

Low Cost Modules:

Available in 3 Pin TO-39 and Connectorized Housings

(Listed by increasing Frequency, Noise Figure, and Power)

B-74-09-51
T-74-09-01

Model No.	Freq. Range (MHz)	Gain (dB)		Noise Figure (dB)		Power Output (dBm)		Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out		Power Typ	
		Typ	Min	Typ	Max	Typ	Min		Vdc	mA		
CZ8040**	kHz-300	18.5	18.0	3.8	5.0	+11.0	+ 9.5	+18	3.0	2.5	+3.4	25
CZ8111**	kHz-400	15.0	13.0	2.8	4.0	+ 0.5	- 2.0	+14	2.5	2.5	+1.8	10
CZ8110**	kHz-400	14.0	13.0	4.0	4.5	- 2.0	- 4.0	+ 8	2.5	2.5	+3	10
CZ8120**	kHz-400	14.0	13.0	5.0	6.0	+ 9.0	+ 7.0	+18	2.5	2.5	+5	25
CZ8130**	kHz-400	14.0	13.0	6.0	7.0	+17.0	+16.0	+26	3.0	2.5	+5.75	60
CZ8210**	kHz-600	10.0	9.0	5.5	6.5	- 3.0	- 4.0	+ 8	2.5	2.5	+1.75	10
CZ8220**	kHz-600	10.0	9.0	5.5	6.5	+ 9.0	+ 7.0	+18	2.5	2.5	+3.5	25
CZ8230**	kHz-600	10.0	9.0	5.5	6.5	+16.0	+15.0	+22	3.0	2.5	+5	60
CZ8310**	kHz-1000	8.0	7.0	6.0	7.0	- 3.0	- 4.0	+ 8	3.0	3.0	+1.6	10
CZ8320**	kHz-1000	8.0	7.0	6.2	7.2	+ 8.0	+ 7.0	+18	3.0	3.0	+2.75	25
CZ8330**	kHz-1000	6.5	5.5	8.5	9.5	+14.0	+13.0	+22	3.0	3.0	+4.5	60

**Requires 3 external capacitors.

General Application Amplifiers

Available in 4 Pin TO-12, Flatpacks, Surface Mount Packages and Connectorized Housings

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB)		Noise Figure (dB)		Power Output (dBm)		Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out		Power Typ	
		Typ	Min	Typ	Max	Typ	Min		Vdc	mA		
CZ8206	5-200	31.8	30.0	3.2	3.5	+ 4.2	+ 3.0	+14	2.0:1	2.0:1	+12	30
CZ8251	5-200	26.5	25.0	3.6	4.0	+ 2.5	+ 1.0	+16	2.0:1	2.0:1	+ 5	30
CZ8201	5-200	32.0	30.0	3.3	4.0	+ 5.8	+ 3.0	+16	2.0:1	2.0:1	+15	30
CZ8202	5-200	29.0	27.0	4.2	5.0	+10.0	+ 9.0	+20	2.0:1	2.0:1	+15	60
CZ8207	5-200	18.0	17.0	4.0	5.5	+ 4.0	0.0	+13	2.0:1	2.0:1	+ 5	16.5
CZ8208	5-200	14.0	13.0	4.5	7.0	+12.0	+10.0	+23	2.0:1	2.0:1	+12	36
CZ8205	5-200	13.5	12.0	6.0	7.0	+21.0	+19.0	+25	2.0:1	2.0:1	+15	95
CZ8203	5-200	20.0	19.0	6.9	7.5	+ 9.5	+ 8.5	+20	2.0:1	2.0:1	+15	60
CZ8451	5-250	17.0	15.5	2.3	3.0	+ 2.5	0.0	+14	2.0:1	2.0:1	+ 5	12.5
*CZ8453	5-300	22.0	19.5	1.9	2.5	+ 5.0	+ 2.5	+16	2.0:1	2.0:1	+15	18
CZ8400	5-400	14.0	13.0	3.2	3.5	- 2.0	- 3.0	+ 8	2.5:1	2.5:1	+15	8
CZ8460**	kHz-400	14.0	13.0	3.2	3.5	- 2.0	- 3.0	+ 8	2.5:1	2.5:1	+15	8
CZ8401	5-400	14.0	13.0	4.2	4.8	- 2.0	- 4.0	+ 8	2.0:1	2.0:1	+15	10
CZ8461**	kHz-400	14.0	13.0	4.2	4.8	- 2.0	- 4.0	+ 8	2.0:1	2.0:1	+15	10
CZ8402	5-400	15.0	13.5	4.8	5.8	+ 7.0	+ 6.0	+20	2.0:1	2.0:1	+15	25
CZ8462**	kHz-400	15.0	13.5	4.8	5.8	+ 9.0	+ 7.0	+20	2.0:1	2.0:1	+15	25
CZ8405	5-400	13.5	13.0	6.0	7.0	+20.5	+19.0	+32	2.0:1	2.0:1	+15	90
CZ8403	5-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	2.0:1	+24	65
CZ8463**	kHz-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	2.0:1	+24	65
CZ8404	5-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	2.0:1	+15	65
CZ8464**	kHz-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	2.0:1	+15	65
CZ8553	5-500	19.5	18.0	3.5	4.5	+12.0	+ 9.0	+24	2.0:1	2.0:1	+15	33

