Plug-In

Limiter

50Ω Broadband, 0.1 to 150 MHz

PLS-1+

Generic photo used for illustration purposes only

CASE STYLE: A01

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Input Power	100mW
Control Current	10mA

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

Pin Connections

INPUT	1
OUTPUT	8
CONTROL	3,4^
GROUND	2,5,6,7
CASE GROUND	2

^ pins must be connected together externally

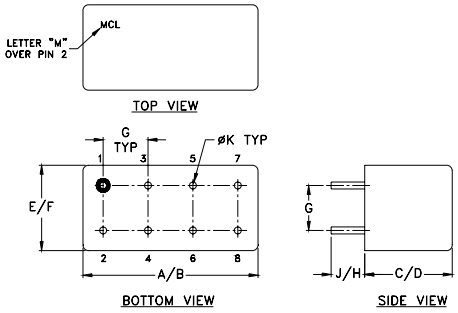
Features

- hermetic shielded case
- very small phase variation

Applications

- military, hi-rel applications
- stabilizing generator outputs
- reducing amplitude variations
- providing constant amplitude signals in phase sensitive systems

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	
.770	.800	.385	.400	.370	.40
19.56	20.32	9.78	10.16	9.40	10.1
G	H	J	K		
.200	.20	.14	.031		gram
5.08	5.08	3.56	0.79		5.

Electrical Specifications

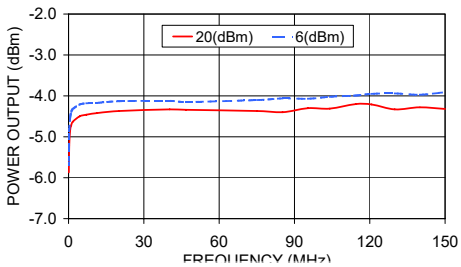
Parameter		Condition	Min.	Typ.	Max.	Units
Frequency Range		—	0.1	—	150	MHz
Input Power		—	6.0	—	20	dBm
Output Power*		—	—	-4.0	—	dBm
Control Current		—	—	3.0	—	mA
Limiting Δ Output/1dB Δ Input	Amplitude	Input Power Range (dBm) 6 to 10 10 to 16 16 to 20	 — — —	 0.10 0.15 0.15	 — — —	dB/dB
	Phase	6 to 10 10 to 16 16 to 20	— — —	0.8 0.8 0.7	— — —	°/dB

* Typical output level at typical control current, level may be changed by varying current.

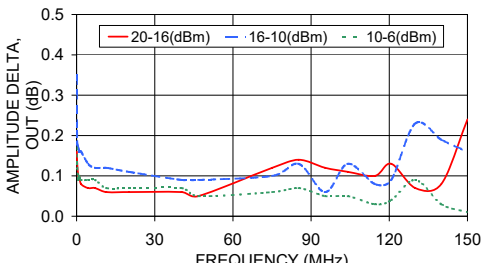
Typical Performance Data

Frequency (MHz)	Power Output (20 dBm IN) (dBm)	Power Output (6 dBm IN) (dBm)	Delta (dB)	Amplitude Delta, out dBm Input 20-16 (dB)	Amplitude Delta, out dBm Input 16-10 (dB)	Amplitude Delta, out dBm Input 10-6 (dB)	Phase Delta, Out dBm Input 20-16 (deg.)	Phase Delta, Out dBm Input 16-10 (deg.)	Phase Delta, Out dBm Input 10-6 (deg.)
0.10	-5.87	-5.68	0.19	0.16	0.35	0.17	0.28	3.41	2.84
0.26	-5.21	-4.86	0.36	0.13	0.18	0.12	0.69	1.29	1.52
0.66	-4.83	-4.52	0.31	0.10	0.17	0.09	0.30	0.70	0.75
1.06	-4.72	-4.39	0.33	0.10	0.16	0.10	0.21	0.49	0.48
1.71	-4.63	-4.32	0.31	0.08	0.16	0.09	0.25	0.36	0.35
4.42	-4.50	-4.21	0.29	0.07	0.13	0.09	0.30	0.70	0.42
7.11	-4.46	-4.18	0.28	0.07	0.12	0.09	0.34	0.90	0.74
11.41	-4.42	-4.17	0.25	0.06	0.12	0.07	0.49	0.99	1.06
20.08	-4.37	-4.13	0.24	0.06	0.11	0.07	0.61	1.10	1.06
40.32	-4.33	-4.12	0.21	0.06	0.09	0.07	0.20	1.04	0.44
46.73	-4.34	-4.15	0.19	0.05	0.09	0.05	0.32	0.37	0.38
75.09	-4.37	-4.10	0.28	0.12	0.10	0.06	0.97	0.24	0.39
85.23	-4.40	-4.06	0.34	0.14	0.13	0.07	1.24	0.37	1.25
95.37	-4.30	-4.07	0.23	0.12	0.06	0.05	0.71	0.42	1.46
104.06	-4.31	-4.02	0.29	0.11	0.13	0.05	1.09	0.42	2.45
114.50	-4.20	-3.99	0.22	0.10	0.08	0.03	0.54	1.06	1.55
120.76	-4.21	-3.95	0.26	0.13	0.09	0.04	1.25	0.58	1.49
129.95	-4.33	-3.94	0.39	0.07	0.23	0.09	1.52	1.29	1.37
139.98	-4.28	-3.97	0.32	0.08	0.19	0.03	0.90	0.22	0.68
150.00	-4.32	-3.91	0.41	0.24	0.16	0.01	0.27	0.66	0.92

