


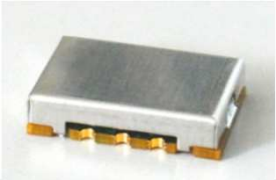
# EV1409EAN and EV1409SAN vs. EV-9100JG

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TD Product Development Department  
Microdevices Operations Division  
SEIKO EPSON CORPORATION

# GHz range VCSO EV-9100JG vs. EV1409EAN (LVPECL)

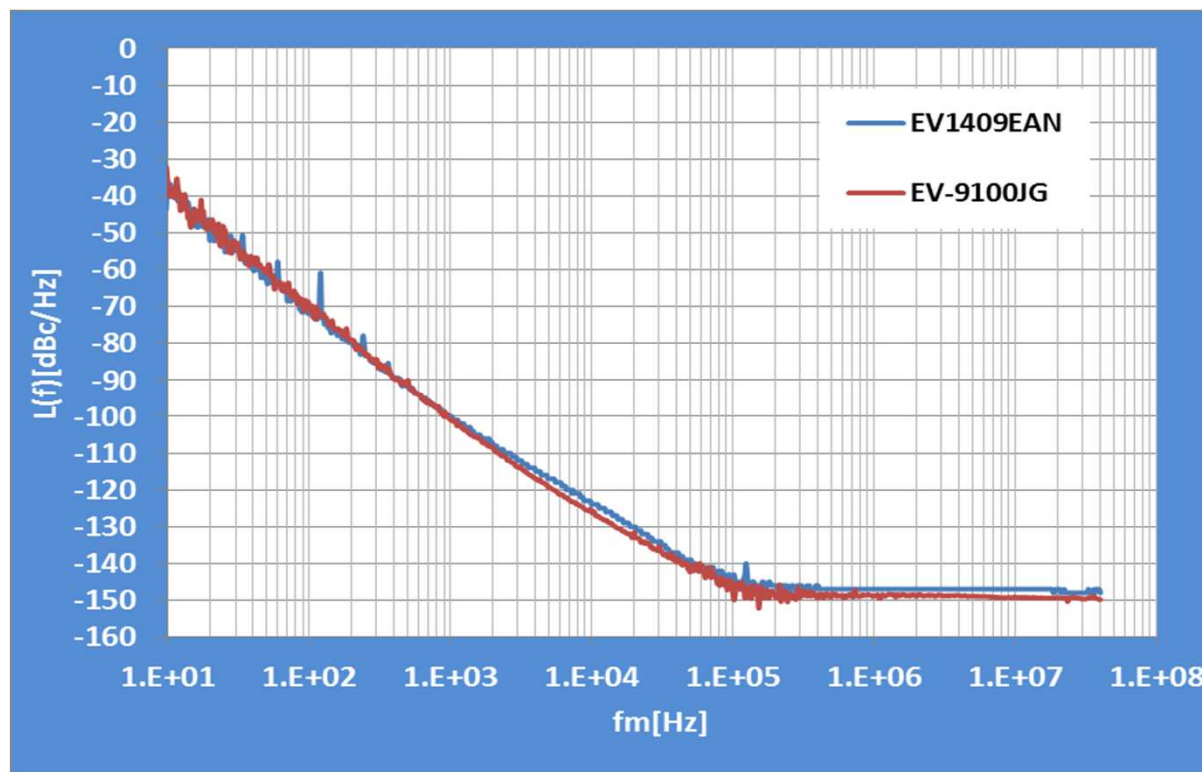
Items	EV-9100JG	EV1409EAN
Package size	13.9 × 9.6 × 4.5mm Typ. 14.0 × 9.8 × 4.7mm Max.	14.0 × 9.0 × t2.6mm Typ. 14.2 × 9.2 × t2.8mm Max.
Frequency	800MHz to 2500MHz	1000MHz to 3000MHz
Output voltage	VOH Vcc-1.30Min. (800M-2.0GHz) Vcc-1.40Min. (2.0G-2.5GHz)	VOL Vcc-1.65V Max. (1G-2.0GHz) Vcc-1.60V Max. (2.0G-2.5GHz)
	VOL Vcc-1.65V Max.(800M-2.0GHz) Vcc-1.60V Max.(2.0G-2.5GHz)	VOL Vcc-1.65V Max. (1G-2.0GHz) Vcc-1.60V Max. (2.0G-2.5GHz) Vcc-1.50V Max. (2.5G-3.0GHz)
Supply voltage	3.3V	
Current consumption	100mA Max.	90mA Max.
Operating temperature	-10°C to +85°C	
Pull range	-200 to +150ppm Typ.	-170ppm Max.(Vc=0V),+120ppm Min.(Vc=3.3V)
Frequency stability (incl. initial, Voltage, reflow, Temp. & 10yrs Aging)	-100 to +150ppm	-70 to +120ppm Max.
Absolute pull range	±50ppm Min.	+/-50ppm Min.
Phase Jitter (fm=12kHz to 20MHz)	100fs Max. (800MHz to 1700MHz) 100fs Max. (1700MHz to 2500MHz)	100fs Max. (1000MHz to 1700MHz) 50fs Max. (1700MHz to 3000MHz)
Appearance photograph		

