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2022
Detectors &
Limiters



Broad Selection of Ready-to-Ship Limiters and Detectors

Pasternack offers a comprehensive selection of coaxial and waveguide packaged RF limiters and detectors that cover broadband frequencies ranging from 3 MHz to 100 GHz. 35 limiter and over 70 detector models are available in compact cylindrical or chassis mountable package outlines that utilize SMA, 2.92mm or waveguide packaged configurations. All models are in-stock with no minimum order quantity, making these components ideal for proof-of-concept and prototyping in precision test and measurement, instrumentation, and subsystem assemblies. Limiter applications include receiver front ends, stabilizing generator outputs, providing constant amplitude signals in phase-sensitive systems, and reducing amplitude variations in FM detection systems. The numerous applications for detectors include power measurements, leveling pulsed signal sources, AM noise measurements, radar or missile guidance systems, monitoring system level performance, and pulsed RF measurements.

All limiter and detector models can be viewed online at www.pasternack.com with real-time pricing, inventory, and comprehensive datasheets that include typical performance graphs and detailed CAD drawings. Applications engineers are standing by to answer any of your technical questions and can assist with selecting the right product for your specific application.

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Limiters

High Rel

PE P/N	Frequency Range (GHz)	Insertion Loss Max. (dB)	Input VSWR Typ.	Leakage Power Max. (dBm)	Recovery Time Typ. (ns)	Input Power (CW) Max. (W)	Peak Power Max. (W)	Limiting Threshold Typ (dBm)
PE80L2003 	20 MHz - 4	0.8	1.8:1	13	15,000	2	100	10
PE80L1000 	500 MHz - 18	1.5	1.5:1	10	10	1	100	10
PE80L2009 	500 MHz - 18	1.6	1.8:1	14		2	20	14
PE80L2005 	500 MHz - 18	2	1.8:1	18	15,000	5	100	14
PE80L1001 	2 - 8	1	2:1	13	40	5	100	
PE80L2001 	2 - 18	2	2:1	14	100	1	200	6
PE80L3000 	2 - 18	2	2:1	14	100	1	200	6
PE80L2006 	2 - 18	2.5	2:1	14	15,000	5	100	6
PE80L2000 	6 - 18	2.5		15	12	10	100	
PE80L2004 	8 - 12	1.2	1.8:1	18	15,000	3	100	15
PE80L4000 	12 - 18	1.5	1.5:1	10	10	1	100	1
PE80L2002 	18 - 40	4	2.1:1	12	10	1	20	5
PE80L2007 	18 - 40	4.5	3:1	13	15,000	1	100	6
PE80L2008 	26.5 - 40	3	2:1	13	15,000	1	100	6

PIN-PIN

PE P/N	Frequency Range (GHz)	Limiting Threshold Typ. (dBm)	Leakage @1W CW Input Max. (dBm)	Insertion Loss Typ. (dB)	Input VSWR Typ.	Input Power (CW) Max. (W)	Input Peak Power Max. (W)
PE8017 	500 MHz - 1	12	20	0.4	1.4:1	1	100
PE8018 	500 MHz - 2	12	19	0.5	1.4:1	1	100
PE8019 	1 - 2	9	19	0.2	1.2:1	1	100
PE8020 	2 - 4	12	18.5	0.8	1.5:1	1	100
PE8021 	2 - 8	9	16	1.2	1.6:1	1	100
PE8022 	2 - 18	12	18	2.5	2.2:1	1	100
PE8023 	4 - 8	9	16	1	1.3:1	1	100
PE8024 	6 - 18	12	16	2.2	2:1	1	100
PE8025 	7 - 12	12	16	1.8	1.8:1	1	100
PE8026 	8 - 16	12	16	2	2:1	1	100
PE8027 	11 - 18	9	16	2	2:1	1	100

PIN-Schottky

PE P/N	Frequency Range (GHz)	Limiting Threshold Typ. (dBm)	Leakage @1W CW Input Max. (dBm)	Insertion Loss Typ. (dB)	Input VSWR Typ.	Input Power (CW) Max. (W)	Input Peak Power Max. (W)
PE8028 	500 MHz - 1	12	14	0.5	1.4:1	1	100
PE8029 	500 MHz - 2	9	14	0.4	1.25:1	1	200

