



CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

SURFACE MOUNT ZENER
SILICON PLANAR POWER ZENER DIODES
VOLTAGE RANGE 2.4V TO 91V

MMPZ5221BGP-A

THRU

MMPZ5270BGP-A

FEATURE

- * High temperature soldering type.
- * ESD rating of class 3(>16 kV) per human body model.
- * Silicon planar zener diodes.
- * Silicon-oxide passivated junction.
- * Low temperature coefficient voltage
- * 225 mW Rating on FR-4 or FR-5 Board

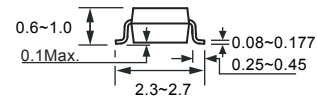
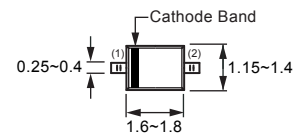
MECHANICAL

- * Void-free, Transfer-molded, Thermosetting plastic case
- * SC-76/SOD-323 Packaging.
- * Cathode indicated by polarity band.
- * Mounting position: Any.

CIRCUIT



SC-76/SOD-323



Dimensions in millimeters

SC-76/SOD-323

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	225	mW
Max. Operating Temperature Range	T_J	-65 to +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	$R_{\theta JA}$	-	-	550	$^\circ\text{C/W}$
Max. Instantaneous Forward Voltage at $I_F = 10\text{mA}$	V_F	-	-	0.9	Volts

- NOTES :
1. The JEDEC type numbers listed have a standard tolerance on the normal zener voltage of $\pm 10\%$, Suffix B $\pm 5\%$.
 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.
 5. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I_{ZT} , per JEDEC registration.

2003-01

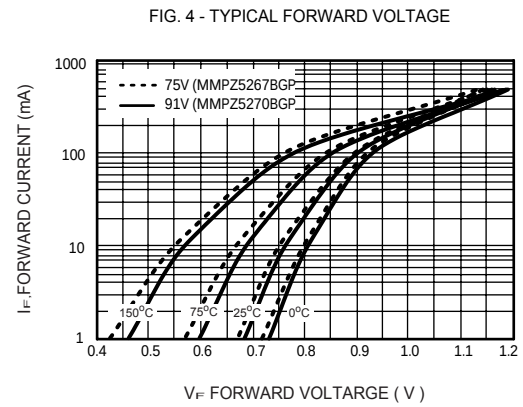
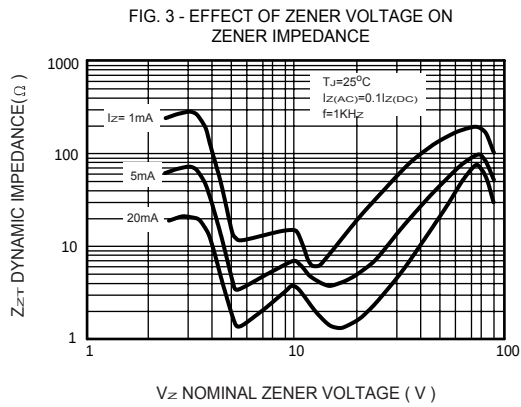
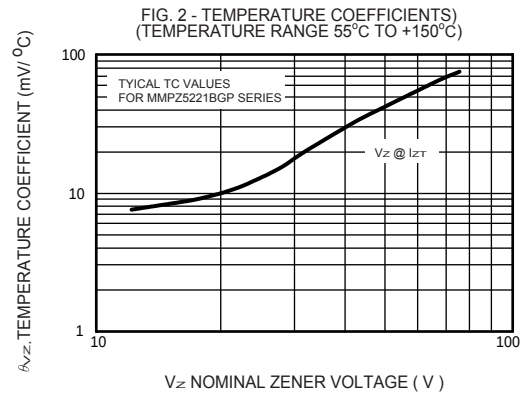
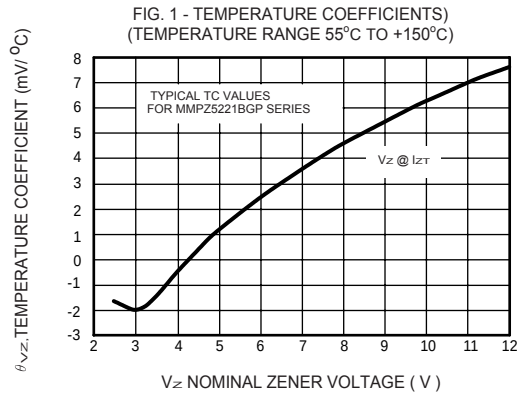
ELECTRICAL CHARACTERISTICS (MMPZ5221BGP-A THRU MMPZ5270BGP-A)

