

# PACIFIC MONOLITHICS

## DATA SHEET

### 0.8 TO 17.0 GHz VOLTAGE-CONTROLLED GaAs MMIC OSCILLATORS

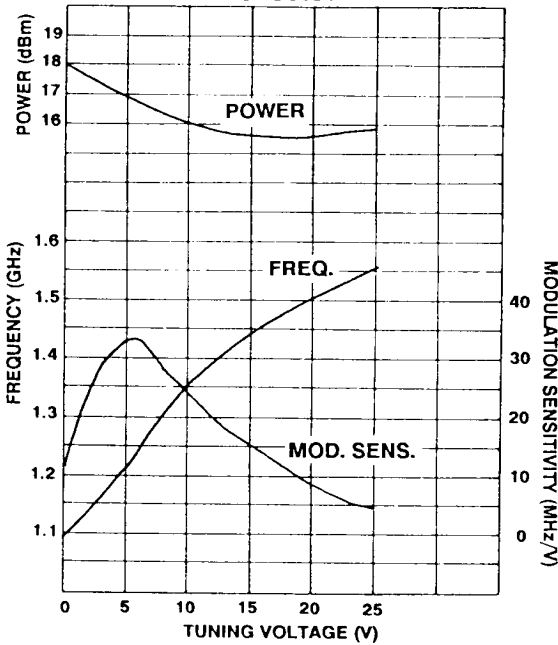
#### FEATURES

WIDE TUNING BANDWIDTHS  
UP TO 200 mW OUTPUT POWER  
HIGH LOAD ISOLATION  
INTERNAL VOLTAGE REGULATORS

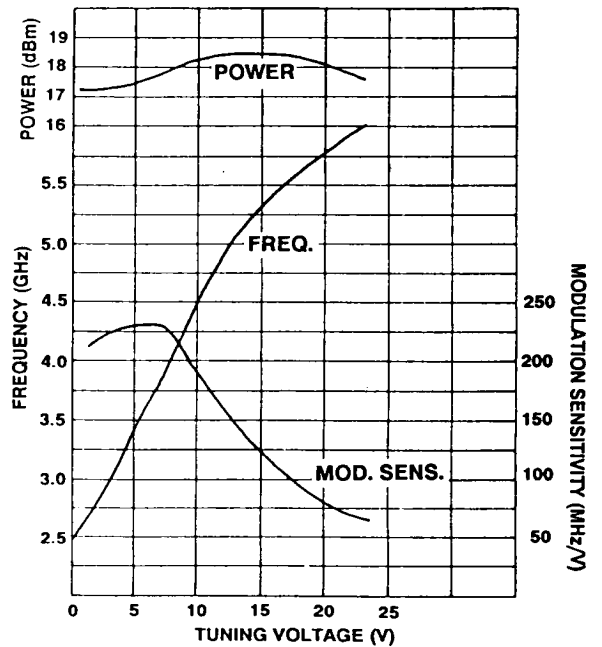
SURFACE-MOUNT CAPABILITY  
SMALL SIZE  
HIGH RELIABILITY

Pacific Monolithics offers a family of small, surface-mountable, highly reliable voltage-controlled oscillators. These oscillators use a negative-resistance ("-R") GaAs MMIC chip with spiral inductors and an external varactor diode. The "-R" GaAs MMIC chip contains a series feedback FET, interconnection matching circuits, buffer amplifier, and all the necessary bias network on a single 48 x 48 MIL area. The external varactor diode approach provides freedom of frequency and bandwidth selection, along with high Q characteristics. The monolithic VCOs can be easily interconnected with MMIC amplifiers, switches, mixers, prescalers, power dividers, and voltage regulators to achieve multifunction capabilities in a reduced size. The small, surface-mountable GaAs MMIC oscillators are ideal for most compact and densely packaged equipment designs. They are well suited for applications in built-in test equipment (BITE), compact phase-locked sources for EW systems, and low-cost commercial equipments, in addition to conventional oscillator applications. Hermetic sealing and MIL-STD 883 screening are available.

