



CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

SURFACE MOUNT ZENER
DUAL SILICON PLANAR POWER ZENER DIODES
VOLTAGE RANGE 2.4V TO 51V

CHBZ2V4BGP

THRU

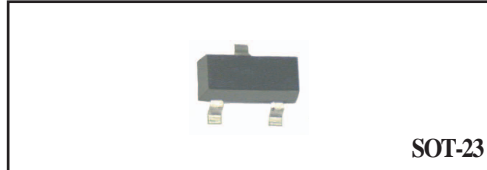
CHBZ51BGP

FEATURE

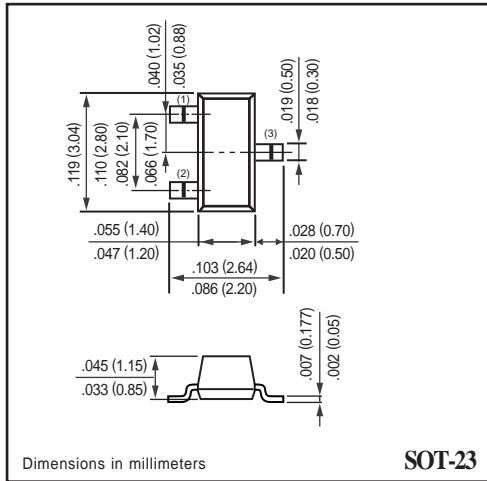
- * High temperature soldering type.
- * ESD rating of class 3(>16 kV) per human body model.
- * Silicon planar zener diodes.
- * Silicon-oxide passivated junction.
- * Low temperature coefficient voltage

MECHANICAL

- * Void-free, Transfer-molded, Thermosetting plastic case
- * SOT-23 Packaging.
- * Cathode indicated by polarity band.
- * Mounting position: Any.

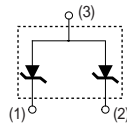


SOT-23



SOT-23

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	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	$R_{\theta JA}$	-	-	690	$^{\circ}\text{C}/\text{W}$
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 (CHBZ2V4BGP THRU CHBZ51BGP)

TYPE	Zener voltage V _Z (V) @ I _{ZT}			Test current I _{ZT} (mA)	Maximum Zener impedance			Maximum reverse leakage current		Marking	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								
CHBZ2V4BGP	2.280	2.4	2.520	20	30	1200	0.25	100	1	2V4B	190
CHBZ2V5BGP	2.375	2.5	2.625	20	30	1250	0.25	100	1	2V5B	182
CHBZ2V7BGP	2.565	2.7	2.835	20	30	1300	0.25	75	1	2V7B	168
CHBZ2V8BGP	2.660	2.8	2.940	20	30	1400	0.25	75	1	2V8B	162
CHBZ3BGP	2.850	3.0	3.150	20	29	1600	0.25	50	1	3B	152
CHBZ3V3BGP	3.135	3.3	3.465	20	28	1600	0.25	25	1	3V3B	138
CHBZ3V6BGP	3.420	3.6	3.780	20	24	1700	0.25	15	1	3V6B	126
CHBZ3V9BGP	3.705	3.9	4.095	20	23	1900	0.25	10	1	3V9B	115
CHBZ4V3BGP	4.085	4.3	4.515	20	22	2000	0.25	5	1	4V3B	106
CHBZ4V7BGP	4.465	4.7	4.935	20	19	1900	0.25	5	2	4V7B	97
CHBZ5V1BGP	4.845	5.1	5.355	20	17	1600	0.25	5	2	5V1B	89
CHBZ5V6BGP	5.320	5.6	5.880	20	11	1600	0.25	5	3	5V6B	81
CHBZ6BGP	5.700	6.0	6.300	20	7	1600	0.25	5	3.5	6B	76
CHBZ6V2BGP	5.890	6.2	6.510	20	7	1000	0.25	5	4	6V2B	73
CHBZ6V8BGP	6.460	6.8	7.140	20	5	750	0.25	3	5	6V8B	67
CHBZ7V5BGP	7.125	7.5	7.875	20	6	500	0.25	3	6	7V5B	61
CHBZ8V2BGP	7.790	8.2	8.610	20	8	500	0.25	3	6.5	8V2B	55
CHBZ8V7BGP	8.265	8.7	9.135	20	8	600	0.25	3	6.5	8V7B	52
CHBZ9V1BGP	8.645	9.1	9.555	20	10	600	0.25	3	7	9V1B	50
CHBZ10BGP	9.500	10	10.50	20	17	600	0.25	3	8	10B	45
CHBZ11BGP	10.45	11	11.55	20	22	600	0.25	2	8.4	11B	41
CHBZ12BGP	11.40	12	12.60	20	30	600	0.25	1	9.1	12B	38
CHBZ13BGP	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9	13B	35
CHBZ14BGP	13.30	14	14.70	9.0	15	600	0.25	0.1	10	14B	32
CHBZ15BGP	14.25	15	15.75	8.5	16	600	0.25	0.1	11	15B	30
CHBZ16BGP	15.20	16	16.80	7.8	17	600	0.25	0.1	12	16B	28
CHBZ17BGP	16.15	17	17.85	7.4	19	600	0.25	0.1	13	17B	27
CHBZ18BGP	17.10	18	18.90	7.0	21	600	0.25	0.1	14	18B	25
CHBZ19BGP	18.05	19	19.95	6.6	23	600	0.25	0.1	14	19B	24
CHBZ20BGP	19.00	20	21.00	6.2	25	600	0.25	0.1	16	20B	23
CHBZ22BGP	20.90	22	23.10	5.6	29	600	0.25	0.1	17	22B	21
CHBZ24BGP	22.80	24	25.20	5.2	33	600	0.25	0.1	18	24B	19.1
CHBZ25BGP	23.75	25	26.25	5.0	35	600	0.25	0.1	19	25B	18.2
CHBZ27BGP	25.65	27	28.35	4.6	41	600	0.25	0.1	21	27B	16.8
CHBZ28BGP	26.60	28	29.40	4.5	44	600	0.25	0.1	21	28B	16.2
CHBZ30BGP	28.50	30	31.50	4.2	49	600	0.25	0.1	23	30B	15.1
CHBZ33BGP	31.35	33	34.65	3.8	58	700	0.25	0.1	25	33B	13.8

