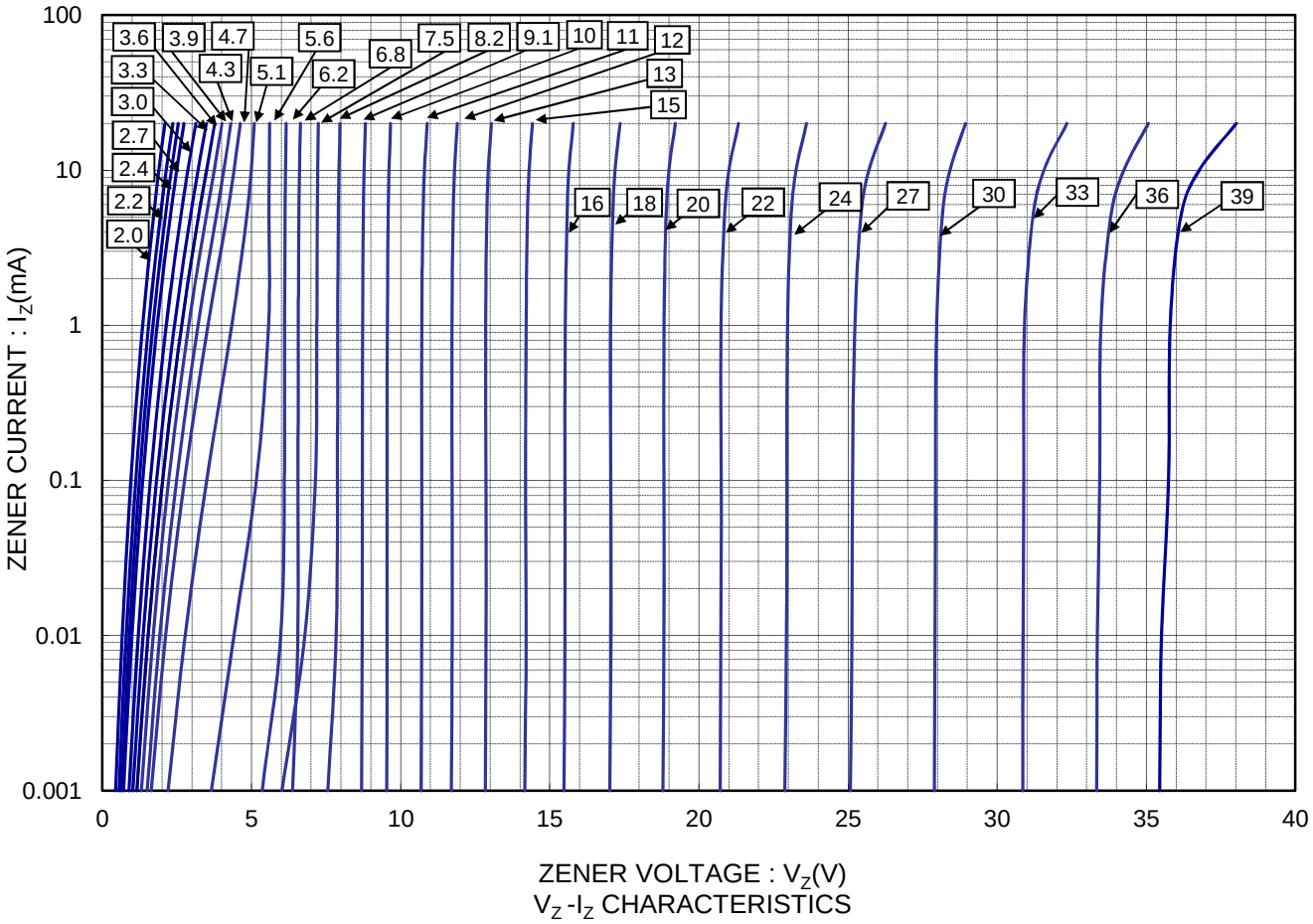
| TYP. | Symbol | | | | | | |
|---|---|---|---|---|---|---|---|
| | Zener voltage : $V_Z$(V) | | | Dynamic Impedance : $Z_Z$(Ω) | | Reverse current : $I_R$(μA) | |
| | MIN. | MAX. | $I_Z$(mA) | MAX. | $I_Z$(mA) | MAX. | $V_R$(V) |
| YFZV 2.0B | 2.020 | 2.200 | 20 | 140 | 20 | 120 | 0.5 |
| YFZV 2.2B | 2.220 | 2.410 | 20 | 120 | 20 | 120 | 0.7 |
| YFZV 2.4B | 2.430 | 2.630 | 20 | 100 | 20 | 120 | 1.0 |
| YFZV 2.7B | 2.690 | 2.910 | 20 | 100 | 20 | 100 | 1.0 |
| YFZV 3.0B | 3.010 | 3.220 | 20 | 80 | 20 | 50 | 1.0 |
| YFZV 3.3B | 3.320 | 3.530 | 20 | 70 | 20 | 20 | 1.0 |
| YFZV 3.6B | 3.600 | 3.845 | 20 | 60 | 20 | 10 | 1.0 |
| YFZV 3.9B | 3.890 | 4.160 | 20 | 50 | 20 | 5 | 1.0 |
| YFZV 4.3B | 4.170 | 4.430 | 20 | 40 | 20 | 5 | 1.0 |
| YFZV 4.7B | 4.550 | 4.800 | 20 | 25 | 20 | 5 | 1.0 |
| YFZV 5.1B | 4.940 | 5.200 | 20 | 20 | 20 | 5 | 1.5 |
| YFZV 5.6B | 5.450 | 5.730 | 20 | 13 | 20 | 5 | 2.5 |
| YFZV 6.2B | 5.960 | 6.270 | 20 | 10 | 20 | 5 | 3.0 |
| YFZV 6.8B | 6.490 | 6.830 | 20 | 8 | 20 | 2 | 3.5 |
| YFZV 7.5B | 7.070 | 7.450 | 20 | 8 | 20 | 0.5 | 4.0 |
| YFZV 8.2B | 7.780 | 8.190 | 20 | 8 | 20 | 0.5 | 5.0 |
| YFZV 9.1B | 8.570 | 9.010 | 20 | 8 | 20 | 0.5 | 6.0 |
| YFZV 10B | 9.410 | 9.900 | 20 | 8 | 20 | 0.2 | 7.0 |
| YFZV 11B | 10.500 | 11.050 | 10 | 10 | 10 | 0.2 | 8.0 |
| YFZV 12B | 11.440 | 12.030 | 10 | 12 | 10 | 0.2 | 9.0 |
| YFZV 13B | 12.550 | 13.210 | 10 | 14 | 10 | 0.2 | 10 |
| YFZV 15B | 13.890 | 14.620 | 10 | 16 | 10 | 0.2 | 11 |
| YFZV 16B | 15.250 | 16.040 | 10 | 18 | 10 | 0.2 | 12 |
| YFZV 18B | 16.820 | 17.700 | 10 | 23 | 10 | 0.2 | 13 |
| YFZV 20B | 18.630 | 19.590 | 10 | 28 | 10 | 0.2 | 15 |
| YFZV 22B | 20.640 | 21.710 | 5 | 30 | 5 | 0.2 | 17 |
| YFZV 24B | 22.610 | 23.770 | 5 | 35 | 5 | 0.2 | 19 |
| YFZV 27B | 24.970 | 26.260 | 5 | 45 | 5 | 0.2 | 21 |
| YFZV 30B | 27.700 | 29.130 | 5 | 55 | 5 | 0.2 | 23 |
| YFZV 33B | 30.320 | 31.880 | 5 | 65 | 5 | 0.2 | 25 |
| YFZV 36B | 32.790 | 34.490 | 5 | 75 | 5 | 0.2 | 27 |
| YFZV 39B | 35.360 | 37.190 | 5 | 85 | 5 | 0.2 | 30 |

