

## Surface Mount Voltage Controlled Oscillator

## ROS-550PV+

### 5V Tuning for PLL ICs 450 to 550 MHz

#### Features

- wide frequency range
- low phase noise, -104 dBc/Hz at 10 kHz offset, typ.
- linear tuning, 30-60 MHz/V typ.
- 5V power supply
- aqueous washable

#### Applications

- aeronautical communication
- instrumentation
- UHF
- PLL circuitry



Generic photo used for illustration purposes only  
CASE STYLE: CK605

#### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Electrical Specifications

FREQUENCY (MHz)		POWER OUTPUT (dBm)	TUNING VOLTAGE (V)		PHASE NOISE (dBc/Hz) SSB at offset frequencies: Typ.				PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	TUNING SENSITIVITY (MHz/V)	HARMONICS (dBc)		3 dB MODULATION BANDWIDTH (MHz)	DC OPERATING POWER	
Min.	Max.	Typ.	Min.	Max.	1 kHz	10 kHz	100 kHz	1 MHz	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Voltage (V)	Current (mA) Max.
450	550	6	0.5	5.0	-81	-104	-124	-144	3.0	0.5	30-60	-15	—	8.0	5	15

#### Pin Connections

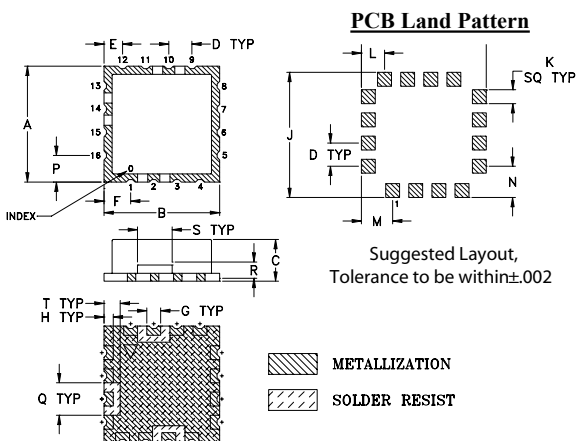
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

#### Maximum Ratings

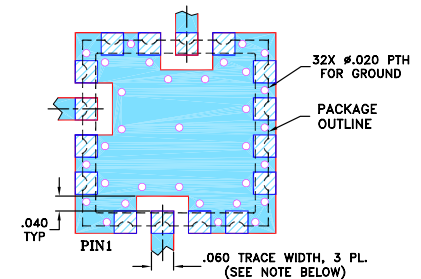
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+6V
Absolute Max. Tuning Voltage (Vtune)	+6V

all specifications: 50 ohm system  
Permanent damage may occur if any of these limits are exceeded.

#### Outline Drawing



#### Demo Board MCL PIN: TB-10 Suggested PCB Layout (PL-012)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

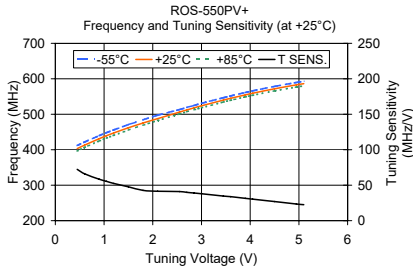
#### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060	.100	.135	.135	.115	.140	.070	.150	.070	grams
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72	1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0

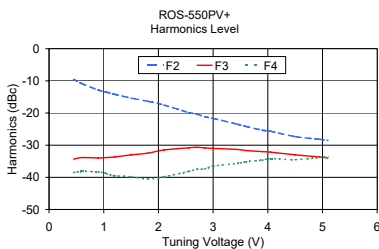
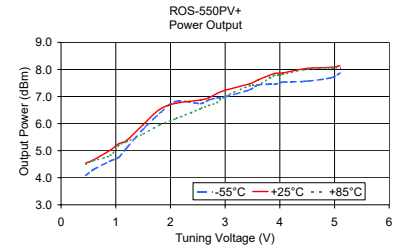
#### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.  
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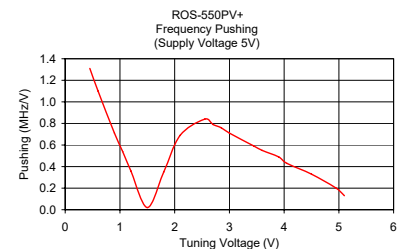




V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
0.45	72.32	411.96	403.14	396.60	4.08	4.54	4.50
0.60	66.08	421.84	413.05	406.67	4.31	4.67	4.64
0.90	58.45	439.76	431.13	424.69	4.62	5.02	4.82
1.05	55.48	448.07	439.45	432.94	4.75	5.25	5.19
1.20	52.48	455.96	447.33	440.73	5.10	5.38	5.33
1.50	47.74	470.83	462.00	455.31	5.79	5.96	5.61
1.80	42.69	484.59	475.23	469.06	6.37	6.52	5.95
2.10	41.48	497.27	487.56	482.29	6.82	6.75	6.18
2.55	41.03	513.32	506.26	501.08	6.74	6.87	6.55
2.70	39.88	519.27	512.24	507.04	6.87	6.95	6.67
2.85	38.97	525.09	518.09	512.85	6.95	7.11	6.77
3.00	37.98	530.76	523.78	518.51	6.99	7.23	7.00
3.45	34.69	546.80	539.92	534.52	7.25	7.47	7.40
3.60	33.88	551.86	545.00	539.56	7.43	7.61	7.42
3.90	31.45	561.42	554.61	549.06	7.45	7.85	7.78
4.05	30.37	565.95	559.16	553.56	7.53	7.87	7.82
4.50	26.96	578.58	571.83	565.99	7.57	8.04	8.00
4.95	23.46	589.72	582.94	576.79	7.70	8.08	8.07
5.10	22.50	593.12	586.31	580.04	7.87	8.14	8.05



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
0.45	-9.50	-34.34	-38.50	1.31
0.60	-10.84	-33.84	-38.17	1.10
0.90	-12.83	-34.00	-38.33	0.71
1.05	-13.50	-33.84	-38.84	0.54
1.20	-14.17	-33.67	-39.50	0.36
1.50	-15.34	-33.00	-39.84	0.02
1.80	-16.33	-32.50	-40.50	0.35
2.10	-17.50	-31.50	-39.83	0.69
2.55	-19.83	-30.83	-38.17	0.84
2.70	-20.33	-30.66	-37.50	0.79
2.85	-21.17	-30.84	-37.34	0.76
3.00	-21.67	-31.00	-36.50	0.71
3.45	-23.50	-31.33	-35.66	0.59
3.60	-24.17	-31.67	-35.17	0.55
3.90	-25.34	-32.00	-34.67	0.49
4.05	-25.66	-32.16	-34.16	0.43
4.50	-27.33	-33.00	-34.50	0.33
4.95	-28.17	-33.67	-33.84	0.20
5.10	-28.50	-34.00	-33.50	0.13



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