TYPE	Zener voltage V _Z (V) @ I _{ZT}			Test current I _{ZT} (mA)	Maximum Zener impedance			Maximum reverse leakage current		Type temperature coefficient at T _A = 25°C θ _{VZ} (%/°C)	Maximum regulator current at T _A = 50°C I _{ZM} (mA)
	Min	Nom	Max		Z _{ZT} at I _{ZT} (Ω)	Z _{ZK} (Ω)	at I _{ZK} (mA)	I _R (μA)	at V _R (V)		
	Volts	Volts	Volts								
MMPZ5221BGP-A	2.280	2.4	2.520	5	100	1800	0.25	100	1	-0.085	85
MMPZ5222BGP-A	2.375	2.5	2.625	5	100	1800	0.25	100	1	-0.085	82
MMPZ5223BGP-A	2.565	2.7	2.835	5	100	1900	0.25	75	1	-0.080	76
MMPZ5224BGP-A	2.660	2.8	2.940	5	100	1900	0.25	75	1	-0.080	73
MMPZ5225BGP-A	2.850	3.0	3.150	5	95	2000	0.25	50	1	-0.075	68
MMPZ5226BGP-A	3.135	3.3	3.465	5	95	2200	0.25	25	1	-0.070	62
MMPZ5227BGP-A	3.420	3.6	3.780	5	90	2300	0.25	15	1	-0.065	57
MMPZ5228BGP-A	3.705	3.9	4.095	5	90	2400	0.25	10	1	-0.060	52
MMPZ5229BGP-A	4.085	4.3	4.515	5	88	2500	0.25	5	1	-0.055	48
MMPZ5230BGP-A	4.465	4.7	4.935	5	70	2200	0.25	3	1.5	+0.030	44
MMPZ5231BGP-A	4.845	5.1	5.355	5	50	2050	0.25	2	2	+0.030	40
MMPZ5232BGP-A	5.320	5.6	5.880	5	25	1800	0.25	5	3	+0.038	36
MMPZ5233BGP-A	5.700	6.0	6.300	5	25	1800	0.25	5	3	+0.038	34
MMPZ5234BGP-A	5.890	6.2	6.510	5	10	1300	0.25	1	4	+0.045	33
MMPZ5235BGP-A	6.460	6.8	7.140	5	8	750	0.25	1	5.2	+0.050	30
MMPZ5236BGP-A	7.125	7.5	7.875	5	7	600	0.25	0.5	6	+0.058	27
MMPZ5237BGP-A	7.790	8.2	8.610	5	7	600	0.25	0.5	6.5	+0.062	25
MMPZ5238BGP-A	8.265	8.7	9.135	5	7	600	0.25	0.5	6.5	+0.065	23
MMPZ5239BGP-A	8.645	9.1	9.555	5	10	600	0.25	0.1	7	+0.068	22
MMPZ5240BGP-A	9.500	10	10.50	5	15	600	0.25	0.1	8	+0.075	20
MMPZ5241BGP-A	10.45	11	11.55	5	18	600	0.25	0.1	8.4	+0.076	18
MMPZ5242BGP-A	11.40	12	12.60	5	22	600	0.25	0.1	9.1	+0.077	17
MMPZ5243BGP-A	12.35	13	13.65	5	25	600	0.25	0.1	9.9	+0.079	16
MMPZ5244BGP-A	13.30	14	14.70	5	25	600	0.25	0.1	10	+0.082	14
MMPZ5245BGP-A	14.25	15	15.75	5	32	600	0.25	0.1	11	+0.082	13
MMPZ5246BGP-A	15.20	16	16.80	5	36	600	0.25	0.1	12	+0.083	12.5
MMPZ5247BGP-A	16.15	17	17.85	5	36	600	0.25	0.1	13	+0.084	12.1
MMPZ5248BGP-A	17.10	18	18.90	5	42	600	0.25	0.1	14	+0.085	11.2
MMPZ5249BGP-A	18.05	19	19.95	5	42	600	0.25	0.1	14	+0.086	10.8
MMPZ5250BGP-A	19.00	20	21.00	5	48	600	0.25	0.1	16	+0.086	10.3
MMPZ5251BGP-A	20.90	22	23.10	5	55	600	0.25	0.1	17	+0.087	9.4
MMPZ5252BGP-A	22.80	24	25.20	5	62	600	0.25	0.1	18	+0.088	8.6
MMPZ5253BGP-A	23.75	25	26.25	5	62	600	0.25	0.1	19	+0.089	7.6
MMPZ5254BGP-A	25.65	27	28.35	5	70	600	0.25	0.1	21	+0.090	7.5
MMPZ5255BGP-A	26.60	28	29.40	5	44	600	0.25	0.1	21	+0.091	7.3
MMPZ5256BGP-A	28.50	30	31.50	5	78	600	0.25	0.1	23	+0.091	6.8
MMPZ5257BGP-A	31.35	33	34.65	5	88	700	0.25	0.1	25	+0.092	6.2