PIN-Schottky Continued

PE P/N	Frequency Range (GHz)	Limiting Threshold Typ. (dBm)	Leakage @1W CW Input Max. (dBm)	Insertion Loss Typ. (dB)	Input VSWR Typ.	Input Power (CW) Max. (W)	Input Peak Power Max. (W)
PE8030 	1 - 2	4	14	0.6	1.4:1	1	100
PE8031 	2 - 4	4	14	0.8	1.5:1	1	200
PE8032 	2 - 8	9	14	1.2	1.4:1	1	200
PE8033 	2 - 18	4	18	2.5	2.2:1	1	100
PE8034 	4 - 8	4	13	1.4	1.5:1	1	100
PE8035 	6 - 18	4	13	2.5	2.2:1	1	100
PE8036 	7 - 12	4	16	1.6	1.6:1	1	100
PE8037 	8 - 16	9	12	2	1.5:1	1	200

Detectors

Tunnel Diode Zero Bias

PE P/N	Frequency Range (GHz)	Output Polarity	VSWR Max.	Pulse Video Response Risetime Typ. (ns)	Voltage Sensitivity Typ. (mV/mW)	Flatness Max. (dB)	Input Power Max. (dBm)	Video Capacitance Typ. (pF)	Tangential Signal Sensitivity Typ. (dBm)
PE80T6000 	100 MHz - 2	Negative	2:1	5	800	0.75	17	470	-51
PE80T6001 	100 MHz - 2	Positive	2:1	5	800	0.75	17	470	-51
PE80T6002 	100 MHz - 4	Negative	2.2:1	5	800	0.75	17	470	-51
PE80T6003 	100 MHz - 4	Positive	2.2:1	5	800	0.75	17	470	-51
PE80T6010 	500 MHz - 1	Negative	2:1	5	1,000	0.5	17	100	-51

Tunnel Diode Zero Bias Continued

PE P/N	Frequency Range (GHz)	Output Polarity	VSWR Max.	Pulse Video Response Risetime Typ. (ns)	Voltage Sensitivity Typ. (mV/mW)	Flatness Max. (dB)	Input Power Max. (dBm)	Video Capacitance Typ. (pF)	Tangential Signal Sensitivity Typ. (dBm)
PE80T6011 	500 MHz - 1	Positive	2:1	5	1,000	0.5	17	100	-51
PE80T6004 	500 MHz - 18	Negative	3.5:1	5	400	1	17	100	-50
PE80T6005 	500 MHz - 18	Positive	3.5:1	5	400	1	17	100	-50
PE80T6012 	1 - 2	Negative	2:1	5	1,000	0.5	17	50	-51
PE80T6013 	1 - 2	Positive	2:1	5	1,000	0.5	17	50	-51
PE80T6014 	2 - 4	Negative	2:1	5	1,000	0.5	17	20	-51
PE80T6015 	2 - 4	Positive	2:1	5	1,000	0.5	17	20	-51
PE80T6016 	2 - 6	Negative	2.5:1	5	1,000	0.5	17	20	-50
PE80T6017 	2 - 6	Positive	2.5:1	5	1,000	0.5	17	20	-50
PE80T6006 	2 - 18	Negative	3.5:1	5	500	1	17	20	-47
PE80T6007 	2 - 18	Positive	3.5:1	5	500	1	17	20	-47
PE80T6018 	4 - 8	Negative	2.5:1	5	900	0.7	17	20	-50
PE80T6019 	4 - 8	Positive	2.5:1	5	900	0.7	17	20	-50
PE80T6020 	6 - 12	Negative	2.7:1	5	800	0.6	17	10	-50
PE80T6021 	6 - 12	Positive	2.7:1	5	800	0.6	17	10	-50

Tunnel Diode Zero Bias Continued

PE P/N	Frequency Range (GHz)	Output Polarity	VSWR Max.	Pulse Video Response Risetime Typ. (ns)	Voltage Sensitivity Typ. (mV/mW)	Flatness Max. (dB)	Input Power Max. (dBm)	Video Capacitance Typ. (pF)	Tangential Signal Sensitivity Typ. (dBm)
PE80T6008 	6 - 18	Negative	3:1	5	700	0.75	17	10	-47
PE80T6009 	6 - 18	Positive	3:1	5	700	0.75	17	10	-47
PE80T6022 	12 - 18	Negative	3:1	5	700	0.7	17	10	-47
PE80T6023 	12 - 18	Positive	3:1	5	700	0.7	17	10	-47
PE80T6024 	18 - 26	Negative	4:1	5	400	1	17	5	-47
PE80T6025 	18 - 26	Positive	4:1	5	400	1	17	5	-47

