PASTERNACK®
an INFINITE brand

The Engineer's Immediate RF Source

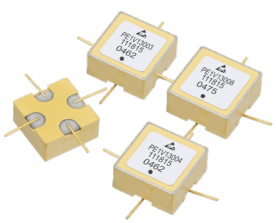
2022 Oscillators & Synthesizers

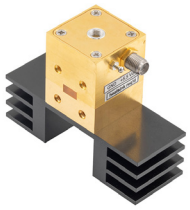
Broad Selection of Ready-to-Ship Oscillators and Synthesizers

Our lines of voltage controlled oscillators (VCOs), reference oscillators, phase locked oscillators, phase locked crystal oscillators, waveguide gunn oscillators, and frequency synthesizers cover select bands from 10 MHz to 43 GHz. These lines of oscillators are most commonly deployed in a variety of applications involving phase locked loops, frequency synthesizers, electronic jamming equipment, and function generators.

Pasternack's voltage controlled and gunn oscillators are a type of oscillator where the frequency of the output signal can be varied by adjusting the amplitude of the tuning voltage. Phase locked oscillators generate a stable and accurate output fixed frequency response that exhibits extremely low phase noise and spurious performance. Our lines of frequency synthesizers generate a variety of output frequencies as multiples of a single reference frequency. Several of these models offer the flexibility of internal or external references. The performance characteristics of these signal sources play a critical role in overall system performance.

Our comprehensive and growing portfolio of oscillators and synthesizers include models in surface mount and coaxial packaged versions available from stock. Some models have added features that include integrated buffer amplifiers, modulated input ports, hermetic sealing, and USB GUI and serial command control functions. All models cover full operational temperature ranges and several are MIL-SPEC compliant with environmental test conditions which include shock, vibration, and temperature cycle, for high-reliability applications.





Oscillators

0.175” Ultra Small Surface Mount Packaged VCO

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE2V000 	125 - 250	DC - 18	8	5	-107	-10	0.5	3	0.175 x 0.175 x 0.075
PE2V001 	200 - 400	DC - 5	6	3	-95	-14	4	7	0.175 x 0.175 x 0.075
PE2V002 	250 - 500	DC - 20	8	5	-107	-8	1	3	0.175 x 0.175 x 0.075
PE2V003 	500 - 1,000	DC - 19	6	10	-97	-10	4	10	0.175 x 0.175 x 0.075
PE2V004 	800 - 1,600	DC - 18	11	5	-93	-17	4	20	0.175 x 0.175 x 0.075
PE2V005 	1,000 - 2,000	DC - 20	10	12	-90	-7	2	20	0.175 x 0.175 x 0.075
PE2V006 	2,000 - 2,750	DC - 10	11	11	-86	-17	6	22	0.175 x 0.175 x 0.075
PE2V007 	2,000 - 3,000	DC - 20	9	12	-87	-14	2	24	0.175 x 0.175 x 0.075
PE2V008 	3,120 - 3,920	DC - 11	8	10	-87	-22	10	22	0.175 x 0.175 x 0.075
PE2V009 	3,570 - 4,580	DC - 11.5	8	12	-83	-17	4	15	0.175 x 0.175 x 0.075
PE2V010 	4,400 - 5,000	DC - 4.5	1	5	-85	-17	5	18	0.175 x 0.175 x 0.075
PE2V011 	4,800 - 5,200	DC - 3	1	3.3	-80	-20	4	25	0.175 x 0.175 x 0.075
PE2V012 	4,800 - 5,700	DC - 11	8	12	-84	-20	2	20	0.175 x 0.175 x 0.075
PE2V013 	5,180 - 5,805	DC - 10	6	11	-83	-20	5	25	0.175 x 0.175 x 0.075
PE2V014 	5,400 - 5,900	DC - 10	8.5	11	-84	-25	5	25	0.175 x 0.175 x 0.075