# GHz range VCSO EV-9100JG vs. EV1409EAN (Sine wave) **EPSON** EXCEED YOUR VISION

Items	EV-9100JG	EV1409SAN
Package size	13.9 × 9.6 × 4.5mm Typ. 14.0 × 9.8 × 4.7mm Max.	14.0 × 9.0 × t2.6mm Typ. 14.2 × 9.2 × t2.8mm Max.
Frequency	800MHz to 2500MHz	1000MHz to 2500MHz
Output Level	0dBm Min.	0dBm Min.
Supply voltage	3.3V	
Current consumption	50 mA Typ. 100mA Max.	50 mA Typ. 90mA Max.
Operating temperature	-10°C to +85°C	
Pull range	-200 to +150ppm Typ.	-170ppm Max.(Vc=0V),+120ppm Min.(Vc=3.3V)
Frequency stability (incl. initial, Voltage, reflow, Temp. & 10yrs Aging)	-100 to +150ppm	-70 to +120ppm Max.
Absolute pull range	±50ppm Min.	+/-50ppm Min.
Phase Jitter (fm=12kHz to 20MHz)	50fs Max. (800MHz to 1700MHz) 50fs Max. (1700MHz to 2500MHz)	50fs Max. (1000MHz to 1700MHz) 30fs Max. (1700MHz to 3000MHz)
Appearance photograph		