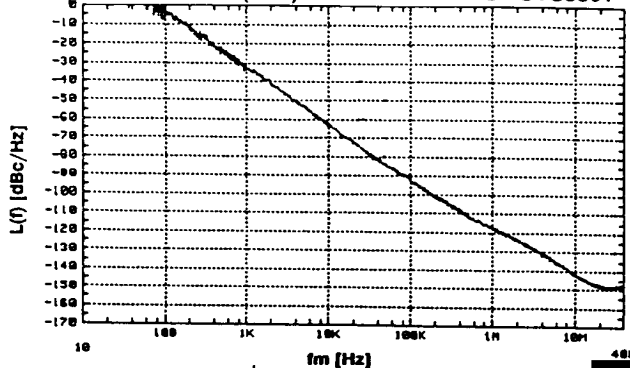
TYPICAL PERFORMANCE AT 25°C  
OVC0151



TYPICAL PERFORMANCE AT 25°C  
OVC5501



PHASE NOISE (SSB) MEASUREMENT OF OVC5501



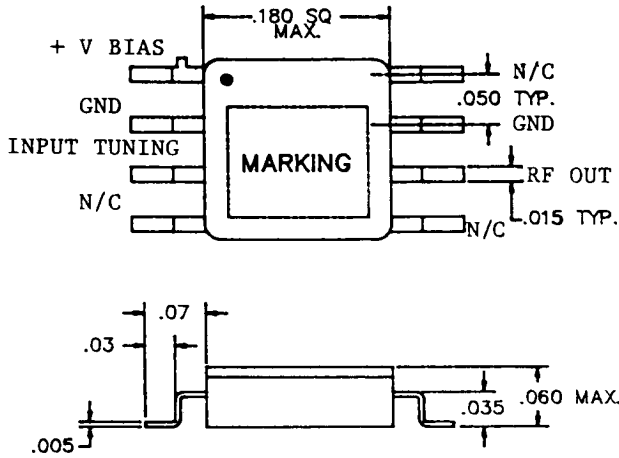
Solutions for Wireless Communications.

SPECIFICATIONS (GUARANTEED @ 25°C CASE TEMPERATURE)