* Phase Noise measured at 10 KHz offset frequency

0.175” Ultra Small Surface Mount Packaged VCO Continued

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE2V015 	6,100 - 7,000	DC - 10	5.5	5	-76	-30	5	15	0.175 x 0.175 x 0.075
PE2V016 	7,390 - 8,060	DC - 9	4	5	-75	-22	10	40	0.175 x 0.175 x 0.075
PE2V017 	8,300 - 9,100	DC - 10	1	5	-73	-25	5	20	0.175 x 0.175 x 0.075
PE2V018 	9,000 - 10,000	DC - 11	7	12	-78	-30	15	50	0.175 x 0.175 x 0.075
PE2V019 	10,000 - 11,000	DC - 11	4	12	-72	-40	15	70	0.175 x 0.175 x 0.075

0.5” Surface Mount Packaged VCO

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V11000 	10 - 20	DC - 20	10	15	-120	-11	0.02	0.05	0.5 x 0.5 x 0.13
PE1V11001 	18 - 30	DC - 12	12	12	-120	-13	0.03	0.07	0.5 x 0.5 x 0.13
PE1V11002 	25 - 50	DC - 15	11.5	15	-120	-12	0.05	0.03	0.5 x 0.5 x 0.13
PE1V11003 	30 - 60	DC - 15	11	15	-119	-14	0.05	0.05	0.5 x 0.5 x 0.13
PE1V11004 	40 - 80	DC - 20	12	15	-117	-14	0.05	0.05	0.5 x 0.5 x 0.13
PE1V11005 	40 - 100	DC - 20	11.5	15	-118	-14	0.2	0.1	0.5 x 0.5 x 0.13
PE1V11006 	50 - 100	DC - 20	12	15	-115	-12	0.05	0.1	0.5 x 0.5 x 0.13
PE1V11007 	60 - 120	DC - 18.5	11	15	-114	-20	0.2	0.1	0.5 x 0.5 x 0.13

* Phase Noise measured at 10 KHz offset frequency

0.5” Surface Mount Packaged VCO Continued

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V11008 	75 - 150	DC - 18	11	15	-110	-20	0.2	0.4	0.5 x 0.5 x 0.13
PE1V11009 	100 - 200	DC - 18	11	15	-113	-12	0.2	0.1	0.5 x 0.5 x 0.13
PE1V11010 	150 - 300	DC - 20	11	15	-108	-14	1	2	0.5 x 0.5 x 0.13
PE1V11011 	200 - 400	DC - 20	11	15	-106	-14	0.4	0.2	0.5 x 0.5 x 0.13
PE1V11012 	300 - 400	DC - 9	11	15	-102	-18	0.6	0.5	0.5 x 0.5 x 0.13
PE1V11013 	400 - 600	DC - 15	11	15	-102	-15	1	1.5	0.5 x 0.5 x 0.13
PE1V11014 	400 - 800	DC - 9	8	5	-96	-14	3	1.3	0.5 x 0.5 x 0.13
PE1V11015 	500 - 900	DC - 11.5	12	12	-95	-14	1.5	1.5	0.5 x 0.5 x 0.13
PE1V11016 	600 - 1,000	DC - 20	12.5	15	-96	-15	0.8	0.7	0.5 x 0.5 x 0.13
PE1V11017 	800 - 1,200	DC - 20	11.5	15	-95	-12	0.8	2.5	0.5 x 0.5 x 0.13
PE1V11018 	1,200 - 1,800	DC - 20	11	15	-89	-12	0.5	3	0.5 x 0.5 x 0.13
PE1V11019 	1,350 - 1,650	DC - 18	10	15		-12	1.5		0.5 x 0.5 x 0.13
PE1V11020 	1,500 - 2,100	DC - 18	10	15		-12			0.5 x 0.5 x 0.13
PE1V11021 	1,500 - 2,500	DC - 16	10	15		-12			0.5 x 0.5 x 0.13
PE1V11022 	2,000 - 2,750	DC - 10	7	11		-12			0.5 x 0.5 x 0.13

