

T-74-09-01



- **Low Noise: +3.0dB**
- **Medium Output: +4.0dBm**
- **Various Package Options (see photo)**
Surface Mounted (SMTO-8), Flatpack with flange (FPF),
Connectorized (CAH), Connectorized Flatpack (CFP),
Flatpack (FP), and TO-8 (AH)

Measured in a 50-ohm system at +15 Vdc nominal

Characteristic	Typical	Guaranteed	Specifications
	25°C	0°C to +50°C	-54°C to +85°C
Frequency (MHz Min.)	10-500	10-500	10-500
Small Signal Gain (dB Min.)	+15.0	+14.0	+13.5
Gain Flatness (dB Max.)	< ±0.5	±0.8	±1.0
Noise Figure (dB Max.)	+3.0	+3.5	+4.0
Power Output @ 1 dB Compression (dBm Min.)	+4.0	+2.0	+1.5
Two Tone 3rd Order Intercept Point (dBm Min.)	+16.0	+14.0	+11.0
Two Tone 2nd Order Intercept Point (dBm Min.)	+22.0	+20.0	+18.0
One Tone 2nd Harmonic Intercept Point (dBm Min.)	+28.0	+26.0	+24.0
Input/Output VSWR (Max.)	<1.5:1	2.0:1	2.0:1
DC Current at 15 V (mA Max.)	+13.0	+18.0	+20.0

Ambient Operating Temperature -54°C to +100°C

Storage Temperature ... -62°C to +125°C

Maximum Case Temperature +125°C

Maximum DC Voltage +18.0V

Maximum Continuous RF Input Power +13.0dBm

Maximum Short Term RF Input Power +50.0 mW (1 minute Max.)

Maximum Peak Power +0.5W (3μseconds Max.)

"X" Series Burn-In Temperature +125°C

Weight +2.5 grams Max.

(For additional package configurations, see Section 9)

[illegible]

Technical drawing of a 2-watt, 100-Mc. 50-ohm SMA female connector. The drawing shows three views: a top view, a side view, and a front view.

Top View Dimensions:

- Overall width: 1.000
- Input port width: .460
- Output port width: .620
- Distance between input and output ports: .375 TYP. (2 PLACES)
- Mounting surface width: .500 (12.70)
- Mounting surface depth: .310 TYP
- DC BIAS and GROUND connections are shown on the right.

Side View Dimensions:

- Overall height: .810
- Mounting hole diameter: .095
- Mounting hole depth: .180
- Mounting hole spacing: .250
- Mounting hole diameter: .320
- Mounting hole depth: .460
- Mounting hole diameter: .320
- Mounting hole depth: .460
- Mounting hole diameter: .320
- Mounting hole depth: .460

Front View Dimensions:

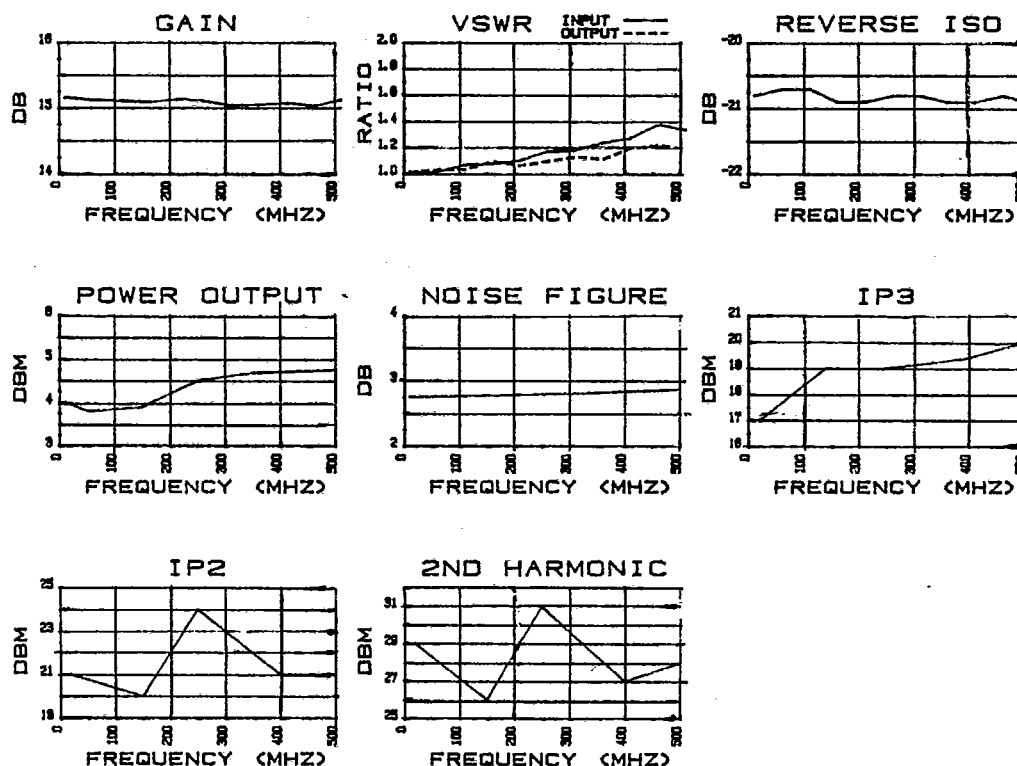
- Overall width: .810
- Mounting surface width: .500 (12.70)
- Mounting surface depth: .310 TYP
- Mounting surface width: .460
- Mounting surface depth: .310 TYP
- Mounting surface width: .460
- Mounting surface depth: .310 TYP