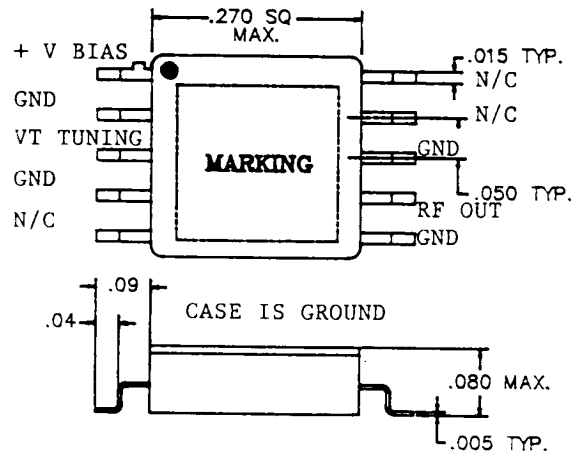
MODEL	FREQUENCY RANGE (GHz)		OUTPUT POWER (dBm)		OPERATING TEMPERATURE (°C) <sup>(1)</sup>		FREQUENCY DRIFT (MHz)		FREQUENCY PULLING [1.67:1 VSMR] (MHz)		FREQUENCY PUSHING (MHz)		HARMONICS (dBc)		SPURIOUS OUTPUT (dBc)		TUNING VOLTAGE RANGE (V)		TUNING PORT CAPACITANCE (pF)		SSB PHASE NOISE (dBc/Hz) @50KHz @100KHz		INPUT VOLTAGE (V)		INPUT POWER (mW)		PACKAGE STYLE <sup>(2)(3)</sup>		BLOCK DIAGRAMS		
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max		min	max
<b>ULTRA-SMALL VCOS</b>																															
OVC0270	2.0-2.7		+15		0 to +50		60		28		20		-10		-60		0.10-20		100		-81		-90		+8		65		"A"		
OVC0350	2.5-3.5		+15		0 to +50		60		36		20		-12		-60		0.10-20		100		-81		-90		+8		65		"A"		
OVC0400	3.0-4.0		+13		0 to +50		70		40		35		-10		-60		0.10-20		100		-81		-90		+8		65		"A"		
OVC0450	3.5-4.5		+13		0 to +50		75		44		35		-12		-60		0.10-20		100		-76		-85		+8		55		"A"		
OVC0500	4.0-5.0		+13		0 to +50		75		50		50		-10		-60		0.10-20		100		-76		-85		+8		55		"A"		
OVC0550	4.5-5.5		+13		0 to +50		85		54		50		-10		-60		0.10-20		100		-76		-85		+8		55		"A"		
OVC0600	5.0-6.0		+13		0 to +50		85		60		60		-12		-60		0.10-20		100		-76		-85		+8		55		"A"		
OVC0650	5.5-6.5		+13		0 to +50		85		64		60		-12		-60		0.10-20		100		-76		-85		+8		55		"A"		
<b>SMALL VCOS WITH VOLTAGE REGULATOR</b>																															
OVC0101	0.8-1.0		+14		0 to +50		50		10		0.50		-7		-60		0.10-20		150		-86		-95		+12		75		"B"		
OVC0131	1.0-1.3		+14		0 to +50		50		13		0.50		-7		-60		0.10-20		150		-86		-95		+12		75		"B"		
OVC0151	1.2-1.5		+14		0 to +50		50		15		0.50		-10		-60		0.10-20		150		-86		-95		+12		75		"B"		
OVC0181	1.4-1.8		+14		0 to +50		50		18		0.50		-10		-60		0.10-20		150		-86		-95		+12		75		"B"		
OVC0201	1.6-2.0		+14		0 to +50		50		20		0.50		-12		-60		0.10-20		150		-81		-90		+12		75		"B"		
OVC0231	1.8-2.3		+15		0 to +50		60		24		0.75		-10		-60		0.10-20		100		-81		-90		+12		75		"B"		
OVC0271	2.0-2.7		+15		0 to +50		60		28		0.75		-10		-60		0.10-20		100		-81		-90		+12		65		"B"		
OVC0351	2.5-3.5		+15		0 to +50		60		36		0.75		-12		-60		0.10-20		100		-81		-90		+12		65		"B"		
OVC0401	3.0-4.0		+15		0 to +50		60		40		0.75		-12		-60		0.10-20		100		-81		-90		+12		65		"B"		
OVC0451	3.5-4.5		+13		0 to +50		75		44		1.00		-10		-60		0.10-20		100		-76		-85		+12		65		"B"		
OVC0501	4.0-5.0		+13		0 to +50		75		50		1.00		-10		-60		0.10-20		100		-76		-85		+12		55		"B"		
OVC0551	4.5-5.5		+13		0 to +50		85		54		1.00		-10		-60		0.10-20		100		-76		-85		+12		55		"B"		
OVC0601	5.0-6.0		+13		0 to +50		85		60		1.00		-12		-60		0.10-20		100		-76		-85		+12		55		"B"		
