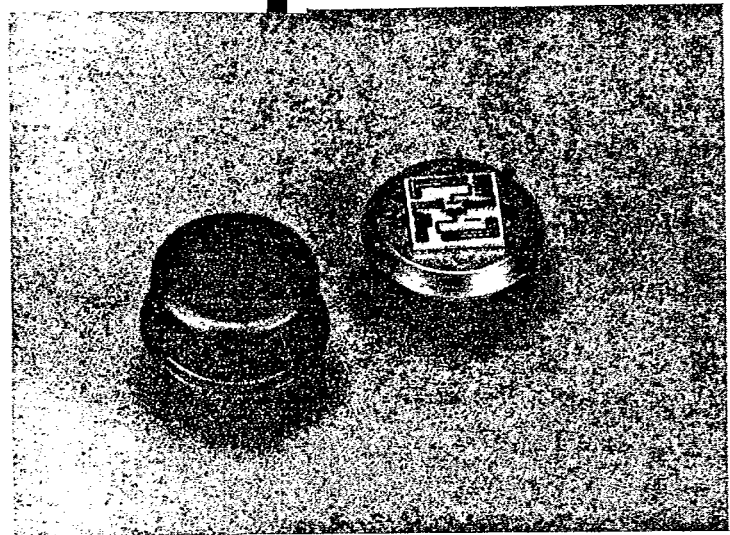


WJ-L34

500 TO 2400 MHz TO-8 THIN FILM LIMITER MODULE

- VOLTAGE VARIABLE LIMITING LEVEL:
-2 TO +2 dBm
- LOW INSERTION LOSS AT LOW INPUT LEVELS: ≤ 3.0 dB (TYP.)
- GOOD SUPPRESSION OF EVEN ORDER HARMONICS DUE TO BALANCED CIRCUIT DESIGN: > 50 dB AT 10 dBm INPUT (TYP.)



Specifications

Characteristic	Typical	Guaranteed* Min./Max.
Frequency	500–2600 MHz	500-2400 MHz
Insertion Loss $P_{IN} \leq -20$ dBm $+15 \leq \text{Bias} \leq +20$ Vdc	2.9 dB	3.7 dB (Max.)
Input VSWR $P_{IN} \leq -10$ dBm $+10 \leq \text{Bias} \leq +20$ Vdc	$< 1.6:1$	2.0:1 (Max.)
Output VSWR $P_{IN} \leq +10$ dBm $+10 \leq \text{Bias} \leq +20$ Vdc	$< 1.8:1$	2.2:1 (Max.)
Input Signal (Max.)		+26 dBm
Bias At +20 Vdc At +15 Vdc At +10 Vdc	8.5 mA 6.5 mA 4.0 mA	

*Measured in a 50-ohm system, guaranteed at 25°C.

Limiting and Insertion Loss Characteristics (25°C)

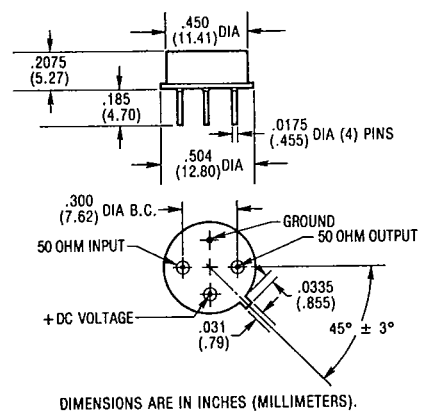
Bias Voltage	Output Level at Limiting Threshold (1 dB Comp)		Max. Output at Limiting Level (+20 dBm Input)		Insertion Loss (1000 MHz)	
	Typ.	Max.	Typ.	Max.	Typ.	Max.
+20 Volts	-2.0	-0.5	+2.2	+3.2	2.4	3.2
+15 Volts	-2.5	-1.0	+1.0	+2.0	2.6	3.5
+10 Volts	-4.2	-2.5	-1.0 ¹	+0.0 ¹	2.8	3.7
+5 Volts	-10.5	-8.0	-3.0 ¹		4.0	4.5

Notes:

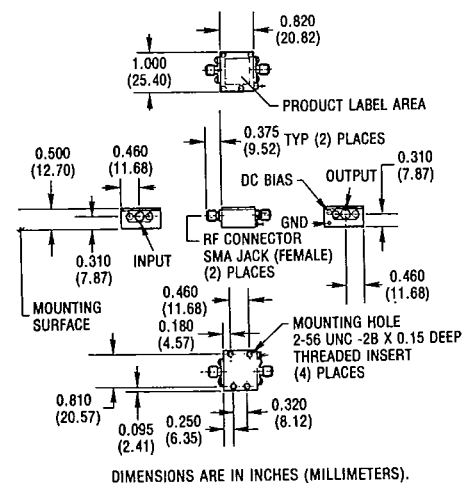
1. At 1000 MHz

Outline Drawings

L34



CL34

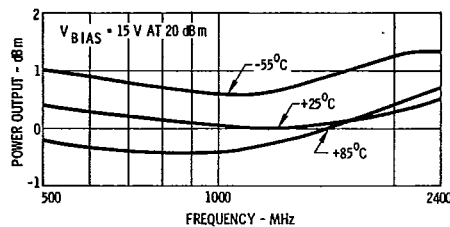


*WJ-CL34 is standard WJ-L34 installed in miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

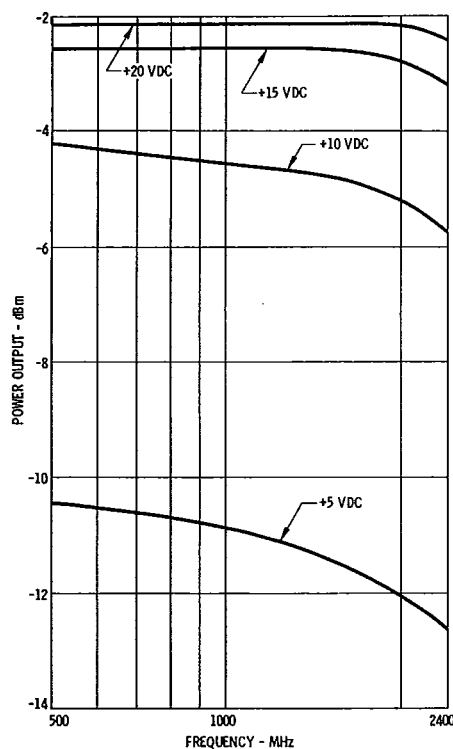
Weight 2.27 grams (0.08 oz.)
maximum

Typical Performance at 25°C

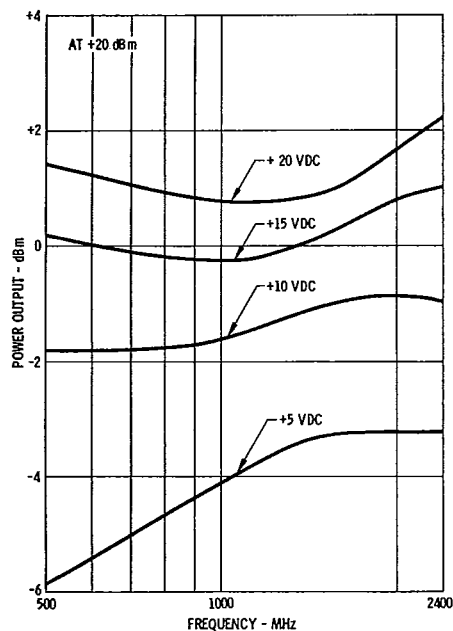
Maximum Limiting Level Over Temperature



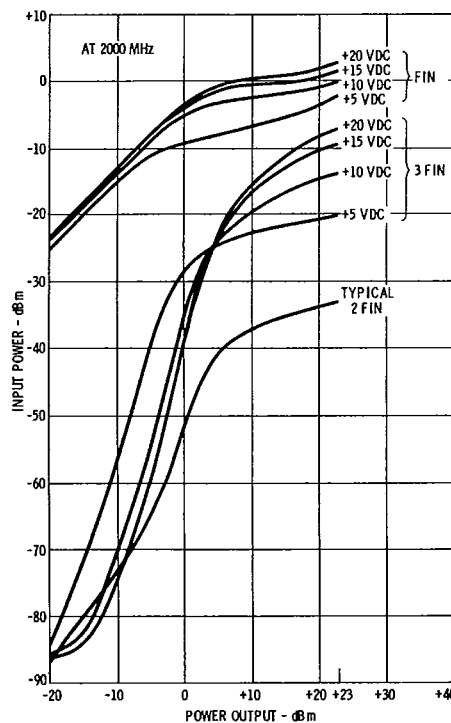
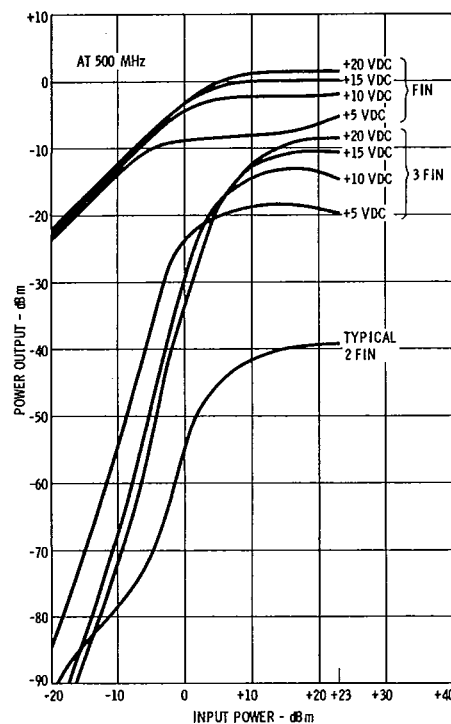
Power Output at 1 dB Compression Point



