

Surface Mount

# Voltage Controlled Oscillator

# SOS-294LV-1SC9+

5V Tuning for PLL IC's 286 to 294 MHz



## Features

- linear tuning characteristics
- low phase noise
- low pushing & pulling
- small size 0.3" x 0.3"
- aqueous washable

CASE STYLE: FZ990  
PRICE: \$ 20.60 ea. QTY (5-49)

## Applications

- wireless communications
- wireless broadband access

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

## Electrical Specifications

MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies, kHz				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)	SENSITIVITY (MHz/V)	PORT CAP (pF)	MODULATION 3 dB BANDWIDTH (MHz)		Typ.	Typ.			Max.	Typ.
SOS-294LV-1SC9+	286	294	-5	-92	-115	-135	-155	0.3	3	7	135	25	-90	-11	-	0.03	0.1	3.3	17

## Pin Connections

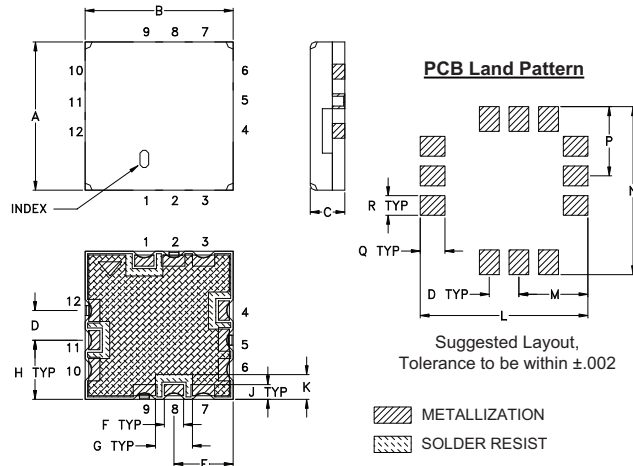
RF OUT	8
VCC	11
V-TUNE	1
GROUND	2,3,4,5,6,7,9,10,12

## Maximum Ratings

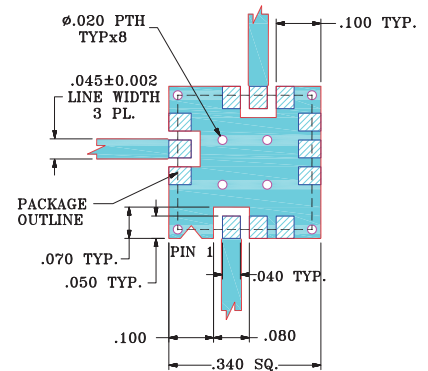
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	5V
Absolute Max. Tuning Voltage (Vtune)	5V
All specifications	50 ohm system

Permanent damage may occur if any of these limits are exceeded.

## Outline Drawing



## Demo Board MCL P/N: TB-271 Suggested PCB Layout (PL-143)



### NOTE:

1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .025"±.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	wt.
.300	.300	.100	.060	.120	.039	.075	.120	.030	.050	.340	.140	.340	.140	.050	.040	grams
7.62	7.62	2.54	1.52	3.05	0.99	1.91	3.05	0.76	1.27	8.64	3.56	8.64	3.56	1.27	1.02	.25