ELECTRICAL CHARACTERISTICS (MMPZ5221BGP-A THRU MMPZ5270BGP-A)

TYPE	Zener voltage Vz (V) @ IZT			Test current	Maximum Zener impedance			Maximum reverse leakage current		Type temperature coefficient at TA= 25°C θVZ (%/°C)	Maximum regulator current at TA= 50°C IZM (mA)
	Min	Nom	Max	IZT (mA)	ZZT at IZT (Ω)	ZZK (Ω)	at IZK (mA)	IR (uA)	at VR (V)		
	Volts	Volts	Volts		IR (uA)	at VR (V)					
MMPZ5258BGP-A	34.20	36	37.80	5	95	700	0.25	0.1	27	+0.093	5.8
MMPZ5259BGP-A	37.05	39	40.95	5	130	800	0.25	0.1	30	+0.094	5.4
MMPZ5260BGP-A	40.85	43	45.15	3.0	93	900	0.25	0.1	33	+0.095	4.9
MMPZ5261BGP-A	44.65	47	49.35	2.7	105	1000	0.25	0.1	36	+0.095	4.5
MMPZ5262BGP-A	48.45	51	53.55	2.5	125	1100	0.25	0.1	39	+0.096	4.2
MMPZ5263BGP-A	53.20	56	58.80	2.2	150	1300	0.25	0.1	43	+0.096	3.8
MMPZ5264BGP-A	57.00	60	63.00	2.1	170	1400	0.25	0.1	46	+0.097	3.5
MMPZ5265BGP-A	58.90	62	65.10	2.0	185	1400	0.25	0.1	47	+0.097	-
MMPZ5266BGP-A	64.60	68	71.40	1.8	230	1600	0.25	0.1	52	+0.097	-
MMPZ5267BGP-A	71.25	75	78.75	1.7	270	1700	0.25	0.1	56	+0.098	-
MMPZ5268BGP-A	77.90	82	86.10	1.5	330	2000	0.25	0.1	62	+0.098	-
MMPZ5269BGP-A	82.65	87	91.35	1.4	370	2200	0.25	0.1	68	+0.099	-
MMPZ5270BGP-A	86.45	91	95.55	1.4	400	2300	0.25	0.1	69	+0.099	-

RATING CHARACTERISTIC CURVES (MMPZ5221BGP-A THRU MMPZ5270BGP-A)



RATING CHARACTERISTIC CURVES (MMPZ5221BGP-A THRU MMPZ5270BGP-A)

FIG. 5 - TYPICAL CAPACITANCE

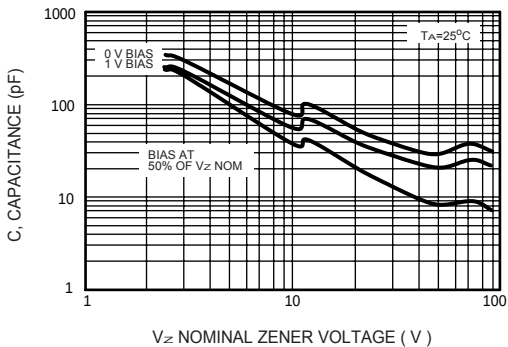


FIG. 6 - TYPICAL LEAKAGE CURRENT

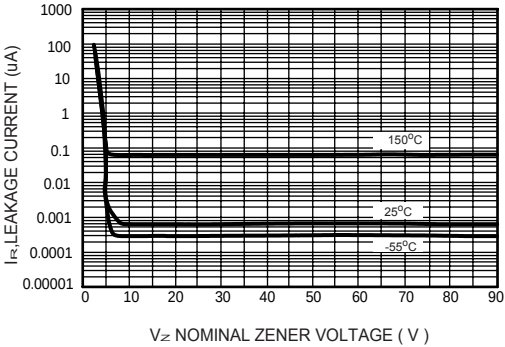


FIG. 7 - ZENER VOLTAGE VERSUS ZENER CURRENT (V_Z UP TO 12V)