* Phase Noise measured at 10 KHz offset frequency

0.5” Surface Mount Packaged VCO Continued

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V11023 	2,570 - 3,300	DC - 10	5	11		-15			0.5 x 0.5 x 0.13
PE1V11024 	3,000 - 3,500	DC - 10	10	11	-81	-16	2.5	12	0.5 x 0.5 x 0.13
PE1V11025 	3,120 - 3,870	DC - 10	5	11		-15			0.5 x 0.5 x 0.13
PE1V11026 	4,000 - 5,000	DC - 15	8	15		-18			0.5 x 0.5 x 0.13
PE1V11027 	4,260 - 5,000	DC - 10	7	11		-18			0.5 x 0.5 x 0.13

0.5” Surface Mount Packaged VCO w/ Modulation Input Port

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V12000 	130 - 175	DC - 15	6.5	5	-125	-25	0.1	0.2	0.5 x 0.5 x 0.162
PE1V12001 	195 - 240	DC - 15	8.5	5	-125	-15	0.2	0.05	0.5 x 0.5 x 0.162
PE1V12002 	243 - 270	DC - 9.5	10	8	-120	-38	0.05	0.2	0.5 x 0.5 x 0.162
PE1V12003 	260 - 280	DC - 10	8	5	-123	-15	0.1	0.1	0.5 x 0.5 x 0.162
PE1V12004 	380 - 400	DC - 10	4.5	5	-124	-20	0.2	0.1	0.5 x 0.5 x 0.162
PE1V12005 	400 - 430	DC - 10	3.5	5	-123	-25	0.1	0.05	0.5 x 0.5 x 0.162
PE1V12006 	430 - 470	DC - 10	3.5	5	-122	-25	0.2	0.05	0.5 x 0.5 x 0.162
PE1V12007 	465 - 525	DC - 15	3.5	5	-122	-18	0.1	0.2	0.5 x 0.5 x 0.162

* Phase Noise measured at 10 KHz offset frequency

0.5” Surface Mount Packaged VCO w/ Modulation Input Port Continued

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V12008 	650 - 700	DC - 10	7.5	8	-121	-25	0.2	0.1	0.5 x 0.5 x 0.162

0.5” Surface Mount Packaged VCO w/ Integrated Buffer Amps

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V14000 	510 - 550	DC - 3.5	6.5	5	-106	-22	1.5	0.8	0.5 x 0.5 x 0.125
PE1V14001 	950 - 1,100	DC - 4.5	9	5	-104	-18	0.8	0.3	0.5 x 0.5 x 0.125
PE1V14002 	1,570 - 1,850	DC - 4.5	5	5	-101	-18	1.8	0.2	0.5 x 0.5 x 0.125
PE1V14003 	1,600 - 3,200	DC - 20	6	5	-89	-14	4	10	0.5 x 0.5 x 0.125
PE1V14004 	1,700 - 1,850	DC - 4.5	3.5	5	-100	-40	0.8	0.2	0.5 x 0.5 x 0.125
PE1V14005 	1,800 - 2,000	DC - 4.5	4.5	5	-100	-20	1.5	0.6	0.5 x 0.5 x 0.125
PE1V14006 	1,900 - 2,100	DC - 4.5	4.5	5	-102	-40	3	0.3	0.5 x 0.5 x 0.125
PE1V14007 	2,100 - 2,300	DC - 4.5	4.5	5	-101	-35	2.5	0.3	0.5 x 0.5 x 0.125
PE1V14008 	2,800 - 3,000	DC - 4.5	-2	5	-93	-25	2	0.8	0.5 x 0.5 x 0.125
PE1V14009 	4,130 - 4,350	DC - 8	7.5	8	-98	-30	4	6	0.5 x 0.5 x 0.125
PE1V14010 	4,770 - 5,010	DC - 7.5	5	8	-98	-20	4	4	0.5 x 0.5 x 0.125

* Phase Noise measured at 10 KHz offset frequency

0.5” Surface Mount Packaged VCO w/ Low Noise

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V15000 	305 - 425	DC - 19.5	8	5	-117	-40	1.5	4	0.5 x 0.5 x 0.125
PE1V15001 	850 - 900	DC - 4.5	1.5	5	-113	-45	0.3	0.2	0.5 x 0.5 x 0.125