(1) The zener voltage($V_Z$) is measured 40ms after power is supplied.
(2) The Dynamic Impedance($Z_Z$) are measured by superimposing a minute alternating current on the regulated current($I_Z$)

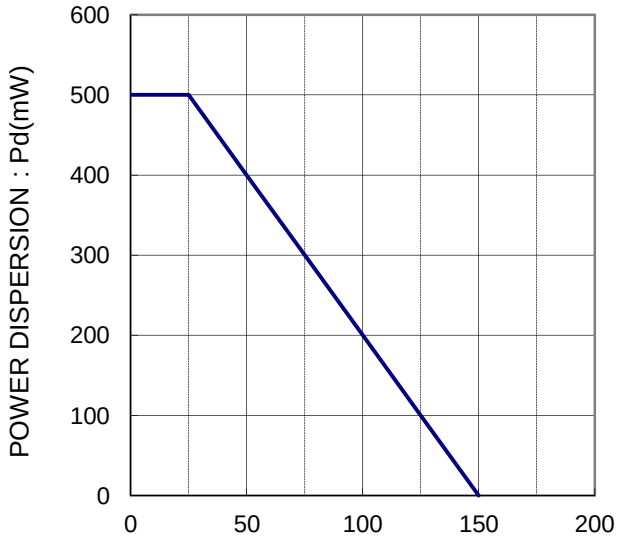
## ●MARKING (TYPE NO.)

