05Z5.1~05Z24

Silicon Planar Type

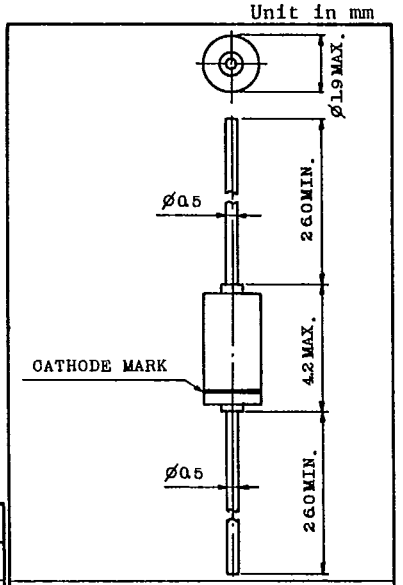
Zener Diode

CONSTANT VOLTAGE REGULATION APPLICATIONS.
REFERENCE VOLTAGE APPLICATIONS.

FEATURES:

- High Power Voltage : P=500mW
- Nominal Voltage Tolerance About ±6% and About ±2.5% (X, Y, Z).
- Hermetically Sealded Miniature Glass Package.
- High Reliability.

Unit in mm



JEDEC	DO-35
EIAJ	SC-40
TOSHIBA	1-2A1A

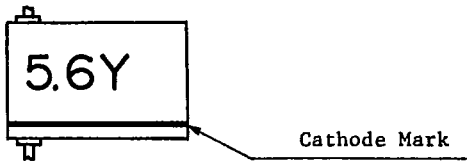
Weight : 0.14g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Dissipation	P	500	mW
Surge Power Dissipation (Note 1)	P_{ZSM}	1250	mW
Maximum(Peak) Zener Current	I_{ZM}	(Note 2)	mA
Junction Temperature	T_j	175	°C
Storage Temperature Range	T_{stg}	-65~175	°C

Note 1 : Allowable peak power for surge pulse of 1 second.
2 : See ELECTRICAL CHARACTERISTICS.
3 : Marking

Example : 05Z5.6-Y



ELECTRICAL CHARACTERISTICS (Ta=25°C)

TYPE		ZENER VOLTAGE V_Z (V) CLASSIFICATION(1) MIN.	CLASSIFICATION(1) MAX.	CLASSIFICATION(2) MIN.	CLASSIFICATION(2) MAX.	ZENER IMPEDANCE rd (Note 5) (Ω) TYP.	ZENER IMPEDANCE rd (Note 5) (Ω) MAX.	TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (%/°C) TYP.	TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (%/°C) MAX.	ZENER CURRENT I_Z (mA)	REVERSE CURRENT I_R (μA) MAX.	REVERSE VOLTAGE V_R (V)	MAXIMUM (PEAK) ZENER CURRENT (Note 2) I_{ZM}(mA) MAX.
05Z5.1	X	4.8	5.4	4.80	5.10	15	50	0.030	0.050	5	1	1	86
	Y			4.95	5.25								
	Z			5.10	5.40								
05Z5.6	X	5.3	6.0	5.30	5.60	4	30	0.032	0.050	5	1	2	82
	Y			5.50	5.80								
	Z			5.70	6.00								
05Z6.2	X	5.8	6.6	5.80	6.15	5	17	0.042	0.060	5	1	3	76
	Y			6.00	6.35								
	Z			6.25	6.60								
05Z6.8	X	6.4	7.2	6.40	6.75	7	15	0.048	0.065	5	1	5	68
	Y			6.65	7.00								
	Z			6.85	7.20								
05Z7.5	X	7.1	7.9	7.10	7.46	8	15	0.055	0.070	5	1	6	62
	Y			7.34	7.70								
	Z			7.54	7.90								
05Z8.2	X	7.7	8.7	7.70	8.10	10	20	0.060	0.077	5	1	6.5	56
	Y			7.96	8.40								
	Z			8.26	8.70								
05Z9.1	X	8.6	9.6	8.60	9.05	10	20	0.065	0.081	5	0.5	7	52
	Y			8.85	9.30								
	Z			9.15	9.60								
05Z10	X	9.4	10.6	9.40	9.90	15	25	0.070	0.085	5	0.5	8	46
	Y			9.75	10.25								
	Z			10.10	10.60								
05Z11	X	10.4	11.6	10.40	10.95	20	30	0.074	0.088	5	0.5	8.5	42
	Y			10.65	11.20								
	Z			11.05	11.60								