0.5” Hermetically Sealed MIL Grade Surface Mount Packaged VCO

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V13000 	10 - 20	DC - 20	10	15	-120	-11	0.02	0.05	0.5 x 0.5 x 0.215
PE1V13001 	18 - 30	DC - 12	12	12	-120	-13	0.03	0.07	0.5 x 0.5 x 0.215
PE1V13002 	25 - 50	0.5 - 20	11.5	15	-114	-10	0.1	0.1	0.5 x 0.5 x 0.215
PE1V13003 	30 - 60	DC - 15	11	15	-119	-14	0.05	0.05	0.5 x 0.5 x 0.215
PE1V13004 	40 - 80	DC - 20	12	15	-117	-14	0.05	0.05	0.5 x 0.5 x 0.215
PE1V13005 	40 - 100	DC - 20	11.5	15	-118	-14	0.2	0.1	0.5 x 0.5 x 0.215
PE1V13006 	50 - 100	DC - 20	12	15	-115	-12	0.05	0.1	0.5 x 0.5 x 0.215
PE1V13007 	60 - 120	DC - 18.5	11	15	-114	-20	0.2	0.1	0.5 x 0.5 x 0.215
PE1V13008 	75 - 150	DC - 18	11	15	-110	-20	0.2	0.4	0.5 x 0.5 x 0.215
PE1V13009 	100 - 200	DC - 18	11	15	-113	-12	0.2	0.1	0.5 x 0.5 x 0.215
PE1V13010 	150 - 300	DC - 20	11	15	-108	-14	1	2	0.5 x 0.5 x 0.215

* Phase Noise measured at 10 KHz offset frequency

0.5” Hermetically Sealed MIL Grade Surface Mount Packaged VCO Continued

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ. (MHz)	Pulling Typ. (MHz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V13011 	200 - 400	DC - 20	11	15	-106	-14	0.4	0.2	0.5 x 0.5 x 0.215
PE1V13012 	400 - 800	DC - 9	8	5	-96	-14	3	1.3	0.5 x 0.5 x 0.215
PE1V13013 	1,200 - 1,800	DC - 20	11	15	-89	-12	0.5	3	0.5 x 0.5 x 0.215
PE1V13014 	3,000 - 3,500	DC - 10	10	11	-81	-16	2.5	12	0.5 x 0.5 x 0.215
PE1V13015 	3,700 - 4,350	DC - 7.5	4	8	-83	-25	6	15	0.5 x 0.5 x 0.215

Connectorized Packaged VCO w/ Field Replaceable Connectors

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ.(MHz)	Pulling Typ.(MHz)	Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V34000 	4,000 - 8,000	DC - 18	20	12	-75	-10	0.2	1	SMA Female	0.64 x 0.7 x 0.29
PE1V34001 	5,000 - 10,000	DC - 20	20	12	-64	-15	0.2	1	SMA Female	0.64 x 0.7 x 0.29
PE1V34003 	38,400 - 43,200	DC - 13	13	5	-74	-30	40	0.01	2.4mm Female	0.65 x 0.65 x 0.23
PE1V31001 	25 - 50	0.5 - 15	11.5	15	-120	-12	0.05	0.03	SMA Female	0.95 x 0.95 x 0.285
PE1V31002 	30 - 60	0.5 - 15	11	15	-119	-14	0.05	0.05	SMA Female	0.95 x 0.95 x 0.285
PE1V31003 	40 - 80	0.5 - 20	12	15	-117	-14	0.05	0.05	SMA Female	0.95 x 0.95 x 0.285
PE1V31005 	50 - 100	0.5 - 20	12	15	-115	-12	0.05	0.1	SMA Female	0.95 x 0.95 x 0.285
PE1V31015 	230 - 290	0.5 - 4.5	2	12	-107	-8.5			SMA Female	