| TYPE | TYPE NO. | TYPE | TYPE NO. |
|---|---|---|---|
| YFZV 2.0B | N 1 | YFZV 9.1B | N G |
| YFZV 2.2B | N 4 | YFZV 10B | N H |
| YFZV 2.4B | N 5 | YFZV 11B | N J |
| YFZV 2.7B | N 3 | YFZV 12B | N K |
| YFZV 3.0B | N 4 | YFZV 13B | N L |
| YFZV 3.3B | N 5 | YFZV 15B | N M |
| YFZV 3.6B | N 6 | YFZV 16B | N N |
| YFZV 3.9B | N 7 | YFZV 18B | N P |
| YFZV 4.3B | N 8 | YFZV 20B | N Q |
| YFZV 4.7B | N 9 | YFZV 22B | N R |
| YFZV 5.1B | N A | YFZV 24B | N S |
| YFZV 5.6B | N B | YFZV 27B | N T |
| YFZV 6.2B | N C | YFZV 30B | N U |
| YFZV 6.8B | N D | YFZV 33B | N V |
| YFZV 7.5B | N E | YFZV 36B | N W |
| YFZV 8.2B | N F | YFZV 39B | N X |

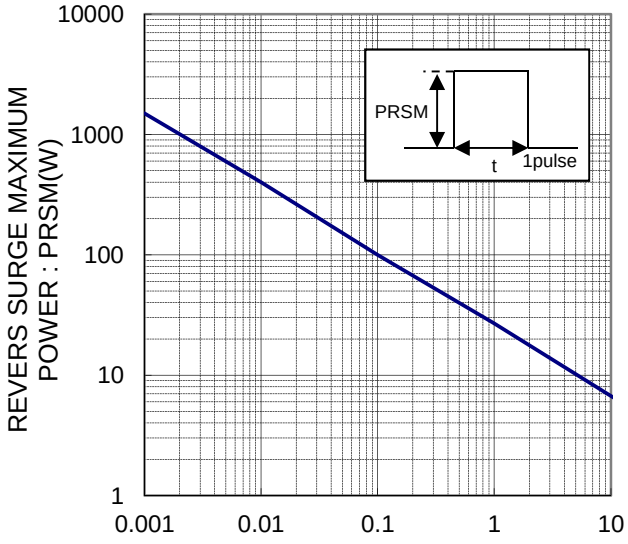
## ●Electrical characteristic curves



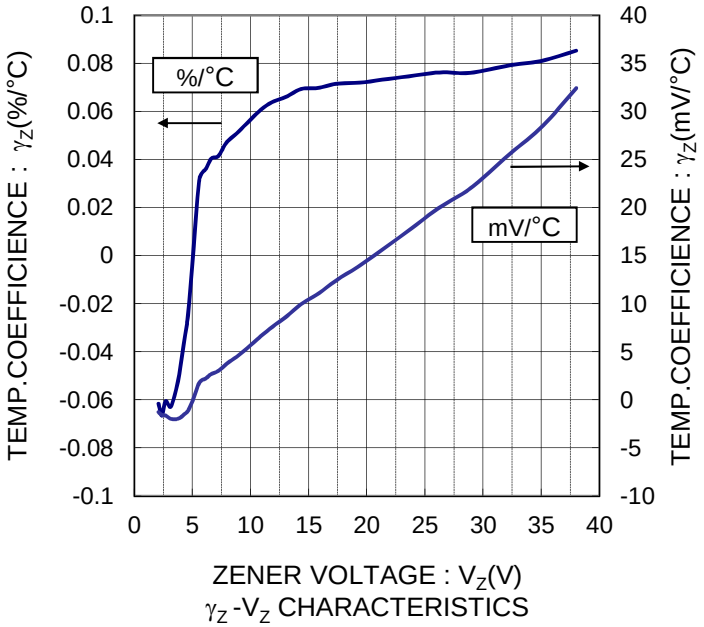
## ●Electrical characteristic curves




Pd-$T_a$ CHARACTERISTICS

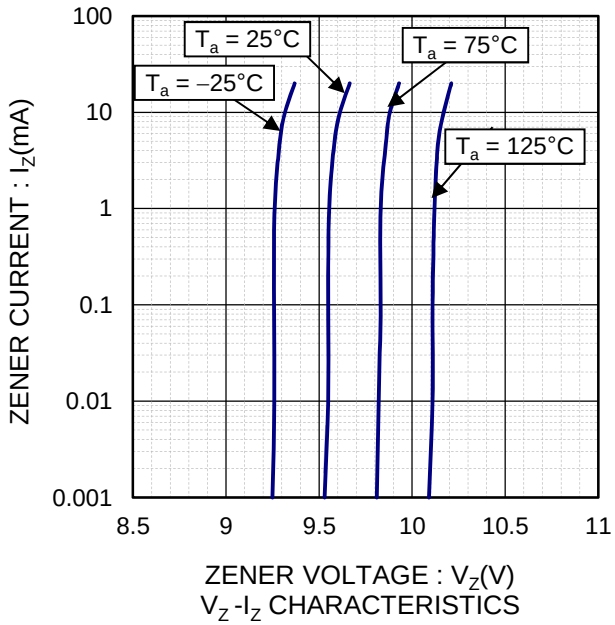


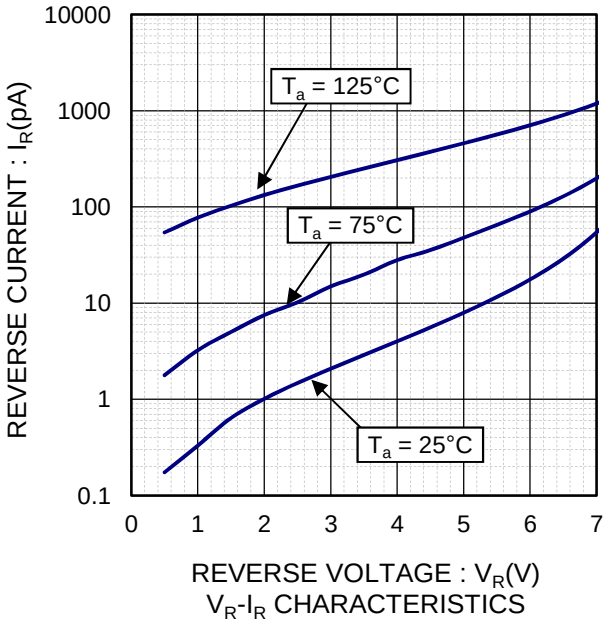

PRSM-TIME CHARACTERISTICS

