

1250 TO 1850 MHz VOLTAGE CONTROLLED OSCILLATOR

OC1850

0-15 V
+11.5 dBm
4.0 dB

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency	1250-1850 MHz	1250-1850 MHz	1250-1850 MHz
Tuning Voltage Limits			
Tuning Voltage at low end	0 V	0 V	0 V
Tuning voltage at high end	15 V	15 V	15 V
Power Output (Min.)	+11.5 dBm	+8.5 dBm	+8.0 dBm
Power Flatness^ (Max.)	3.0 dB	4.5 dB	4.5 dB
Modulation Sensitivity (Min.–Max.)	40 to 70 MHz/V	35 to 75 MHz/V	35 to 75 MHz/V
Modulation Sensitivity Ratio (Max.)	1.5:1	1.75:1	1.75:1
SSB Phase Noise (Max.)			
at 10 kHz offset	-78 dBc/Hz	-75 dBc/Hz	-75 dBc/Hz
at 100 kHz offset	-107 dBc/Hz	-105 dBc/Hz	-103 dBc/Hz
Frequency Drift (Max.)	—	40 MHz	50 MHz
Harmonics (Max.)	-16.0 dBc	-10.0 dBc	-10.0 dBc
Spurious (Max.)	-60.0 dBc	-60.0 dBc	-60.0 dBc
Frequency Pulling (Max.)			
Load VSWR = 1.67:1	8.0 MHz	10.0 MHz	10.0 MHz
Frequency Pushing (Max.)			
Vdc ± 0.5 V	4.0 MHz/V	8.0 MHz/V	8.0 MHz/V
Bias Voltage (Vdc)	15.0 V	15.0 V	15.0 V
DC Current (Max.)	57 mA	60 mA	60 mA

[^] Power Flatness is defined as power variation over frequency band at any given temperature.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 °C to +125 °C
Maximum Case Temperature	125 °C
Maximum DC Voltage	+17 V
Maximum Tuning Voltage	+20 V
Burn-In Temperature	+125 °C
Thermal Resistance¹ (θjc)	+40.1 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+34.3 °C

¹ Thermal resistance is based on total power dissipation. Ratings based on +25 °C.

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Top View Dimensions:

- Overall Diameter: $\phi .504$ [12.80]
- Central Raised Area Diameter: $\phi .450$ [11.42]
- Base Thickness: .18 [4.6]
- Pin Diameter: $\phi .018 \pm .002$ [0.46 $\pm$.05]
- Pin Quantity: 4 PLACES
- Product Marking: PRODUCT MARKING

Bottom View Dimensions:

- Overall Diameter: $\phi .300$ [7.62]
- Pin Diameter: $\phi .018 \pm .002$ [0.46 $\pm$.05]
- Pin Quantity: 4 PLACES
- Product Marking: PRODUCT MARKING

Electrical Connections:

- GROUND (CASE IS DC AND RF GROUND)
- RF OUT
- V_{TUNE}
- +DC

Other Dimensions:

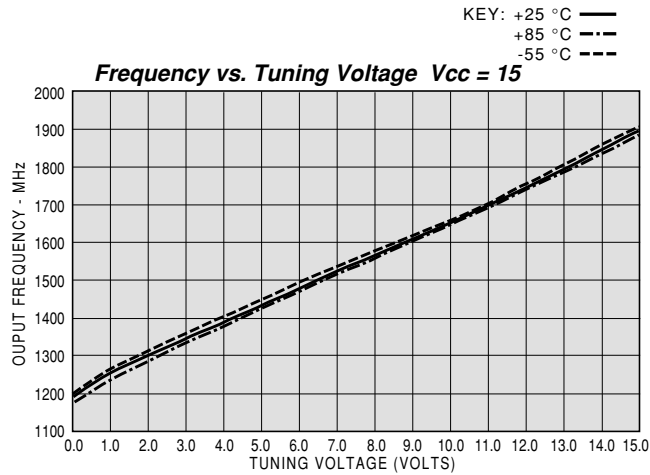
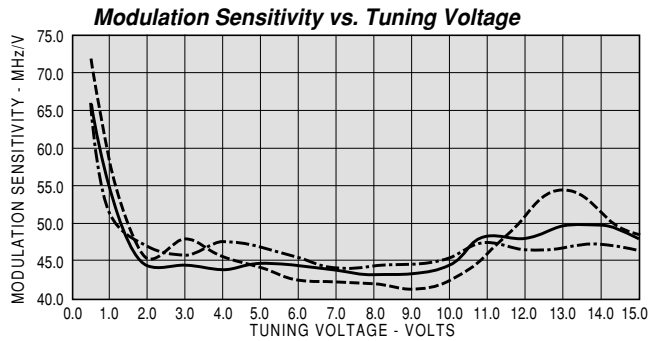
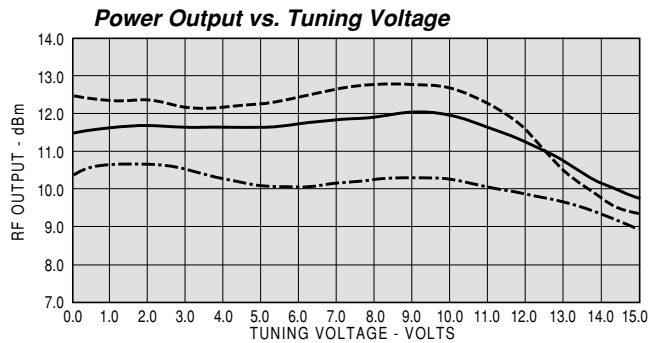
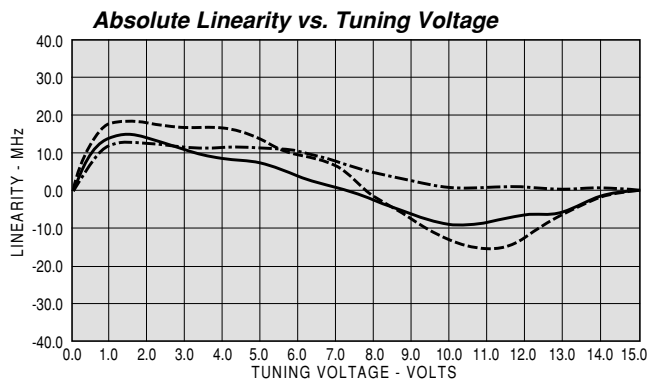
- Top Flange Thickness: .208 [5.28] MAX
- Pin Spacing: .03 [0.6]
- Pin Spacing: .03 [0.8]
- Pin Spacing: .03 [0.8]
- Pin Angle: 45° $\pm$ 3°

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Figure 1: Dimensions of the 100 MHz 100 W Power Amplifier. The figure includes three views: a top view, a side view, and a front view. The top view shows a square package with dimensions: .225 [5.72] (width), .250 [6.35] (height), .450 [11.43] (total width), and .450 [11.43] (total height). It also shows a .375 [9.53] (width of the central area) and .075 [1.91] (width of the central area). The side view shows a .016±.002 [0.41±0.05] (height) and .010±.002 [0.25±0.05] (height). The front view shows a .170 [4.32] (width) and .100 [2.54] (height). The package is labeled with 'DC', 'V TUNE', 'RF OUT', 'GND', and 'PRODUCT MARKING'. The mounting surface is labeled 'MOUNTING SURFACE (CASE IS DC AND RF GROUND)'. The package is labeled '4X .040±.012 [1.03±.30]' and '.008±.001 [0.20±.03]'.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: OC1850		Vcc= +15V	Vstr mA = 55.48	Vstop mA = 54.42
TUNING			MODULATION	
VOLTAGE	FREQ.	POWER	SENSITIVITY	LINEARITY
V	MHz	dBm	MHz/V	MHz
0.0	1193.77	11.49	0.00	0.00
0.5	1226.81	11.61	65.57	9.52
1.0	1254.57	11.62	55.36	13.86
1.5	1278.96	11.65	48.60	14.82
2.0	1300.68	11.68	44.36	13.68
2.5	1322.87	11.67	44.28	12.47
3.0	1345.15	11.64	44.47	11.36
3.5	1366.72	11.63	43.13	9.59
4.0	1388.82	11.61	43.84	8.15
4.5	1411.19	11.60	44.64	7.12
5.0	1433.59	11.62	44.59	6.07
5.5	1455.30	11.66	44.48	4.99
6.0	1477.51	11.71	44.34	3.81
6.5	1499.58	11.76	44.02	2.47
7.0	1521.40	11.82	43.56	0.91
7.5	1543.20	11.88	43.27	-0.81
8.0	1564.73	11.93	43.06	-2.63
8.5	1585.76	11.97	42.97	-4.45
9.0	1607.43	12.01	43.09	-6.26
9.5	1629.16	12.01	43.45	-7.88
10.0	1651.47	11.97	44.44	-9.01
10.5	1674.48	11.85	46.02	-9.34
11.0	1698.75	11.64	48.16	-8.60
11.5	1723.39	11.39	49.18	-7.36
12.0	1746.78	11.23	47.90	-6.76
12.5	1770.15	11.09	46.54	-6.84
13.0	1795.03	10.76	49.77	-5.30
13.5	1820.78	10.41	51.16	-3.04
14.0	1845.60	10.15	49.57	-1.60
14.5	1870.07	9.91	48.66	-0.61
15.0	1894.09	9.71	47.91	0.00