* Phase Noise measured at 10 KHz offset frequency

Connectorized Packaged VCO w/ Field Replaceable Connectors Continued

PE P/N	Frequency (MHz)	Tuning Voltage (Vdc)	Output Power Typ. (dBm)	Supply Voltage (Vdc)	Phase Noise* (dBc/Hz)	2nd Harmonics Typ. (dBc)	Pushing Typ.(MHz)	Pulling Typ.(MHz)	Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE1V31017 	620 - 660	0.5 - 4.5	0	12	-110	-13		2	SMA Female	
PE1V31016 	500 - 600	0.5 - 4.5	-2	12	-105	-20			SMA Female	
PE1V31018 	850 - 890	DC - 5	8	12	-99	-5		5	SMA Female	
PE1V31019 	900 - 960	0.5 - 4	5.5	12	-110	-15		5	SMA Female	
PE1V31020 	1,070 - 1,210	0.5 - 4.5	1.5	12	-109	-16		1	SMA Female	
PE1V31021 	1,435 - 1,650	0.5 - 5	7	12	-90	-7		35	SMA Female	
PE1V31022 	1,550 - 1,850	0.25 - 4.75	1.5	12	-99	-20		2	SMA Female	
PE1V31023 	1,700 - 1,850	0.5 - 4.5	0	12	-96	-15		13	SMA Female	
PE1V31024 	2,165 - 2,360	0.5 - 10	5	12	-99	-10		10	SMA Female	
PE1V31025 	2,300 - 2,450	0.5 - 4.5	3	12	-101	-15		2	SMA Female	
PE1V31026 	2,400 - 2,800	1 - 11	9	12	-92	-10		50	SMA Female	
PE1V31027 	3,200 - 3,400	0.5 - 4.5	5	12	-88	-15		25	SMA Female	
PE1V31028 	4,245 - 4,335	0.5 - 8	0.5	12	-87	-13		10	SMA Female	
PE1V31029 	5,220 - 5,420	0.5 - 4.5	-1	12	-83	-25		10	SMA Female	

* Phase Noise measured at 10 KHz offset frequency

Reference Oscillators

PE P/N	Loop Type	Output Freq. (MHz)	Reference Type	Output Power Typ. (dBm)	2nd Harmonic Typ. (dBc)	Spurious Typ. (dBc)	Phase Noise @10kHz Offset Typ. (dBc/Hz)	Supply Voltage (Vdc)	Package Type	Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE19XR1000 	Free Running	10	Internal	+7	-20	-70	-145	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XR1003 	Free Running	10	Internal	+7	-25	-70	-150	12	Connectorized	SMA	2 x 1.5 x 0.6
PE19XR1001 	Free Running	50	Internal	+7	-20	-70	-150	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XR1004 	Free Running	50	Internal	+7	-25	-70	-150	12	Connectorized	SMA	2 x 1.5 x 0.6
PE19XR1002 	Free Running	100	Internal	+7	-20	-70	-155	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XR1005 	Free Running	100	Internal	+7	-25	-70	-150	12	Connectorized	SMA	2 x 1.5 x 0.6

Phase Locked Oscillators

PE P/N	Loop Type	Output Frequency (MHz)	Reference Type	Reference Input Freq. (MHz)	Output Power Typ. (dBm)	2nd Harmonic Typ. (dBc)	Spurious Typ. (dBc)	Phase Noise @10kHz Offset Typ. (dBc/Hz)	Supply Voltage (Vdc)	Package Type	Input - Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE19XC7000 	Phase Locked	500	External	10	7	-35	-70	-110	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XC7005 	Phase Locked	500	External	100	7	-25	-70	-110	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XP5004 	Phase Locked	500	External	10	7	-25	-70	-105	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XP5009 	Phase Locked	500	External	100	7	-25	-70	-110	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XC7001 	Phase Locked	1000	External	10	7	-25	-70	-105	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XC7006 	Phase Locked	1000	External	100	7	-25	-70	-110	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6