Schottky Zero Bias

PE P/N	Frequency Range (GHz)	Impedance (Ohm)	Polarity	Voltage Sensitivity (mV/mW)	VSWR Max.	Video Capacitance (pF)	Signal Level and Input Level Min (dBm)
PE8010 	10 MHz - 2	50	Negative	500	1.2:1	470	-30
PE8012 	10 MHz - 12.4	50	Negative	500	1.6:1	470	-30
PE8012P 	10 MHz - 12.4	50	Positive	500	1.6:1	470	-30
PE80T1003 	10 MHz - 18	50	Negative	500	1.7:1	470	-30
PE8013 	10 MHz - 18.5	50	Negative	450	1.7:1	470	-30
PE8014 	10 MHz - 26.5	50	Negative	100		470	-30
PE8015 	2 - 4	50	Negative	500	1.45:1	20	-30

Schottky Zero Bias Continued

PE P/N	Frequency Range (GHz)	Impedance (Ohm)	Polarity	Voltage Sensitivity (mV/mW)	VSWR Max.	Video Capacitance (pF)	Signal Level and Input Level Min (dBm)
PE8016 	2 - 8	50	Negative	500	1.5:1	20	-30

Finline

PE P/N	Frequency Range (GHz)	Impedance (Ohm)	Detected Output Voltage (Volts)	Frequency Response Typ. (dB/Octave)	Voltage Sensitivity (mV/mW)	VSWR Max.	Maximum Input Power (Watts)
PE80T1004 	100 MHz - 12.4	50	+10.5	+/- 0.2	800	1.7:1	0.5
PE80T1005 	100 MHz - 18	50	+9.5	+/- 0.2	800	1.7:1	0.5

Biased

PE P/N	Frequency Range (GHz)	Polarity	Voltage Sensitivity (mV/mW)	Flatness (dB)	Input Power (dBm)	Tangential Signal Sensitivity (dBm)
PE8001 	500 MHz - 1	Negative	1,800	0.25	23	-54
PE8001-P 	500 MHz - 1	Positive	1,800	0.5	23	-54
PE8002 	1 - 2	Negative	2,000	0.25	23	-52
PE8002-P 	1 - 2	Positive	2,000	0.25	23	-52
PE8003 	2 - 4	Negative	2,000	0.5	23	-52
PE8003-P 	2 - 4	Positive	2,000	0.5	23	-52
PE8044 	4 - 8	Negative	2,000	0.5	23	-52
PE8004-P 	4 - 8	Positive	2,000	0.5	23	-52
PE8005 	6 - 18	Negative	1,600	0.8	23	-52

Biased Continued

PE P/N	Frequency Range (GHz)	Polarity	Voltage Sensitivity (mV/mW)	Flatness (dB)	Input Power (dBm)	Tangential Signal Sensitivity (dBm)
PE8005-P 	6 - 18	Positive	1,600	0.8	23	-52
PE8006 	8 - 12	Negative	1,800	0.5	23	-52
PE8006-P 	8 - 12	Positive	1,800	0.5	23	-52
PE8007 	8 - 16	Negative	1,800	0.6	23	-52
PE8007-P 	8 - 16	Positive	1,800	0.6	23	-52
PE8008 	8 - 18	Negative	1,600	0.7	23	-52
PE8008-P 	8 - 18	Positive	1,600	0.7	23	-52
PE8009 	18 - 26	Negative	1,500	1	23	-52
PE8009-P 	18 - 26	Positive	1,500	1	23	-52

Log

PE P/N	Frequency Range (GHz)	Impedance (Ohm)	Slope (mV/dB)	Input Power Max. (dBm)	Output Voltage Max. (dB)	Slew Rate (V/us)
PE8040 	10 MHz - 3	50	40	10	2	1

Threshold

PE P/N	Frequency Range (GHz)	Impedance (Ohm)	Signal Level and Input Level Min. (dBm)	Input Power Max. (dBm)	Propagation Delay Typ. (ns)	DC Voltage
PE80T1000 	2 - 18	50	-20	10	15	15
PE80T1001 	2 - 18	50	-45	10	20	12

Threshold Continued

PE P/N	Frequency Range (GHz)	Impedance (Ohm)	Signal Level and Input Level Min. (dBm)	Input Power Max. (dBm)	Propagation Delay Typ. (ns)	DC Voltage
PE80T1002 	16 - 40	50	-20	17		15