*New Product. **Requires 3 external capacitors.

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Outline Drawings

All unmarked Pins are internally grounded.

T2 (TO-5 Package)

BASE IS GLASS.

PINS EQ SPACED ON 0.230 DIA BC LOCATED AS SHOWN

Model No.	IN1	IN2	A	B	DC	A	B	CTL
TWR2213	2	6	3	5	N/A	N/A	N/A	N/A
TWR2224	2	6	3	5	8	N/A	N/A	N/A
TWR2224	2	6	N/A	N/A	8	3	5	4

T4 (TO-8 Package)

T5 (5 Pin TO-8 Package)

T7 (TO-12 Package)

T8 (TO8-B Package)

T10 (TO-39 Package)

SM1 (Surface Mount Package)

SM2 (Surface Mount Package)

Model No.	IN	OUT	DC	A	B	CTL
AB Amps	3	1	2	N/A	N/A	N/A
TWR2278	3	1	N/A	4	2	N/A
TWR9002	1	3	2	N/A	N/A	4

SM3 (Surface Mount Package)

SM4 (Surface Mount Package)

Outline Drawings All unmarked Pins are internally grounded.

FP2 (Flatpack)

50 OHM INPUT 50 OHM OUTPUT

FP4 (Flatpack)

50 OHM INPUT 50 OHM OUTPUT

FP7 (Flatpack)

ORIENTATION MARK

0.100 SQ. MAX 0.250 MIN

0.015 ±0.003 TYP

3 EQUAL SPACES @ 0.050 (1.27) TOLERANCE NON-CUMULATIVE

0.025 0.005 ±0.002

FP-7 PIN CONFIGURATION					
Model No.	RF COM	RF1	RF2	A	B
SPST	N/A	8	5	2	3
SPDT	1	3	6	4	5

FP9 (Flatpack)

750 125 0.050 TYP 24 PLACES 750 0.600 150 MAX 0.065

FP10 (Flatpack)

100 8 PL NON-CUMULATIVE 115 1.130 ± 0.015 0.900 500 MIN TYP 398 0.795 ± 0.015 109 DIA THRU 2 PL 0.015 DIA, 10 PL 25 0.015 175 MAX

FP11 (Flatpack)

PIN 8 51 0.020 0.133 DIA TYP 25 28 TYP PIN 1 0.062 51 205 MAX 0.080 TYP 110 0.080 TYP 160 140 TYP

FP-11			
Model No.	Out	RF1	RF2
W00	7	3	1

FP12 (Flatpack)

0.375 ±0.020 0.015 DIA ±0.005 6 PLACES 0.375 ±0.020 0.312 MIN TYP 0.088 0.100 0.200 0.080 0.125 MAX

FP-12						
Model No.	RF1	RF2	COM	A	B	CTL
TWP2214	2	4	N/A	1	3	N/A
TWP2282	4	6	2	1	3	N/A
TWP2225	4	6	2	N/A	N/A	1

FP13 (Flatpack)

6 EQUAL SPACES @ 0.100 TOLERANCE NON-CUMULATIVE 0.110 TYP PIN 1 0.325 MIN 0.490 0.820 ± 0.005 0.145 MAX 0.070

RF 2 not connected on SPST + = +5 Vdc

FP14 (Flatpack)

7 EQUAL SPACES @ 0.100 TOLERANCE NON-CUMULATIVE 0.150 TYP PIN 1 0.325 MIN 0.800 1.000 ± 0.005 0.145 0.070

RF 4 not connected on SPST + = +5 Vdc