Phase Locked Oscillators Continued

PE P/N	Loop Type	Output Frequency (MHz)	Reference Type	Reference Input Freq. (MHz)	Output Power Typ. (dBm)	2nd Harmonic Typ. (dBc)	Spurious Typ. (dBc)	Phase Noise @10kHz Offset Typ. (dBc/Hz)	Supply Voltage (Vdc)	Package Type	Input - Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE19XP5005 	Phase Locked	1000	External	10	7	-25	-70	-100	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XP5010 	Phase Locked	1000	External	100	7	-25	-70	-110	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XC7002 	Phase Locked	2000	External	10	7	-25	-70	-100	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XC7007 	Phase Locked	2000	External	100	7	-25	-70	-110	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XP5006 	Phase Locked	2000	External	10	7	-25	-70	-100	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XP5011 	Phase Locked	2000	External	100	7	-25	-70	-110	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XC7003 	Phase Locked	4000	External	10	7	-35	-70	-90	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XC7008 	Phase Locked	4000	External	100	7	-25	-70	-110	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XP5007 	Phase Locked	4000	External	10	7	-25	-70	-98	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XP5012 	Phase Locked	4000	External	100	7	-25	-70	-110	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XC7004 	Phase Locked	6000	External	10	7	-25	-70	-95	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XC7009 	Phase Locked	6000	External	100	7	-25	-70	-90	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XP5008 	Phase Locked	6000	External	10	7	-25	-70	-90	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XP5013 	Phase Locked	6000	External	100	7	-25	-70	-90	5	Surface Mount		0.9 x 0.9 x 0.21

Phase Locked Crystal Oscillators

PE P/N	Loop Type	Output Frequency (MHz)	Reference Type	Reference Input Freq. (MHz)	Output Power Typ. (dBm)	2nd Harmonic Typ. (dBc)	Spurious Typ. (dBc)	Phase Noise @10kHz Offset Typ. (dBc/Hz)	Supply Voltage (Vdc)	Package Type	Input - Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE19XP5000 	Phase-Locked Crystal	50	External	10	+7	-20	-70	-155	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XP5002 	Phase-Locked Crystal	50	External	10	+7	-20	-70	-155	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6
PE19XP5001 	Phase-Locked Crystal	100	External	10	+7	-20	-70	-150	5	Surface Mount		0.9 x 0.9 x 0.21
PE19XP5003 	Phase-Locked Crystal	100	External	10	+7	-20	-70	-150	12	Connectorized	SMA-SMA	2 x 1.5 x 0.6

TCXO Oscillators

PE P/N	Output Frequency (MHz)	High Level Out Voltage (V min)	Low Level Out Voltage (V max)	Temp. Stability (+/- ppm)	Phase Noise @10kHz Offset (dBc/Hz)	Mechanical Dimensions L (in) x W (in) x H (in)
PE19XL6000 	10	4.9	0.1	2.5	-145	1.25x1.25x 0.563
PE19XL6001 	20	4.9	0.1	2.5	-145	1.25x1.25x 0.563

Synthesizers

PE P/N	Synthesizer Type	Frequency (MHz)	Typ Ref. Freq. (MHz)	Phase Noise @100kHz Offset (dBc/Hz)	Output Power (dBm)	2nd Harmonic	Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE11S3901 	USB	25 - 6,000	50	-86	-40 to 20	-25	SMA Female	4.1 x 0.9 x 0.645
PE11S3900 	USB	35 - 4,400	50	-103	-20 to 10	-30	SMA Female	3.3 x 0.9 x 0.6
PE11S1002 	Serial, TTL	2,000 - 6,000	10	-94	14 to 17	-22	SMA Female	6.1 x 5 x 0.03
PE11S3902 	USB	5,000 - 10,000	50	-72	-15 to 18	-25	SMA Female	4.1 x 0.9 x 0.645

