Fixed Amplitude Mismatch, Wideband

NON-CATALOG

Electronic Line Stretcher

ELS-950

50Ω 360° Voltage Variable 400 to 950 MHz

CASE STYLE: K18

Connectors	Model
SMA	ELS-950-S
BRACKET (OPTION "B")	

Maximum Ratings

Operating Temperature	0°C to 50 °C
Storage Temperature	-40°C to 100°C
RF Input Power	13dBm
Control Voltage	0.5V to 30V

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

Coaxial Connections

RF IN	1
MONITOR OUT*	2
CONTROL	3

* Monitor out port should be connected to a 50-ohm load

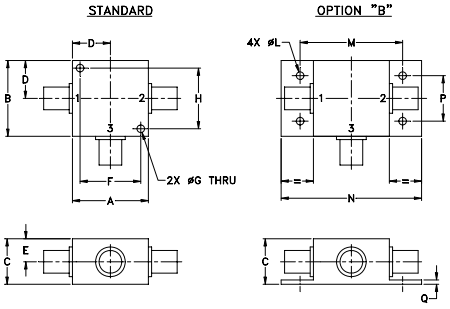
Features

- over 360° phase shift of the reflected signal
- normalized and stable magnitude of the reflected signal
- voltage controlled for automated applications
- protected under US Patent 6,479,977

Applications

- automated load-pull measurement of oscillators[1]

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.00	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40

J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.75	.07	grams
--	--	3.18	42.88	55.37	19.05	1.78	70.0

Electrical Specifications

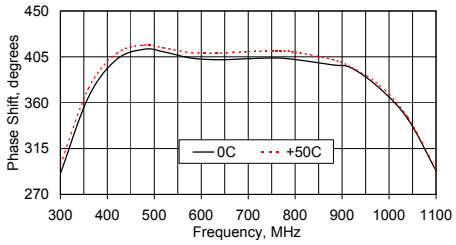
FREQUENCY RANGE (MHz) f_L-f_U	INPUT POWER (dBm) Max.	PHASE RANGE (Degrees) Min.	RETURN LOSS (dB) Typ.	CONTROL VOLTAGE (V)
400-950	10	360	10-12	0.5-25

1. See Application Note AN-45-002 on our web site.

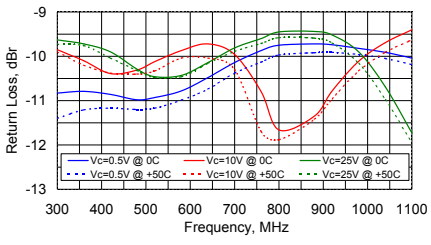
Typical Performance Data

FREQ. (MHz)	PHASE SHIFT (Deg.)		RETURN LOSS (dBr)					
	0°C	50°C	Vc=0.5V @ 0°C	Vc=10V @ 0°C	Vc=25V @ 0°C	Vc=0.5V @+ 50°C	Vc=10V @+50°C	Vc=25V @ +50°C
300	290.51	299.06	-10.83	-9.85	-9.63	-11.40	-9.90	-9.73
360	365.70	374.24	-10.79	-10.10	-9.72	-11.21	-10.20	-9.76
420	402.47	408.38	-10.86	-10.39	-9.90	-11.17	-10.38	-10.04
480	412.55	416.59	-10.98	-10.31	-10.29	-11.20	-10.40	-10.32
520	409.93	413.82	-10.93	-10.12	-10.46	-11.17	-10.33	-10.48
580	403.67	408.94	-10.78	-9.87	-10.43	-10.99	-10.04	-10.46
640	402.14	408.69	-10.48	-9.72	-10.14	-10.74	-10.04	-10.16
700	403.23	410.19	-10.14	-9.96	-9.81	-10.38	-10.30	-9.89
760	403.87	410.63	-9.87	-10.80	-9.60	-10.13	-11.70	-9.71
800	402.32	409.49	-9.75	-11.66	-9.45	-9.97	-11.88	-9.58
880	397.09	402.32	-9.72	-11.35	-9.44	-9.92	-11.42	-9.59
920	394.06	394.63	-9.74	-10.78	-9.52	-9.91	-10.96	-9.70
980	374.13	377.19	-9.82	-10.11	-9.90	-9.96	-10.33	-10.16
1040	343.98	345.70	-9.91	-9.69	-10.69	-10.05	-9.91	-10.98
1100	293.33	294.33	-10.04	-9.40	-11.73	-10.19	-9.63	-11.96

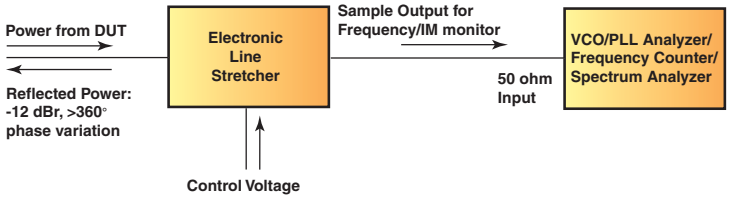
Maximum Phase Shift vs. Frequency
at temperature extremes
@ Pin=+7dBm



Return Loss vs. Frequency
at temperature extremes
@ Pin=+7dBm



Application Block Diagram



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