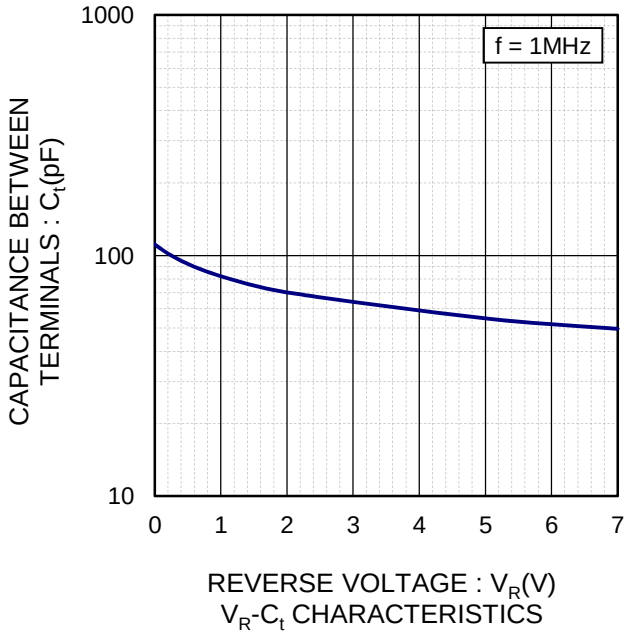


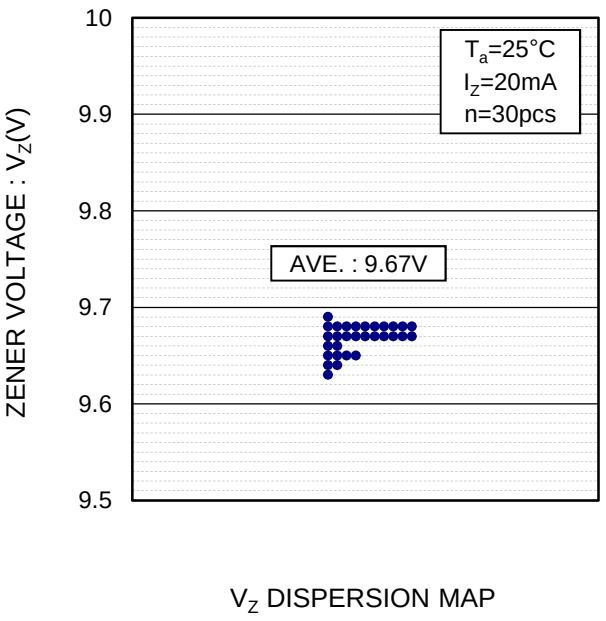

$\gamma_Z$ -$V_Z$ CHARACTERISTICS

## ●Electrical Characteristic Curves



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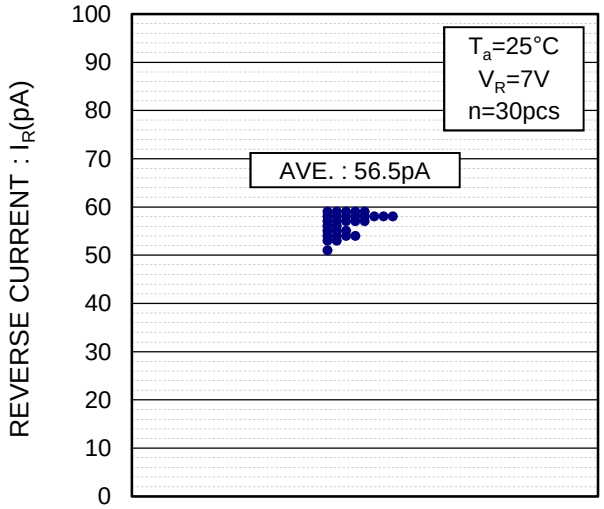
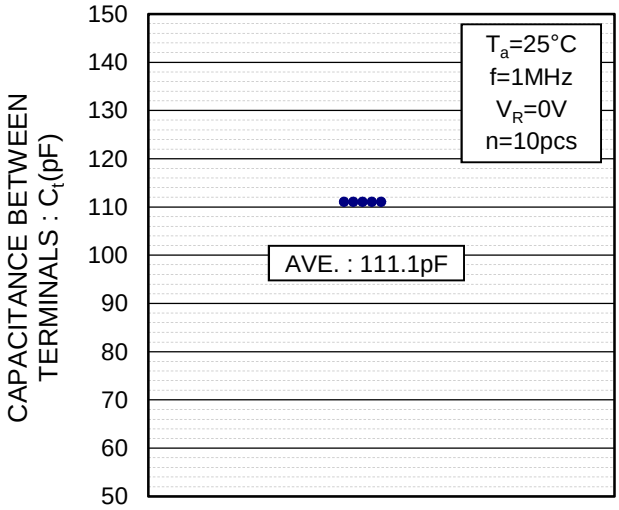
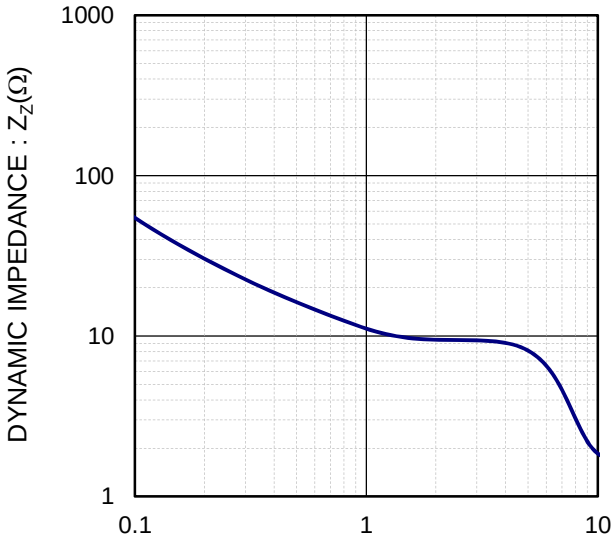



$I_R$ DISPERSION MAP




$C_t$ DISPERSION MAP




$Z_Z$ -$I_Z$ CHARACTERISTICS

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