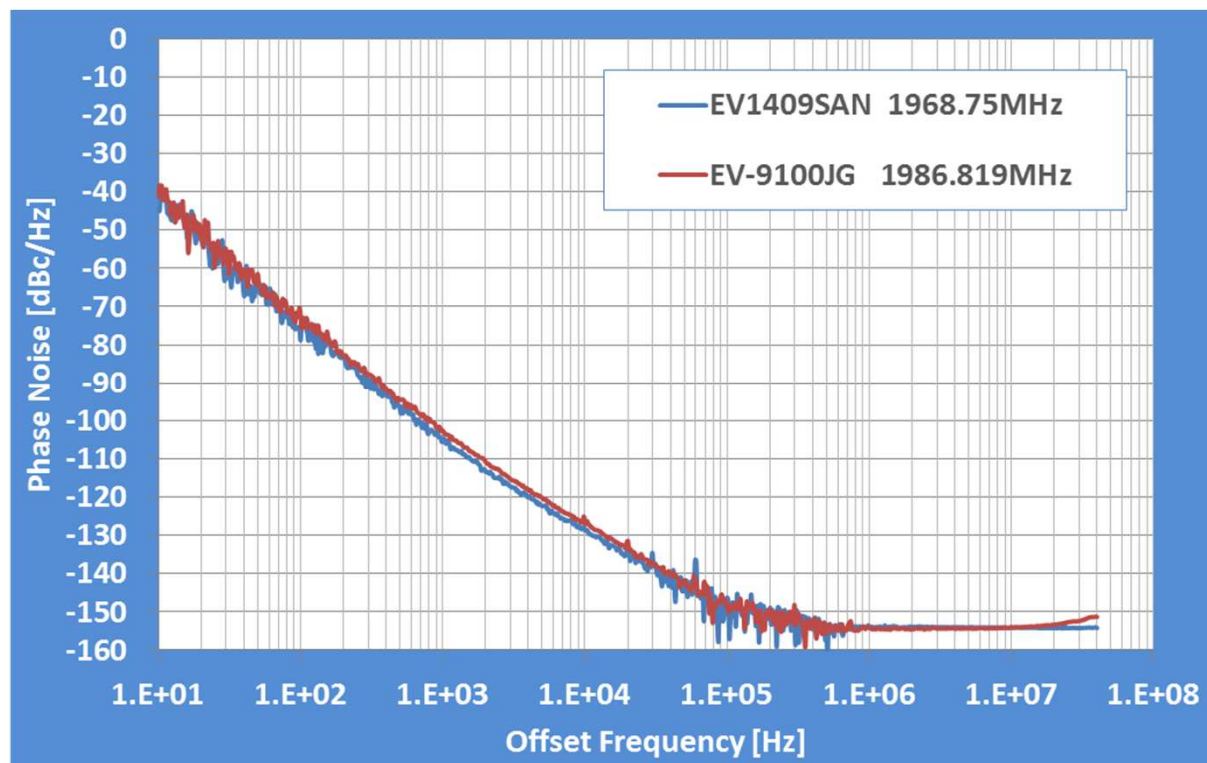
## Phase Noise & Jitter

	EV1409EAN	EV-9100JG
Carrier Frequency	1986.819Hz	1986.819MHz
Phase Jitter( 12k to 20MHz )	22fs	20fs



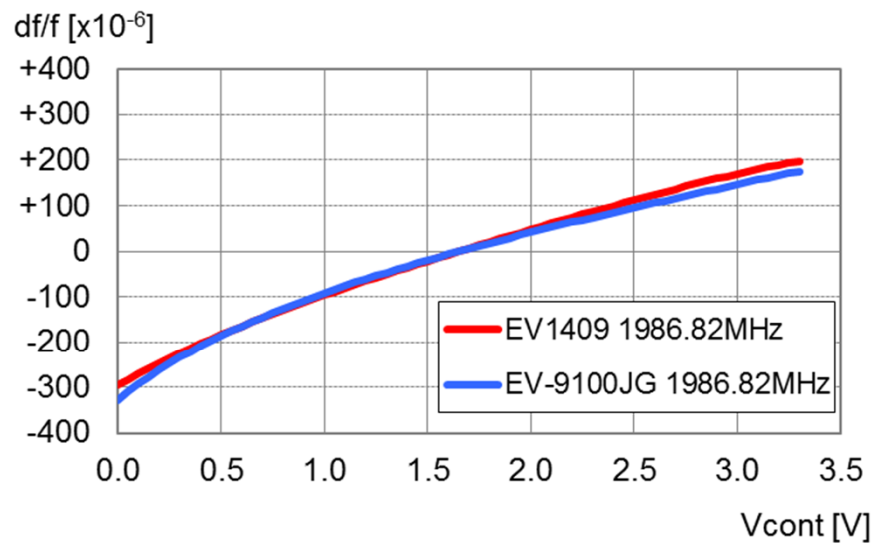
## Phase Noise & Jitter

	EV1409SAN	EV-9100JG
Carrier Frequency	1968.75Hz	1986.819MHz
Phase Jitter( 12k to 20MHz )	10fs	10fs