Synthesizers Continued

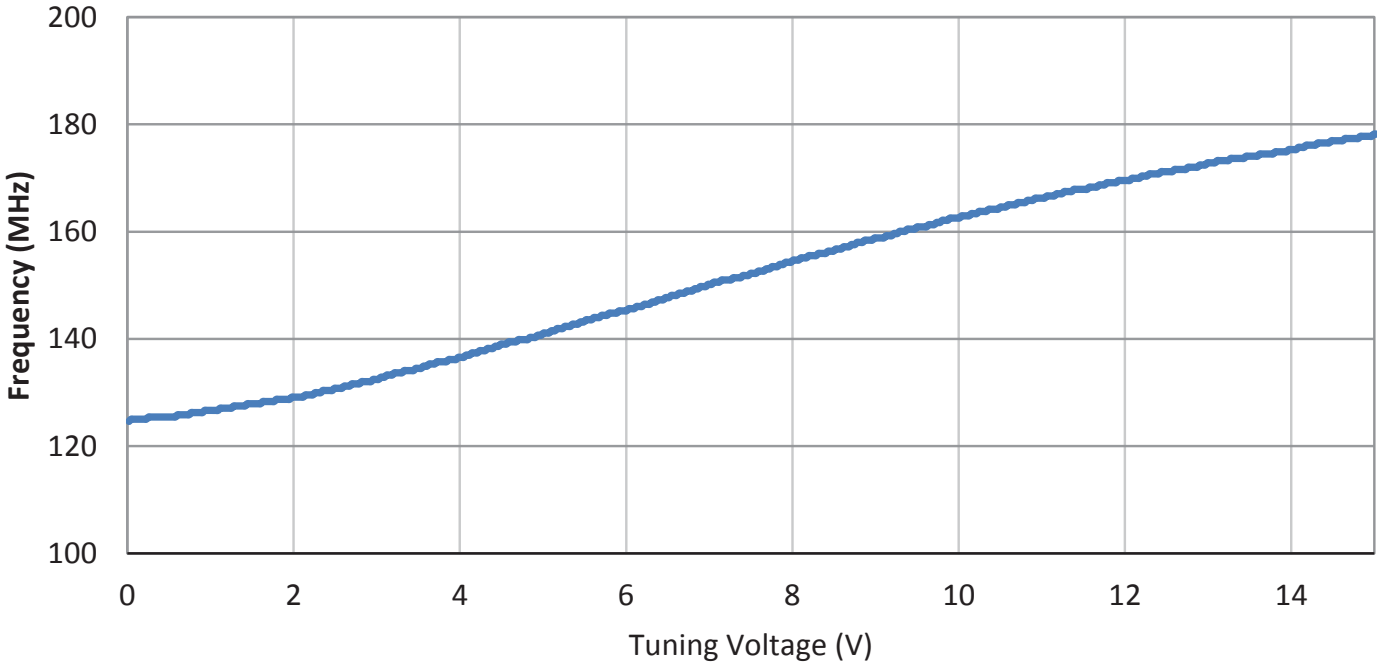
PE P/N	Synthesizer Type	Frequency (MHz)	Typ Ref. Freq. (MHz)	Phase Noise @100kHz Offset (dBc/ Hz)	Output Power (dBm)	2nd Harmonic	Output Connector	Mechanical Dimensions L (in) x W (in) x H (in)
PE11S3903 	USB	10,000 - 20,000	50	-80	-19 to 18	-15	SMA Female	4.1 x 0.9 x 0.645
PE11S3904 	USB	21,000 - 24,000	50	-88	-17 to 17	-22	SMA Female	4.1 x 0.9 x 0.645
PE11S3905 	USB	24,000 - 27,000	50	-75	14 to 17	-22	SMA Female	4.1 x 0.9 x 0.645