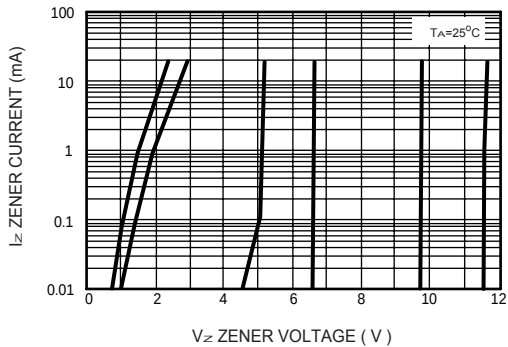
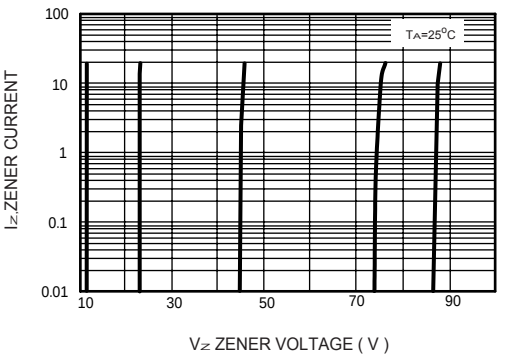


FIG. 8 - ZENER VOLTAGE VERSUS ZENER CURRENT (12V TO 91V)





CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

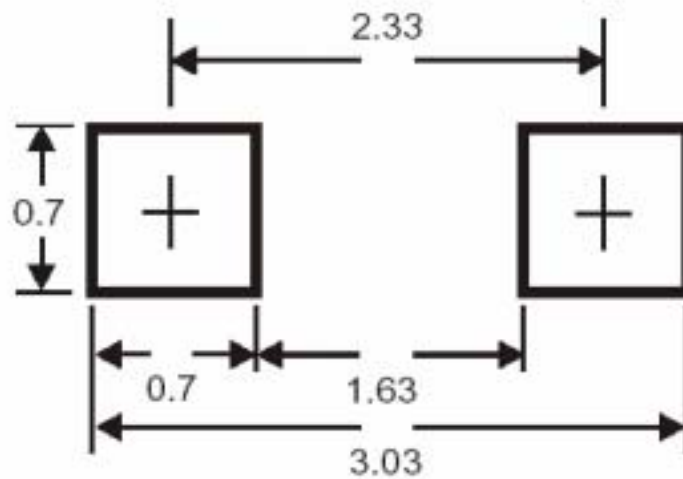
RECOMMENDED FOOT PRINT

all dimensions in mm

SC-76

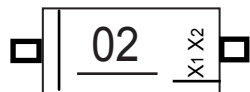
SOD-323

SC-76/SOD-323



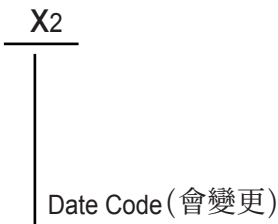
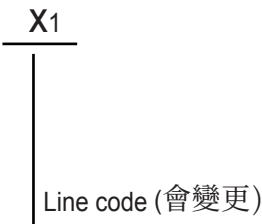
A.The Marking and Part No. for MMPZ5225BGP-A
(SC-76)

Marking:



* Laser mark for marking code and cathode band

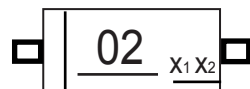
Part No.:



CUSTOMER :	APPROVED :	 CHENMKO LTD.
APPROVED :	CHECKED :	
CHECKED :	DRAWN :	
		DRAWING No. :

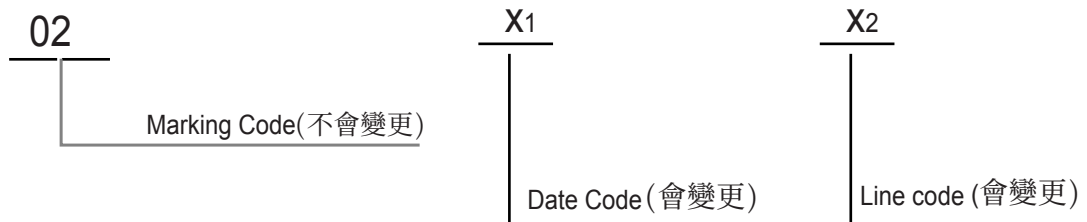
B.The Marking and Part No. for MMPZ5225BGP-A (SC-76)

Marking:



* Laser mark for marking code and cathode band

Part No.:



X2 Production line code: (會變更)

X2: " "沒有任何記號表第一條生產線

X2: "2"表第二條生產線

X2: "3"表第三條生產線

Date Code Standard (二年1個週期)

Date Code	1	2	3	4	5	6	7	8	9	T	V	C
2013Year	JAN.	FEB.	MAR.	APR	MAY	JUNE	JULY	AUG.	SEP.	OCT	NOV.	DEC.

Date Code	E	F	H	J	K	L	N	P	U	X	Y	Z
2014Year	JAN.	FEB.	MAR.	APR	MAY	JUNE	JULY	AUG.	SEP.	OCT	NOV.	DEC.

CUSTOMER :	APPROVED :	CHENMKO LTD.
APPROVED :	CHECKED :	
CHECKED :	DRAWN :	DRAWING No. :