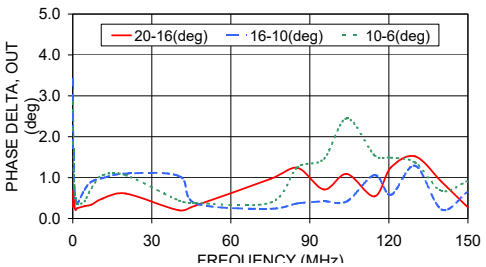
PLS-1+
POWER OUTPUT



PLS-1+
AMPLITUDE Δ, OUT



PLS-1+
PHASE Δ, OUT



Notes

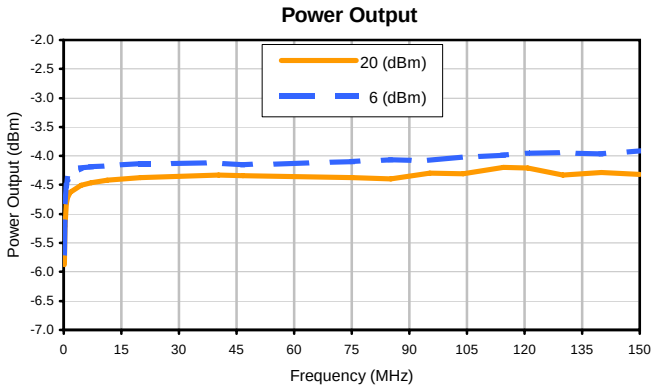
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