05Z5.1～05Z24

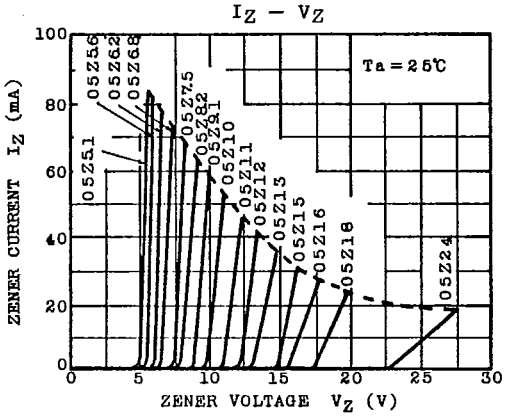
TYPE		ZENER VOLTAGE V_Z (V) CLASSIFICATION(1) MIN.	CLASSIFICATION(1) MAX.	CLASSIFICATION(2) MIN.	CLASSIFICATION(2) MAX.	ZENER IMPEDANCE rd (Note 5) (Ω) TYP.	ZENER IMPEDANCE rd (Note 5) (Ω) MAX.	TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (%/°C) TYP.	TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (%/°C) MAX.	ZENER CURRENT I_Z (mA)	REVERSE CURRENT I_R (μA) MAX.	REVERSE VOLTAGE V_R (V)	MAXIMUM (PEAK) ZENER CURRENT (Note 2) I_{ZM} (mA) MAX.
05Z12	X	11.4	12.6	11.40	11.95	20	30	0.077	0.090	5	0.5	9	38
	Y			11.70	12.25								
	Z			12.05	12.60								
05Z13	X	12.4	14.1	12.40	13.10	25	35	0.080	0.092	5	0.5	10	34
	Y			12.90	13.60								
	Z			13.40	14.10								
05Z15	X	13.9	15.6	13.90	14.65	25	35	0.084	0.095	5	0.5	11	30
	Y			14.40	15.15								
	Z			14.85	15.60								
05Z16	X	15.4	17.1	15.40	16.15	30	40	0.087	0.097	5	0.5	12	28
	Y			15.90	16.65								
	Z			16.35	17.10								
05Z18	X	16.9	19.1	16.90	17.80	30	40	0.092	0.099	5	0.5	14	24
	Y			17.55	18.45								
	Z			18.20	19.10								
05Z20	X	18.8	21.2	18.80	19.80	38	50	0.094	0.100	5	0.5	15	22
	Y			19.50	20.50								
	Z			20.20	21.20								
05Z22	X	20.8	23.3	20.80	21.80	45	60	0.096	0.105	5	0.5	17	20
	Y			21.50	22.50								
	Z			22.30	23.30								
05Z24	X	22.8	25.6	22.80	24.00	50	70	0.098	0.110	5	0.5	18	18
	Y			23.50	24.70								
	Z			24.40	25.60								