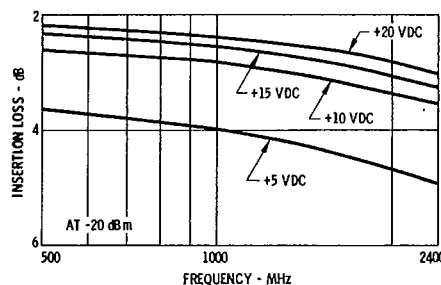
Maximum Limiting Level vs. Bias Voltage



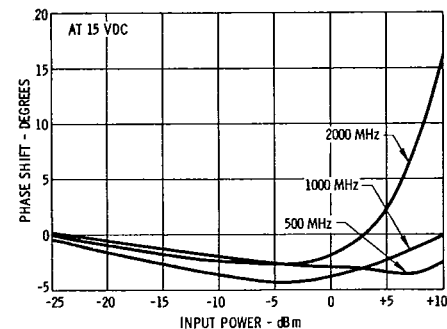
Limiting Characteristics



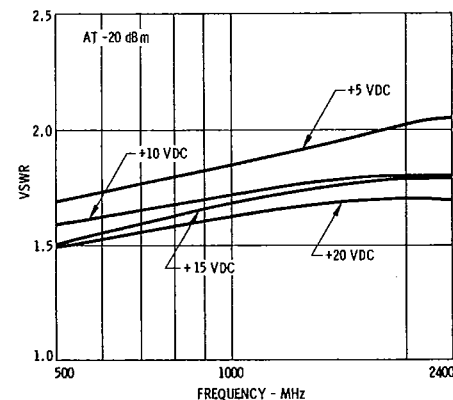
Insertion Loss



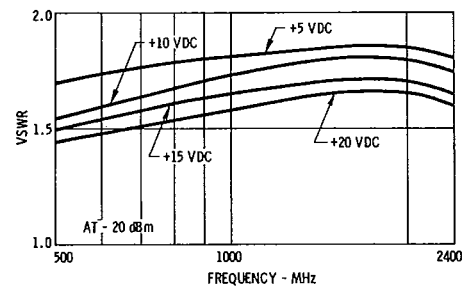
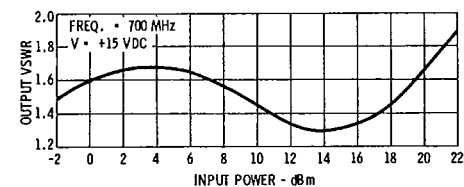
Phase Shift vs. Input Power



Output VSWR vs. Frequency



Output VSWR vs. Input Power



Continued on following page

WJ-L34 (continued)

Typical Automatic Test Data

$V_{CC} = 15 \text{ V}$

FREQ MHz	Gain dB	Gain dB	LOSS dB
500.	1.6	1.6	2.4
600.	1.5	1.6	2.3
700.	1.5	1.6	2.3
800.	1.5	1.6	2.3
900.	1.5	1.6	2.3
1000.	1.5	1.6	2.4
1100.	1.5	1.6	2.5
1200.	1.6	1.6	2.5
1300.	1.6	1.7	2.7
1400.	1.6	1.7	2.8
1500.	1.6	1.7	2.8
1600.	1.6	1.7	2.9
1700.	1.6	1.7	2.9
1800.	1.6	1.7	2.9
1900.	1.6	1.7	2.9
2000.	1.5	1.7	3.0
2100.	1.6	1.8	3.1
2200.	1.6	1.8	3.0
2300.	1.5	1.7	2.9
2400.	1.5	1.7	3.2
2500.	1.5	1.7	3.4
2600.	1.4	1.7	3.2