OVC0651	5.5-6.5		+13		0 to +50		85		64		1.00		-12		-60		0.10-20		100		-76		-85		+12		55		"B"		
<b>SMALL MEDIUM POWER VCOS</b>																															
OVC0272	2.0-2.7		+23		0 to +50		60		2.8		0.75		-10		-60		0.10-20		100		-81		-90		+15		350		"D"		
OVC0352	2.5-3.5		+23		0 to +50		60		3.6		0.75		-10		-60		0.10-20		100		-81		-90		+15		350		"D"		
OVC0402	3.0-4.0		+23		0 to +50		60		4.0		0.75		-10		-60		0.10-20		100		-81		-90		+15		350		"D"		
OVC0452	3.5-4.5		+23		0 to +50		75		4.4		1.00		-10		-60		0.10-20		100		-76		-85		+15		350		"D"		
OVC0502	4.0-5.0		+23		0 to +50		75		5.0		1.00		-10		-60		0.10-20		100		-76		-85		+15		350		"D"		
OVC0552	4.5-5.5		+23		0 to +50		85		5.4		1.00		-10		-60		0.10-20		100		-76		-85		+15		350		"D"		
OVC0602	5.0-6.0		+23		0 to +50		85		6.0		1.00		-10		-60		0.10-20		100		-76		-85		+15		350		"D"		
OVC0652	5.5-6.5		+23		0 to +50		85		6.4		1.00		-10		-60		0.10-20		100		-76		-85		+15		350		"D"		
<b>WIDEBAND VCOS WITH VOLTAGE REGULATOR</b>																															
OVC5201	1.0-2.0		+10		0 to +50		75		20		1.00		-10		-60		0.10-20		200		-81		-90		+12		65		"B"		
OVC5301	1.5-3.0		+10		0 to +50		100		30		1.00		-7		-60		0.10-20		200		-81		-90		+12		65		"B"		
OVC5401	2.0-4.0		+13		0 to +50		100		40		1.00		-7		-60		0.10-20		150		-81		-90		+12		65		"B"		
OVC5501	2.5-5.0		+13		0 to +50		150		50		1.00		-10		-60		0.10-20		150		-76		-85		+12		65		"B"		
OVC5601	3.0-6.0		+13		0 to +50		150		60		1.00		-10		-60		0.10-20		150		-76		-85		+12		65		"B"		
OVC5701	4.0-7.0		+10		0 to +50		150		60		1.00		-12		-60		0.10-20		200		-71		-80		+12		65		"D"		
OVC5801	5.0-8.0		+10		0 to +50		150		60		1.00		-12		-60		0.10-20		200		-71		-80		+12		65		"D"		
OVC5901	6.0-9.0		+10		0 to +50		150		60		1.00		-12		-60		0.10-20		200		-71		-80		+12		65		"D"		
<b>WIDEBAND VCOS WITH VOLTAGE REGULATORS AND AMPLIFIERS</b>																															
OVC6202	1.0-2.0		+18		0 to +50		75		3.0		1.00		-10		-60		0.10-20		200		-81		-90		+15		180		"D"		
OVC6402	2.0-4.0		+20		0 to +50		100		4.0		1.00		-7		-60		0.10-20		150		-81		-90		+15		250		"D"		
OVC6502	2.5-5.0		+20		0 to +50		150		5.0		1.00		-10		-60		0.10-20		150		-76		-85		+15		250		"D"		
OVC6602	3.0-6.0		+20		0 to +50		150		6.0		1.00		-10		-60		0.10-20		150		-76		-85		+15		250		"D"		
OVC6702	4.0-7.0		+20		0 to +50		150		6.0		1.00		-12		-60		0.10-20		200		-71		-80		+15		250		"D"		
OVC6802	8.0-12.0		+10		0 to +50		300		6.0		1.00		-15		-60		0.10-20		200		-81		-70		+15		140		mini PMpac		
OVC6702	12.0-18.0		+10		0 to +50		400		6.0		1.00		-15		-60		0.10-20		200		-86		-85		+15		140		mini PMpac		

