

# Surface Mount Voltage Controlled Oscillator

## ROS-2650+ ROS-2650

### Linear Tuning 2165 to 2650 MHz

#### Features

- wide frequency range, 2165 to 2650 MHz
- low phase noise. -101 dBc/Hz at 10 kHz offset
- linear tuning, 27-36 MHz/V typ.
- aqueous washable

#### Applications

- ISM



CASE STYLE: CK605  
PRICE: \$18.95 ea. QTY (5-49)

**+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)**

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)				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.		Min.	Max.	SSB at offset frequencies: Typ.							Typ.	Typ.		Typ.	Max.
		Typ.			1 kHz	10 kHz	100 kHz	1 MHz	Typ.	Typ.	Typ.	Typ.	—	Typ.		
2165	2650	5.0	0.5	19	-75	-101	-121	-141	5	1.0	27-36	-12	—	200	12	25

#### Pin Connections

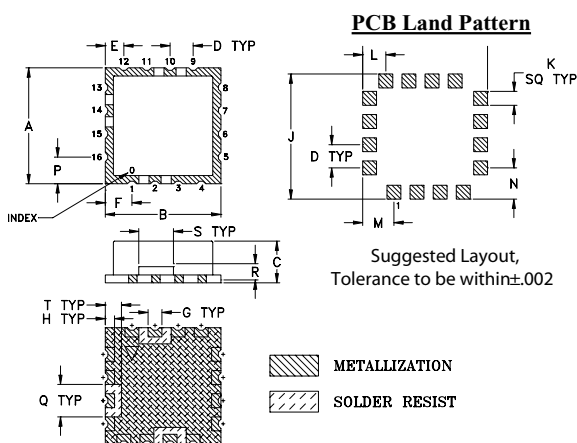
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

#### Maximum Ratings

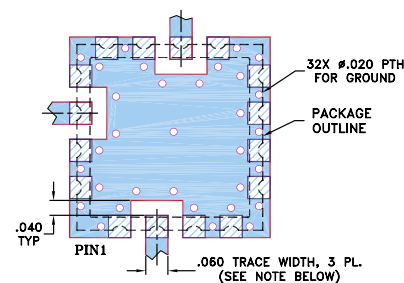
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+13V
Absolute Max. Tuning Voltage (Vtune)	+20V

all specifications: 50 ohm system

#### 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.
- Legend:  
 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



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



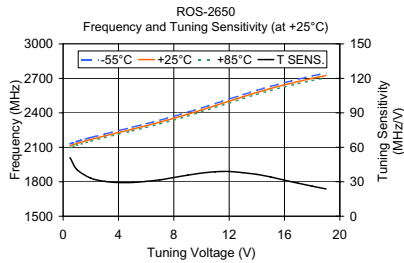
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RF/IF MICROWAVE COMPONENTS

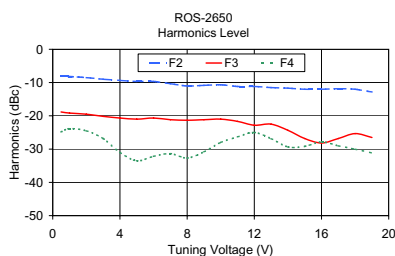
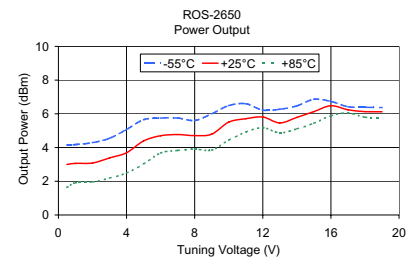
REV. C  
M105530  
ED-8541  
ROS-2650  
MM/TD/CP/AM  
070705  
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# Performance Data & Curves

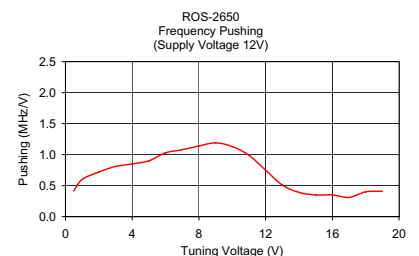
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V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
0.50	51.07	2130.76	2113.25	2097.92	4.15	3.00	1.64
1.00	40.59	2150.71	2133.55	2118.57	4.18	3.06	1.91
2.00	33.12	2184.89	2168.01	2153.14	4.29	3.08	1.96
3.00	30.35	2215.67	2198.87	2183.99	4.55	3.38	2.19
4.00	29.31	2245.17	2228.37	2213.40	5.07	3.69	2.49
5.00	29.37	2274.68	2257.67	2242.55	5.65	4.39	3.03
6.00	30.29	2304.97	2287.73	2272.34	5.75	4.70	3.68
7.00	31.69	2336.55	2319.05	2303.44	5.75	4.77	3.83
8.00	33.69	2369.95	2352.21	2336.24	5.61	4.71	3.91
9.00	35.75	2405.35	2387.43	2371.14	6.00	4.79	3.85
10.00	37.54	2442.51	2424.54	2408.13	6.49	5.51	4.44
11.00	38.72	2481.04	2462.93	2446.38	6.60	5.71	4.92
12.00	38.97	2519.91	2501.91	2485.21	6.22	5.81	5.18
13.00	37.93	2558.21	2540.17	2523.43	6.27	5.46	4.87
14.00	36.43	2595.45	2576.97	2559.82	6.47	5.79	5.11
15.00	34.18	2630.50	2611.72	2594.11	6.86	6.13	5.44
16.00	31.37	2663.11	2643.73	2625.64	6.74	6.48	5.89
17.00	28.69	2693.32	2673.08	2654.33	6.42	6.24	6.05
18.00	26.15	2720.94	2700.01	2680.62	6.39	6.13	5.80
19.00	23.79	2746.13	2724.40	2704.48	6.37	6.12	5.75



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
0.50	-8.16	-18.83	-24.83	0.42
1.00	-8.17	-19.17	-23.83	0.60
2.00	-8.50	-19.50	-24.50	0.72
3.00	-9.00	-20.16	-26.83	0.81
4.00	-9.34	-20.67	-31.00	0.85
5.00	-9.67	-21.00	-33.50	0.90
6.00	-9.67	-20.67	-32.17	1.03
7.00	-10.34	-21.17	-31.34	1.08
8.00	-11.00	-21.34	-32.67	1.14
9.00	-10.83	-21.17	-30.83	1.19
10.00	-10.66	-21.00	-28.00	1.13
11.00	-11.16	-21.66	-26.33	0.99
12.00	-11.17	-22.83	-25.00	0.75
13.00	-11.50	-22.50	-26.84	0.51
14.00	-11.67	-24.34	-29.34	0.39
15.00	-12.00	-26.83	-29.17	0.35
16.00	-12.00	-28.17	-27.83	0.35
17.00	-11.83	-26.83	-29.00	0.31
18.00	-12.00	-25.34	-30.00	0.40
19.00	-12.83	-26.50	-31.17	0.41



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