ELECTRICAL CHARACTERISTICS (CHBZ2V4BGP THRU CHBZ51BGP)

TYPE	Zener voltage V _Z (V) @ I _{ZT}			Test current	Maximum Zener impedance			Maximum reverse leakage current		Marking	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	I _{ZT} (mA)							
CHBZ36BGP	34.20	36	37.80	3.4	70	700	0.25	0.1	27	36B	13.8
CHBZ39BGP	37.05	39	40.95	3.2	80	800	0.25	0.1	30	39B	12.6
CHBZ43BGP	40.85	43	45.15	3.0	93	900	0.25	0.1	33	43B	11.6
CHBZ47BGP	44.65	47	49.35	2.7	105	1000	0.25	0.1	36	47B	10.6
CHBZ51BGP	48.45	51	53.55	2.5	125	1100	0.25	0.1	39	51B	9.7

RATING CHARACTERISTIC CURVES (CHBZ2V7BGP THRU CHBZ51BGP)

FIG. 1 - TYPICAL FORWARD VOLTAGE

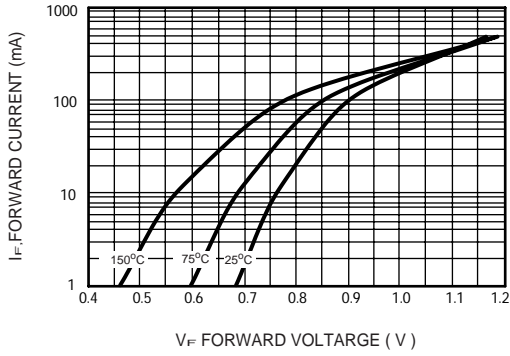


FIG. 2 - TEMPERATURE COEFFICIENTS (TEMPERATURE RANGE 55°C TO +150°C)

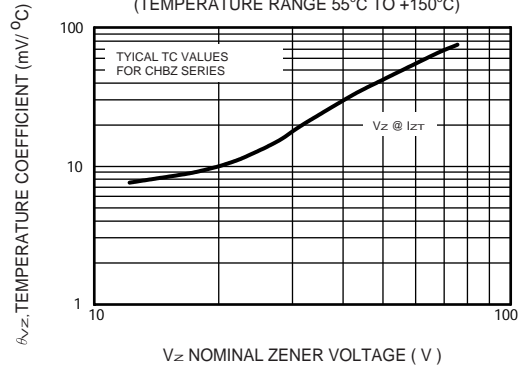


FIG. 3 - EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

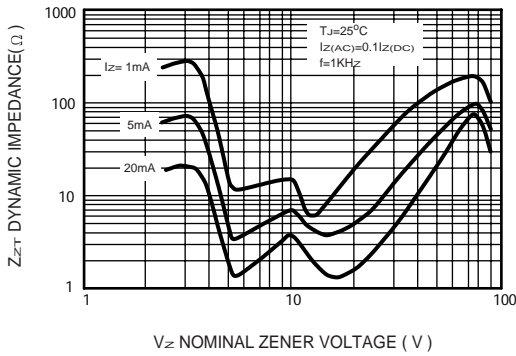


FIG. 4 - TYPICAL LEAKAGE CURRENT

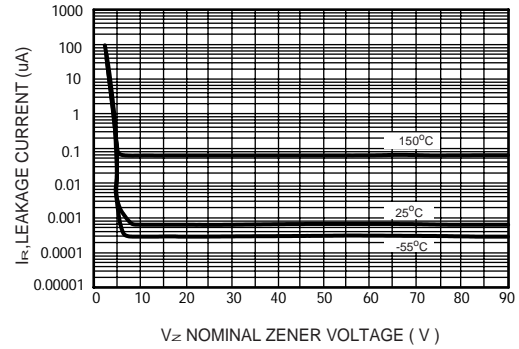


FIG. 5 - ZENER VOLTAGE VERSUS ZENER CURRENT (V_z UP TO 12V)

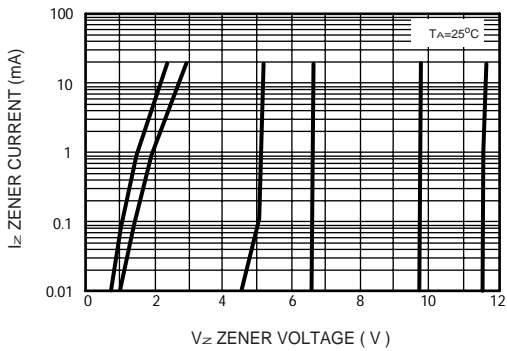


FIG. 6 - ZENER VOLTAGE VERSUS ZENER CURRENT (12V TO 51V)