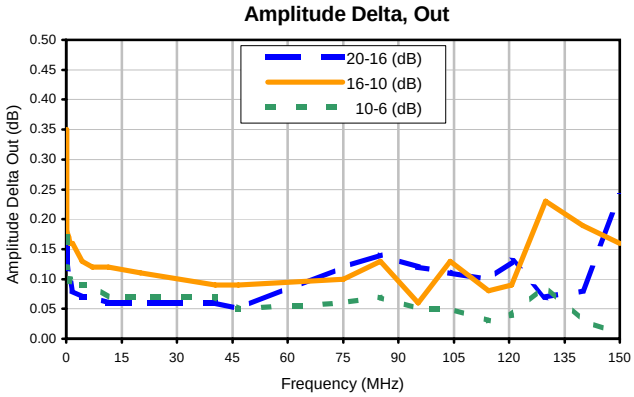
Plug-In LIMITER PLS-1+

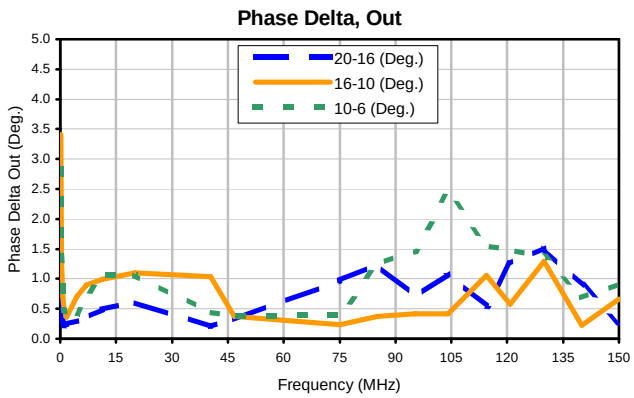
Typical Performance Data

FREQUENCY	POWER OUTPUT		DELTA	AMPLITUDE DELTA, OUT dBm Input			PHASE DELTA, OUT dBm Input		
	(20dBm IN)	(6dBm IN)		20-16	16-10	10-6	20-16	16-10	10-6
(MHz)	(dBm)		(dB)	(dB)	(dB)	(dB)	(Deg.)	(Deg.)	(Deg.)
0.10	-5.87	-5.68	0.19	0.16	0.35	0.17	0.28	3.41	2.84
0.26	-5.21	-4.86	0.36	0.13	0.18	0.12	0.69	1.29	1.52
0.66	-4.83	-4.52	0.31	0.10	0.17	0.09	0.30	0.70	0.75
1.06	-4.72	-4.39	0.33	0.10	0.16	0.10	0.21	0.49	0.48
1.71	-4.63	-4.32	0.31	0.08	0.16	0.09	0.25	0.36	0.35
4.42	-4.50	-4.21	0.29	0.07	0.13	0.09	0.30	0.70	0.42
7.11	-4.46	-4.18	0.28	0.07	0.12	0.09	0.34	0.90	0.74
11.41	-4.42	-4.17	0.25	0.06	0.12	0.07	0.49	0.99	1.06
20.08	-4.37	-4.13	0.24	0.06	0.11	0.07	0.61	1.10	1.06
40.32	-4.33	-4.12	0.21	0.06	0.09	0.07	0.20	1.04	0.44
46.73	-4.34	-4.15	0.19	0.05	0.09	0.05	0.32	0.37	0.38
75.09	-4.37	-4.10	0.28	0.12	0.10	0.06	0.97	0.24	0.39
85.23	-4.40	-4.06	0.34	0.14	0.13	0.07	1.24	0.37	1.25
95.37	-4.30	-4.07	0.23	0.12	0.06	0.05	0.71	0.42	1.46
104.06	-4.31	-4.02	0.29	0.11	0.13	0.05	1.09	0.42	2.45
114.50	-4.20	-3.99	0.22	0.10	0.08	0.03	0.54	1.06	1.55
120.76	-4.21	-3.95	0.26	0.13	0.09	0.04	1.25	0.58	1.49
129.95	-4.33	-3.94	0.39	0.07	0.23	0.09	1.52	1.29	1.37
139.98	-4.28	-3.97	0.32	0.08	0.19	0.03	0.90	0.22	0.68
150.00	-4.32	-3.91	0.41	0.24	0.16	0.01	0.27	0.66	0.92

Typical Performance Curves



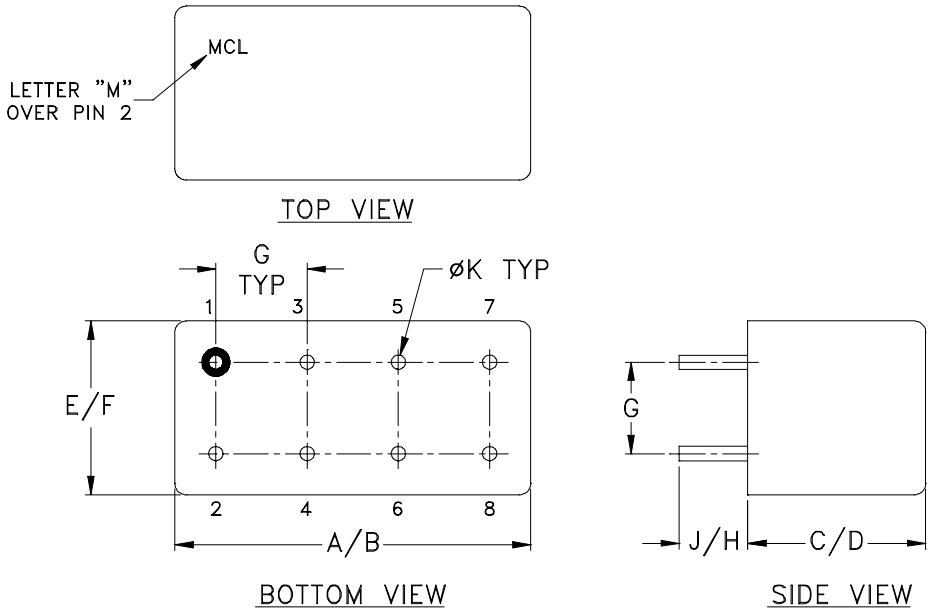




Case Style A

A01
A04
A05
A06

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	WT, GRAM
A01	.770 (19.56)	.800 (20.32)	.385 (9.78)	.400 (10.16)	.370 (9.40)	.400 (10.16)	.200 (5.08)	.20 (5.08)	.14 (3.56)	.031 (.79)	5.2
A04			.200 (5.08)	.210 (5.33)							3.7
A05			.240 (6.10)	.250 (6.35)							3.7
A06			.285 (7.24)	.310 (7.87)							5.2

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

Notes:

1. Header material: C.R.S.
   Pin material: #52 alloy.
   Cover material: Cupro-Nickel.
2. Pin finish: Electro Tin-Silver.
3. Insulated spacer available. Request P/N B14-045-01.
4. Tolerance on pin diameter +/-.005 inch.
5. Glass meniscus 0.015 inch max.
6. Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.

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Mini-Circuits

Environmental Specifications ENV01

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A

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Specification	Test/Inspection Condition	Reference/Spec
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D

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