Labels:

- INPUT
- OUTPUT
- DC BIAS
- GROUND
- RF CONNECTORS SMA JACK (FEMALE) 2 PLACES
- MOUNTING SURFACE
- MOUNTING HOLE 2-58 UNC 2B x 0.15 DEEP THREADED INSERT (4 PLACES)

AH-53

Typical Performance



AH-53 13.2 mA @ 15.0Vdc Linear S-Parameters

FREQUENCY MHz	RETURN LOSS INPUT (S11)		TRANS. GAIN FORWARD (S21)		TRANS. GAIN REVERSE (S12)		RETURN LOSS OUTPUT (S22)	
	dB	ANG	dB	ANG	dB	ANG	dB	ANG
10.000	-43.9	-23.2	15.16	179.0	-20.80	1.8	-43.4	74.3
60.000	-41.9	-101.0	15.12	171.5	-20.70	-1.0	-36.4	148.8
110.000	-29.0	-72.8	15.11	165.3	-20.70	-3.3	-35.2	107.3
160.000	-28.0	-102.3	15.09	159.3	-20.90	-4.0	-26.9	78.5
210.000	-25.8	-90.8	15.14	153.2	-20.90	-5.7	-30.3	55.3
260.000	-21.8	-95.0	15.11	147.5	-20.80	-36.7	-26.7	31.5
310.000	-21.4	-99.3	15.04	141.3	-20.80	-7.2	-24.2	43.3
360.000	-19.3	-100.5	15.05	135.3	-20.90	-9.2	-25.5	23.0
410.000	-18.3	-97.5	15.08	129.0	-20.90	-10.0	-20.9	-1.8
460.000	-15.9	-101.5	15.03	123.0	-20.80	-11.5	-20.0	2.3
510.000	-16.8	-107.7	15.13	116.5	-20.90	-13.0	-21.2	-10.0

Deviation from Linear Phase, Gain, Group Delay, and VSWR

FREQUENCY (MHz)	VSWR INPUT	DEV. LIN. 0 (DEG.)	GAIN DEV. (dB)	GROUP DELAY (n-SEC)	VSWR OUTPUT
10.000	1.013	0.966	0.624	0.000	1.014
60.000	1.016	-0.395	0.024	0.417	1.031
110.000	1.074	-0.507	0.014	0.347	1.035
160.000	1.083	-0.368	-0.006	0.333	1.095
210.000	1.108	-0.230	0.044	0.333	1.063
260.000	1.177	0.159	0.014	0.319	1.097
310.000	1.186	0.048	-0.056	0.347	1.131
360.000	1.243	0.186	-0.046	0.333	1.112
410.000	1.277	0.075	-0.016	0.347	1.198
460.000	1.382	0.214	-0.066	0.333	1.222
510.000	1.338	-0.148	0.034	0.361	1.191