Waveguide Gunn Oscillators

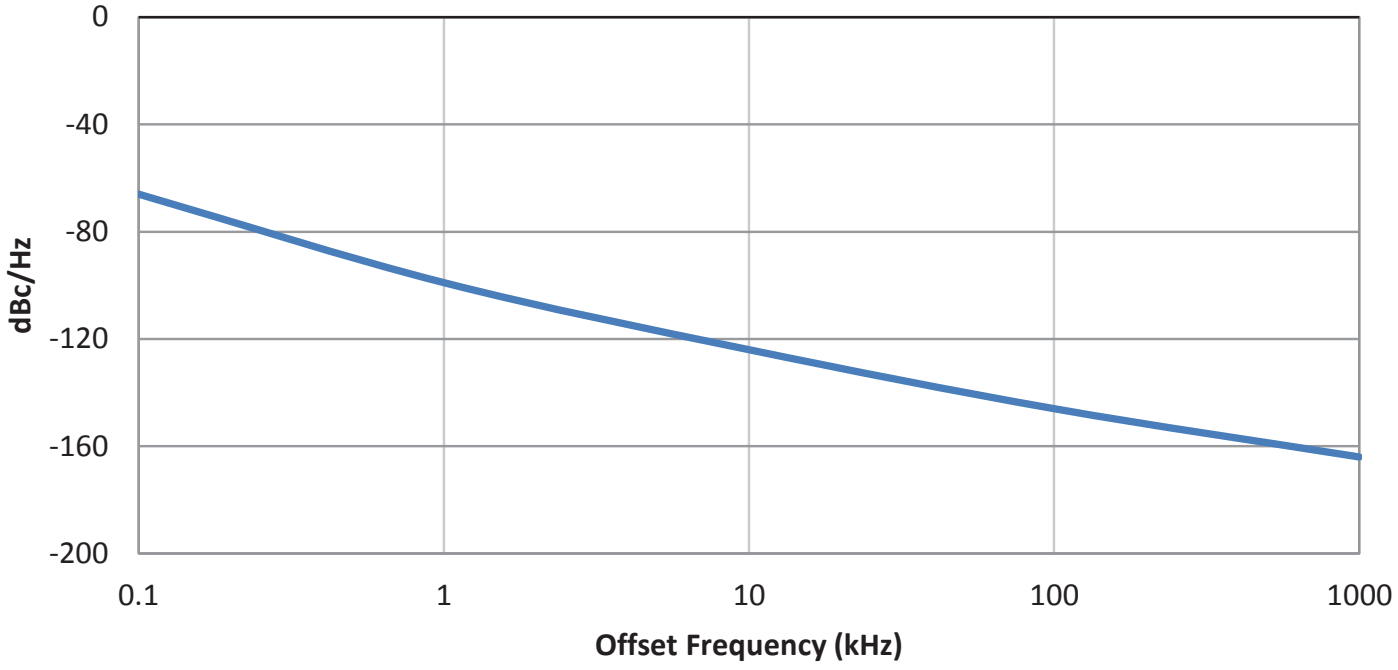
PE P/N	Waveguide Type	Center Frequency (GHz)	Tuning Range (GHz)	Frequency Stability (MHz/deg C)	Phase Noise (dBc/Hz)	Output Power (dBm)	Flange Type	ECCN
PEWGN1010 	WR-28	35	+/- 3		-95	13	Square Cover UG-599/U	EAR99
PEWGN1011 	WR-28	35	+/- 3		-95	13	Square Cover UG-599/U	EAR99
PEWGN1012 	WR-42	24.125	+/- 1	-0.8	-98	10	Square Cover UG-595/U	EAR99
PEWGN1013 	WR-90	9.375	+/- 0.25		-105	10	Square Cover UG-39/U	EAR99

Examples of Typical Phase Noise and Tuning Voltage Performance

Frequency vs Tuning Voltage



Phase Noise



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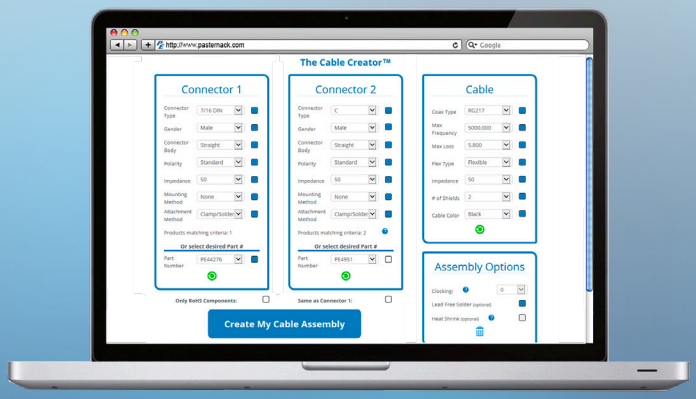

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