(1) Full military temperature (-54 to +105°C) available  
 (2) All units also available in connectorized package with removable SMA connectors (mini PMpac™)  
 (3) "A" and "B" packaged units also available in SMA connectorized test fixtures upon request

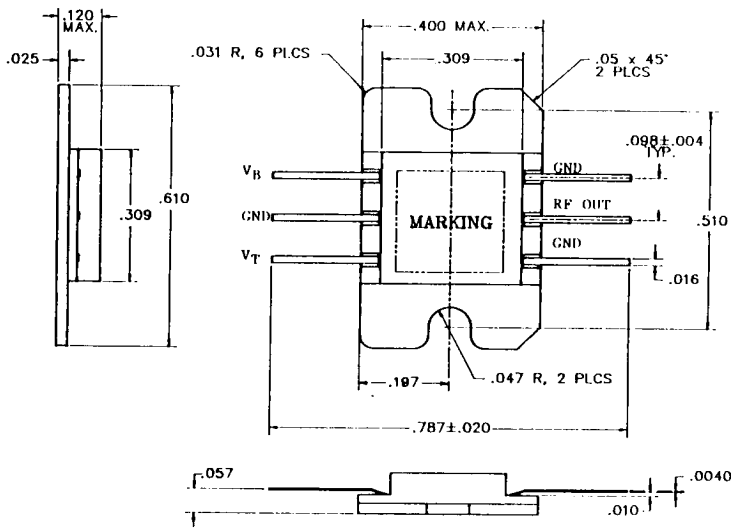
**"A" PACKAGE**



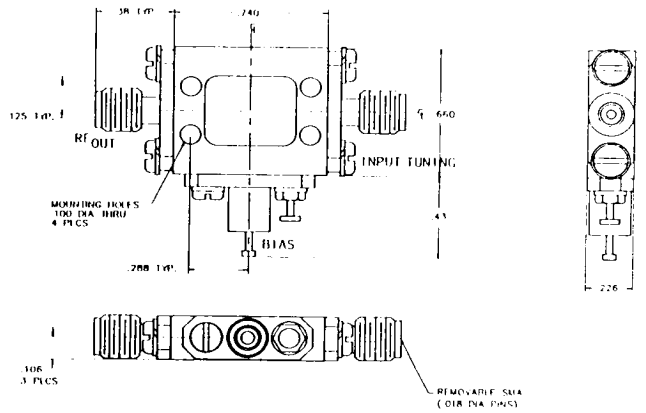
**"B" PACKAGE**



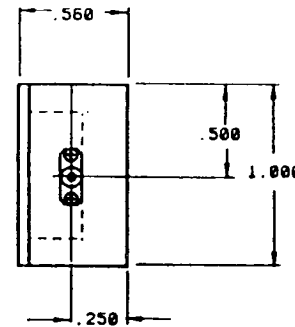
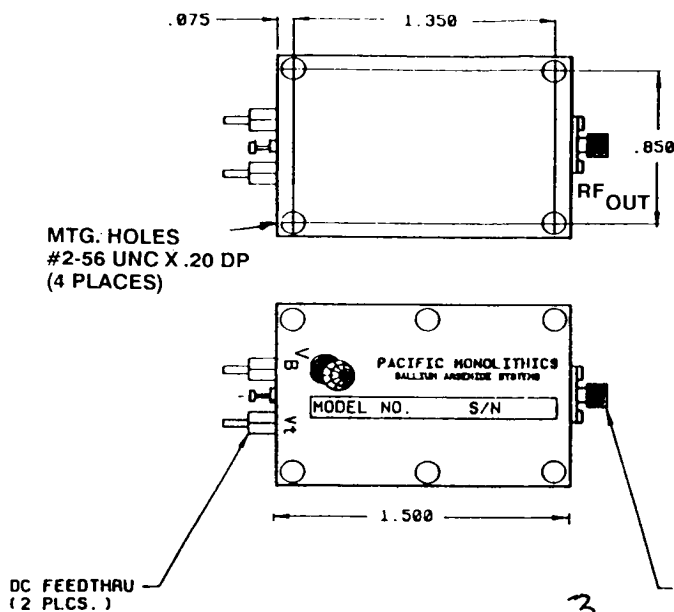
**"D" PACKAGE**



**PM MINIPac™**



**TEST FIXTURE FOR "A" AND "B"**



035885 ✓ R

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