For detailed performance specs & shopping online see web site

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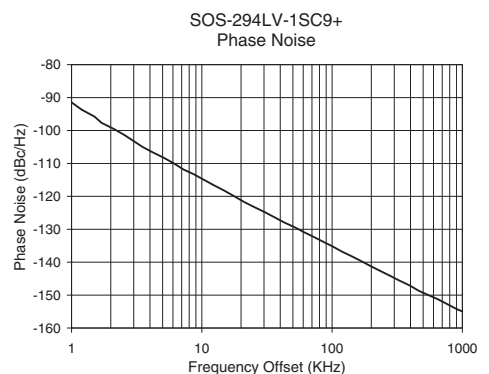
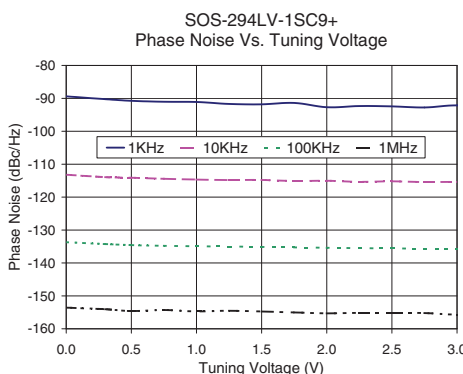
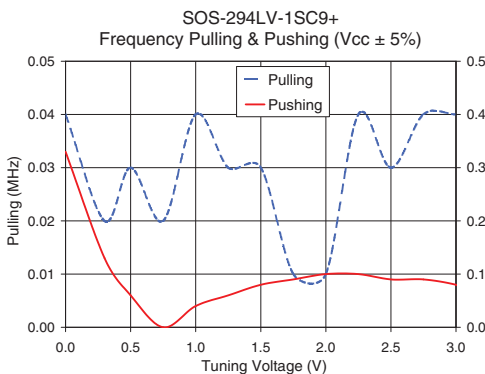
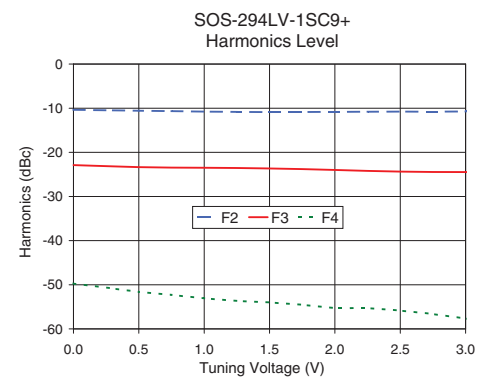
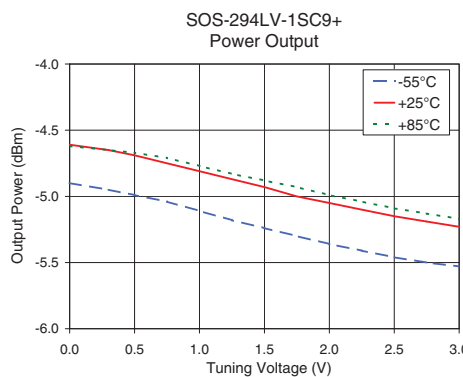
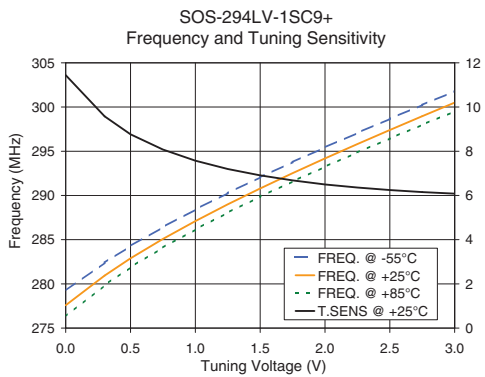
REV. OR  
M121016  
EDR-9430F1  
SOS-294LV-1SC9+  
RAV  
121009  
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# Performance Data & Curves\*

# SOS-294LV-1SC9+

V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 290 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	11.44	279.2	277.6	276.3	-4.90	-4.61	-4.62	11.75	-10.4	-22.9	-49.7	0.33	0.04	-89.4	-113.2	-133.7	-153.6	1.0	-91.45
0.30	9.58	282.4	280.9	279.9	-4.95	-4.65	-4.65	11.82	-10.5	-23.2	-50.9	0.13	0.02	-90.3	-113.9	-134.3	-154.1	2.1	-99.48
0.50	8.77	284.3	282.9	281.9	-4.99	-4.69	-4.67	11.85	-10.6	-23.4	-51.6	0.06	0.03	-90.8	-114.1	-134.6	-154.6	3.5	-104.99
0.75	8.08	286.4	285.1	284.1	-5.04	-4.75	-4.71	11.89	-10.7	-23.5	-52.3	0.00	0.02	-91.0	-114.4	-134.8	-154.3	6.1	-109.99
1.00	7.57	288.4	287.1	286.2	-5.11	-4.81	-4.77	11.93	-10.8	-23.5	-53.1	0.04	0.04	-91.1	-114.7	-134.9	-154.7	10.0	-114.63
1.25	7.20	290.3	289.0	288.1	-5.18	-4.87	-4.83	11.96	-10.8	-23.6	-53.7	0.06	0.03	-91.7	-114.8	-135.0	-154.5	21.1	-121.72
1.50	6.91	292.1	290.8	289.9	-5.24	-4.93	-4.88	11.99	-10.9	-23.7	-54.0	0.08	0.03	-91.8	-114.8	-135.1	-154.8	36.1	-126.36
1.75	6.68	293.8	292.5	291.6	-5.30	-5.00	-4.93	12.03	-10.9	-23.8	-54.5	0.09	0.01	-91.4	-115.1	-135.3	-155.0	60.5	-130.85
2.00	6.50	295.4	294.2	293.2	-5.36	-5.05	-4.99	12.05	-10.8	-24.0	-55.3	0.10	0.01	-92.7	-115.0	-135.4	-155.3	100.0	-135.14
2.25	6.36	297.1	295.8	294.9	-5.41	-5.10	-5.04	12.08	-10.8	-24.2	-55.3	0.10	0.04	-92.3	-115.4	-135.5	-155.1	199.9	-141.30
2.50	6.24	298.7	297.4	296.4	-5.46	-5.15	-5.09	12.10	-10.8	-24.4	-55.9	0.09	0.03	-92.4	-115.2	-135.6	-155.2	329.4	-145.63
2.75	6.15	300.2	299.0	298.0	-5.50	-5.19	-5.13	12.13	-10.8	-24.5	-56.6	0.09	0.04	-92.8	-115.4	-135.7	-155.2	552.7	-150.06
3.00	6.08	301.8	300.5	299.5	-5.53	-5.23	-5.17	12.15	-10.7	-24.5	-57.7	0.08	0.04	-92.1	-115.4	-135.7	-155.7	1000.0	-154.96

\*at 25°C unless mentioned otherwise



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