FW = 3.8 MIN = 2.3 FLT +/- .8

Linear S-Parameters

FREQ MHz	S11 Mag	S11 Ph	S21 Mag	S21 Ph	S12 Mag	S12 Ph	S22 Mag	S22 Ph
500.	.22	-73.2	.76	37.1	.76	36.9	.24	-75.5
600.	.21	-75.0	.76	41.5	.77	41.2	.23	-78.7
700.	.20	-76.0	.76	47.0	.77	46.2	.23	-86.0
800.	.21	-79.4	.77	50.5	.77	50.5	.23	-91.7
900.	.21	-105.4	.77	55.9	.76	55.2	.24	-96.6
1000.	.21	-111.7	.76	61.9	.76	61.0	.24	-101.0
1100.	.21	-118.3	.75	67.0	.74	66.8	.24	-107.3
1200.	.22	-124.1	.75	71.4	.74	71.9	.24	-111.8
1300.	.22	-128.6	.73	76.4	.73	77.9	.25	-116.0
1400.	.22	-135.0	.73	84.4	.71	84.4	.25	-120.8
1500.	.22	-140.3	.72	90.3	.71	90.3	.25	-125.7
1600.	.22	-144.6	.72	96.7	.71	96.8	.26	-129.4
1700.	.23	-150.2	.72	102.7	.70	103.1	.26	-133.9
1800.	.22	-154.2	.71	109.0	.70	109.5	.26	-136.5
1900.	.22	-160.4	.72	115.0	.70	115.7	.26	-140.9
2000.	.21	-165.3	.71	120.8	.70	121.8	.26	-144.0
2100.	.23	-173.4	.70	126.1	.71	126.5	.26	-154.6
2200.	.22	-178.7	.71	131.2	.70	132.2	.27	-158.4
2300.	.21	-178.0	.71	137.0	.70	137.9	.27	-159.5
2400.	.20	-173.5	.69	142.1	.70	143.4	.26	-163.4
2500.	.19	-168.2	.68	149.1	.69	148.9	.26	-164.3
2600.	.18	-165.8	.69	155.1	.70	155.1	.25	-166.1

Deviation from Linear Phase, Gain and Group Delay

FREQ MHz	DEV LIN P dB	REL P dB	GRIN DEV dB	RES GRIN dB	GROUP DELAY N-SEC
500.	2.09	.00	.20	-2.44	.12
600.	1.62	4.44	.40	-2.34	.14
700.	1.40	9.92	.39	-2.35	.12
800.	-.01	13.41	.46	-2.28	.12
900.	-1.06	18.06	.48	-2.26	.16
1000.	-.01	24.01	.37	-2.37	.15
1100.	-1.36	29.96	.22	-2.52	.13
1200.	-2.66	34.37	.24	-2.50	.16
1300.	-1.41	41.32	.06	-2.68	.18
1400.	-1.09	47.34	-.04	-2.78	.17
1500.	-.90	53.23	-.11	-2.85	.17
1600.	-.15	59.68	-.15	-2.89	.17
1700.	.12	65.65	-.17	-2.91	.17
1800.	.70	71.93	-.20	-2.94	.17
1900.	.99	77.92	-.14	-2.88	.16
2000.	1.10	83.73	-.22	-2.96	.16
2100.	.74	89.07	-.34	-3.08	.14
2200.	.00	94.12	-.22	-2.96	.16
2300.	1.00	100.74	-.20	-2.94	.15
2400.	-.38	105.06	-.48	-3.22	.12

WAVELENGTH IN AIR CM = 4.75111
TIME DELAY IN N-SEC = .15837

Absolute Maximum Ratings

Ambient Operating

Temperature. . . . -54°C to +100°C

Storage

Temperature. . . . -62°C to +125°C

Max. DC Voltage. +25 Vdc

Max. Continuous RF

Input Power. 100 Milliwatts

Max. Short Term RF

Input Power
(1 Minute Max.) 400 Milliwatts

Max. Peak Power. 1 Watt
(3 μ sec Max.)

"S" Series Burn-in

Temperature. 125°C

Maximum

Case Temperature. 125°C