Phase

PE P/N	Frequency Range (GHz)	Impedance (Ohm)	VSWR Max.	Input Power Max. (dBm)	DC Voltage
PE80T4000 	3 MHz - 300 MHz	50	2:1	17	15
PE80T4002 	5 MHz - 25 MHz	50	2:1	17	15
PE80T4001 	200 MHz - 800 MHz	50	2:1	10	15

Power

PE P/N	Frequency Range (GHz)	Dynamic Range (dB)	True RMS Output Voltage Typ (V)	Output Slope	VSWR	Max RF Input. Power (dBm)	RF Connectors
PE80P1001 	30 MHz - 4	80	0.62 - 1.89	Positive	2:1	20	SMA
PE80P1002 	50 MHz - 3	60	0.12 - 2.1	Positive	2:1	10	SMA
PE80P1000 	50 MHz - 5	30	0.15 - 4.95	Positive	2:1	15	SMA

Log Amplifiers

PE P/N	Amplifier Type	Frequency Band (GHz)	Typical Recovery Time (ns)	Minimum TSS (dBm)	Log Linearity (± dB)	Log Range (dBm)	Rise Time (ns)	Log Slope (mV/dB)	Voltage (± Volts)	Mechanical Dimensions L(in) x W(in) x H(in)	Connector Type	ECCN
PE15A2003 	Log, High Rel	500 MHz - 18	150	-65	1.75	-65 to 5	20	20	15	3 x 3.5 x 0.5	SMA	EAR99
PE15A2001 	Log, High Rel	2 - 6	60	-73	1.75	-70 to 5	15	40	12	3.75 x 1.5 x 0.5	SMA	EAR99
PE15A2004 	Log, High Rel	6 - 18	150	-40	1	-40 to 0	20	50	15	2.2 x 1.5 x 0.4	SMA	EAR99

Waveguide Detectors

PE P/N	Connector 1	RF Frequency Range (GHz)	Voltage Sensitivity (V/nW)	Input Power (dBm)	Connector 2	ECCN
PE80T3005 	WR-28 UG-599/U	26.5 - 40	-1,000	20	SMA Female	EAR99
PE80T3004 	WR-22 UG-383/U	33 - 50	-800	20	SMA Female	EAR99
PE80T3003 	WR-19 UG-383/U	40 - 60	-800	20	SMA Female	EAR99
PE80T3002 	WR-15 UG-385/U	50 - 75	-700	20	SMA Female	EAR99
PE80T3001 	WR-12 UG-387/U	60 - 90	-900	20	SMA Female	EAR99
PE80T3000 	WR-10 UG-387/U	75 - 100	-900	20	SMA Female	EAR99

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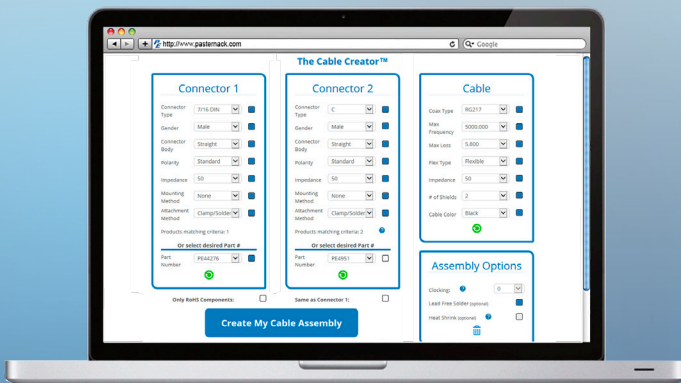
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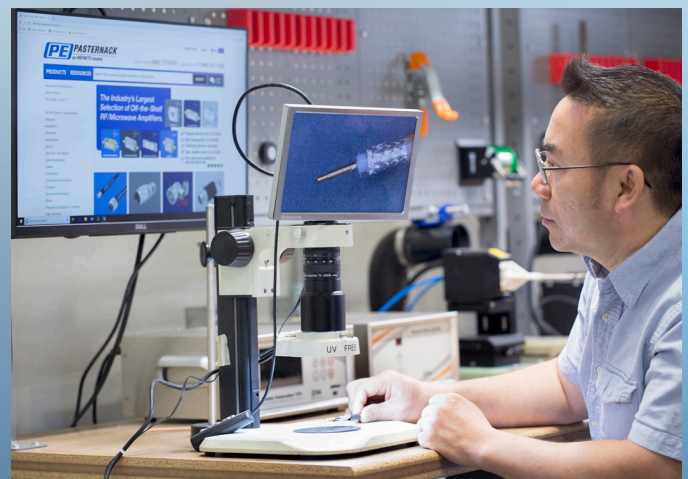
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