Note 4 : Test time : t=100ms

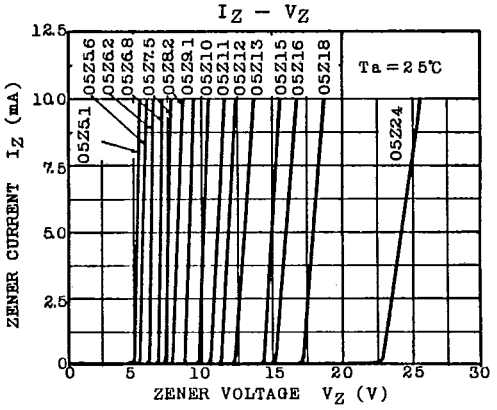
5 : Test frequency : f=1kHz

05Z5.1～05Z24

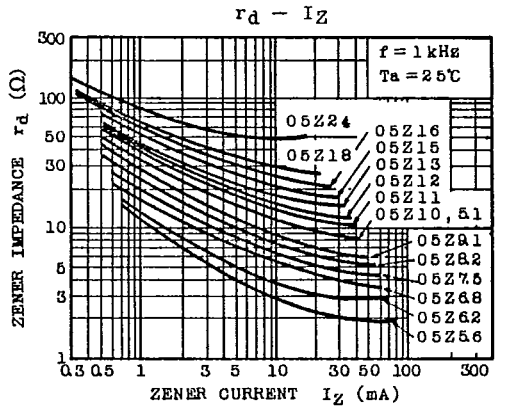
$I_Z - V_Z$



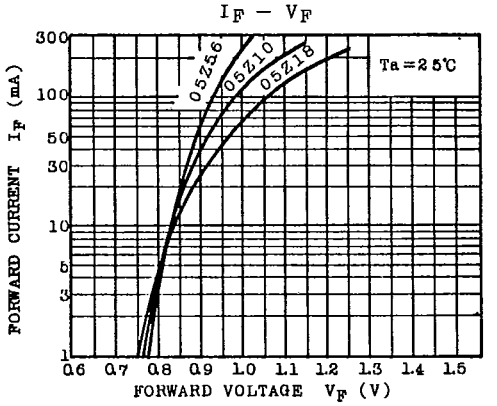
$I_Z - V_Z$



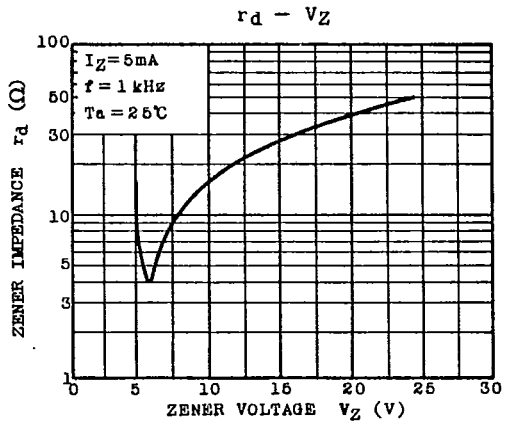
$r_d - I_Z$



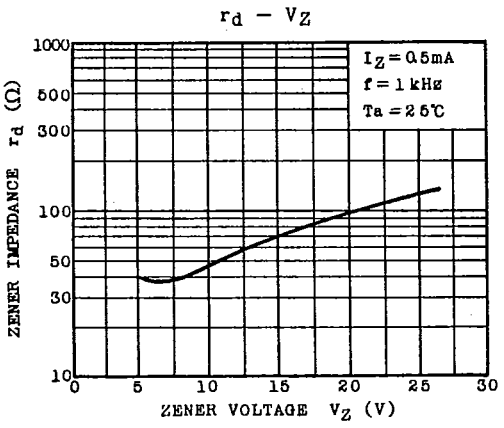
$I_F - V_F$



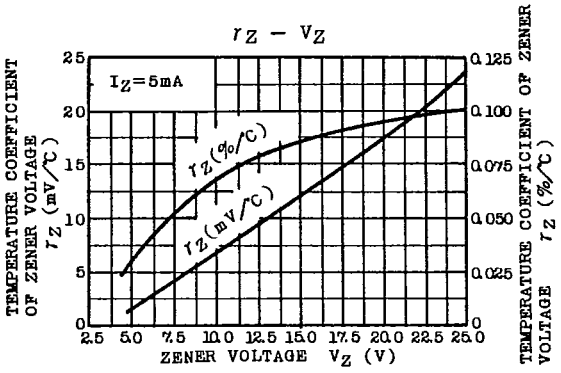
$r_d - V_Z$

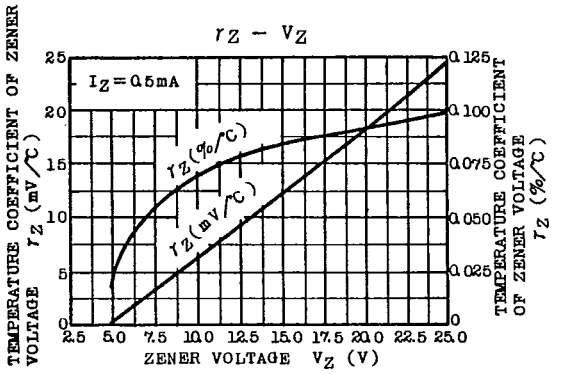


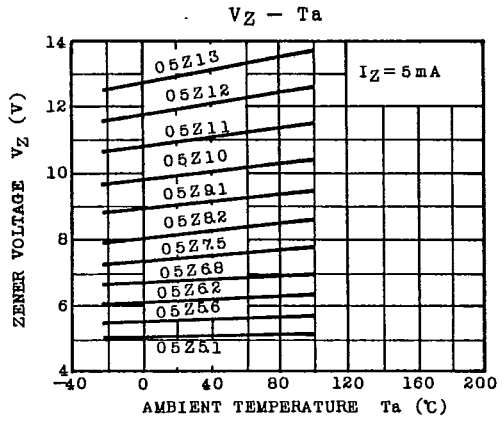
$r_d - V_Z$

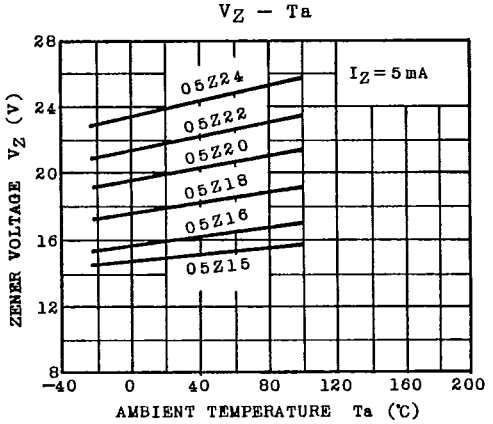


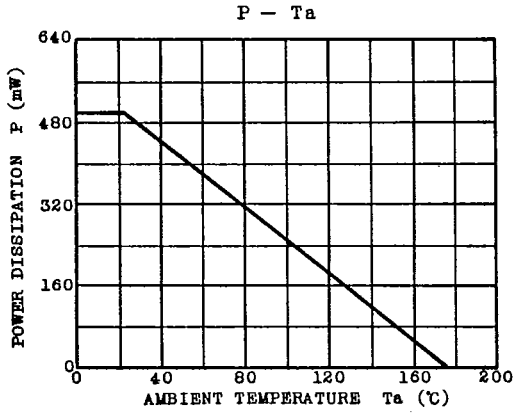
05Z5.1～05Z24


$r_Z - V_Z$
I_Z=5mA
r_Z(%/℃)
r_Z(mV/℃)
TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (mV/℃)
TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (%/℃)
ZENER VOLTAGE V_Z (V)


$r_Z - V_Z$
I_Z=0.5mA
r_Z(%/℃)
r_Z(mV/℃)
TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (mV/℃)
TEMPERATURE COEFFICIENT OF ZENER VOLTAGE r_Z (%/℃)
ZENER VOLTAGE V_Z (V)


$V_Z - Ta$
I_Z=5mA
05Z13
05Z12
05Z11
05Z10
05Z9.1
05Z8.2
05Z7.5
05Z6.8
05Z6.2
05Z5.6
05Z5.1
ZENER VOLTAGE V_Z (V)
AMBIENT TEMPERATURE Ta (℃)


$V_Z - Ta$
I_Z=5mA
05Z24
05Z22
05Z20
05Z18
05Z16
05Z15
ZENER VOLTAGE V_Z (V)
AMBIENT TEMPERATURE Ta (℃)


P - Ta
POWER DISSIPATION P (mW)
AMBIENT TEMPERATURE Ta (℃)