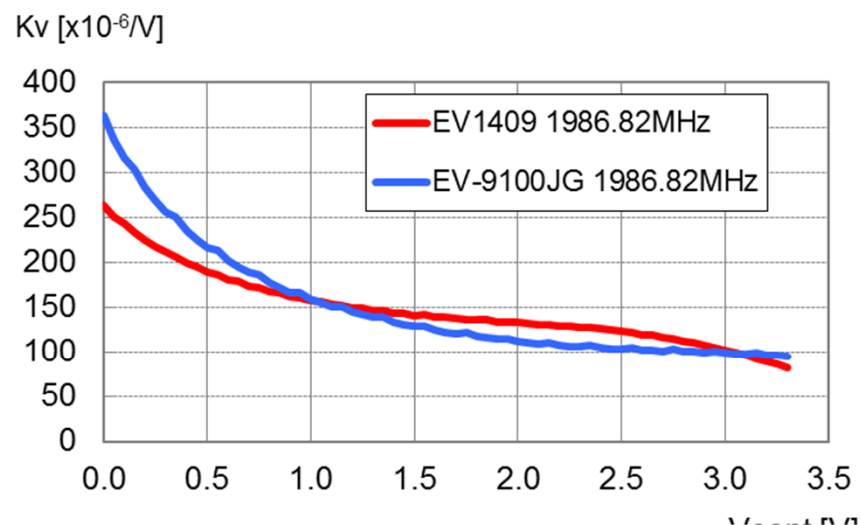


# Vc-Frequency Characteristics

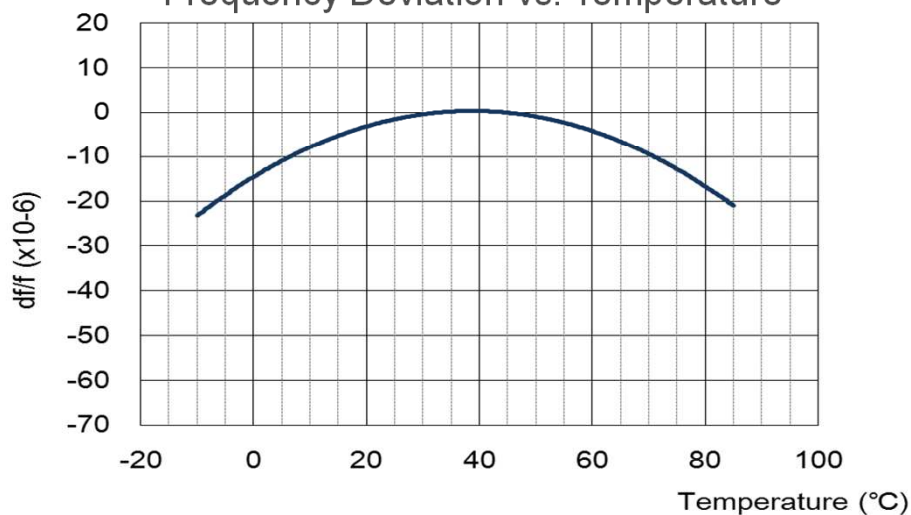
Frequency Deviation vs. Control Voltage



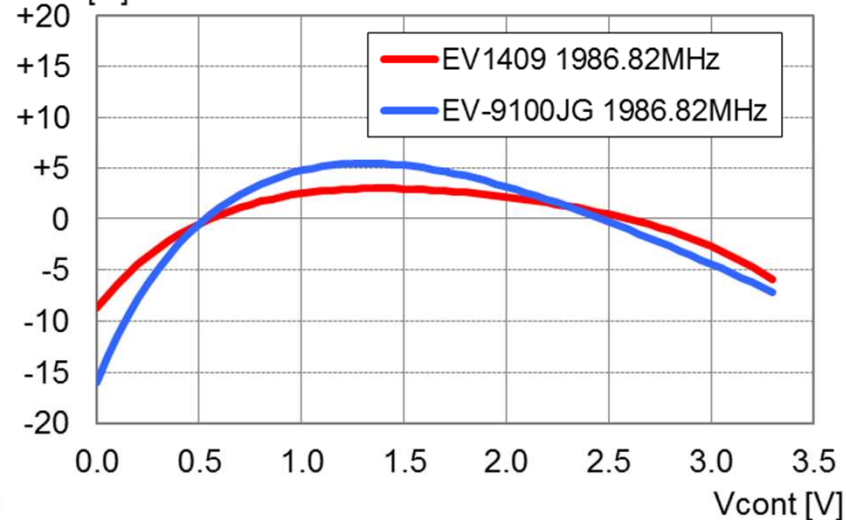
Frequency Deviation Sensitivity



Frequency Deviation vs. Temperature



LINEARITY [%]



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