TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 8/11

GC2510

10 TO 2500 MHz TO-8 VOLTAGE CONTROLLED ATTENUATOR MODULE

Typical Values	GC2510
Fast Switching (10 - 90%)	< 1.5 µsec
(0 - 100%)	< 8 µsec
High Attenuation Range	> 35 dB
Low SWR	< 1.5:1
Excellent Flatness vs. Frequency	± 0.5
Standard Size TO-8 Package for Attenuators	

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency Range	**10-2600 MHz**	**10-2500 MHz**	**10-2500 MHz**
Attenuation (Min.)			
10-20 MHz	40 dB	37 dB	34 dB
20-500 MHz	52 dB	40 dB	37 dB
500-1000 MHz	43 dB	35 dB	32 dB
1000-2000 MHz	38 dB	30 dB	27 dB
2000-2500 MHz	35 dB	28 dB	25 dB
Insertion Loss (Max.)			
10-500 MHz	2.0 dB	2.8 dB	3.0 dB
500-1000 MHz	2.3 dB	2.8 dB	3.2 dB
1000-2000 MHz	2.8 dB	3.3 dB	3.8 dB
2000-2500 MHz	3.0 dB	3.5 dB	4.2 dB
SWR (Max.) Input/Output			
10-1000 MHz	1.2:1	1.8:1	1.8:1
1000-2000 MHz	1.2:1	2.0:1	2.0:1
2000-2500 MHz	< 1.3:1	2.2:1	2.2:1
Flatness vs. Freq. (Max.) (Attenuation to 25 dB)			
100-1000 MHz	< ±0.5 dB	< ±1.0 dB	< ±1.0 dB
1000-2500 MHz	< ±1.0 dB	< ±1.5 dB	< ±1.7 dB
Switching Speed (Max.)			
10 - 90%	< 1.5 µsec	2.0 µsec	—
0 - 100%	< 8.0 µsec	9.0 µsec	—
Bias Current (Max.)	7 mA	10 mA	12 mA
Control Voltage	0 to +15 V	0 to +15 V	0 to +15 V
Control Current (Max.)	7 mA	10 mA	10 mA

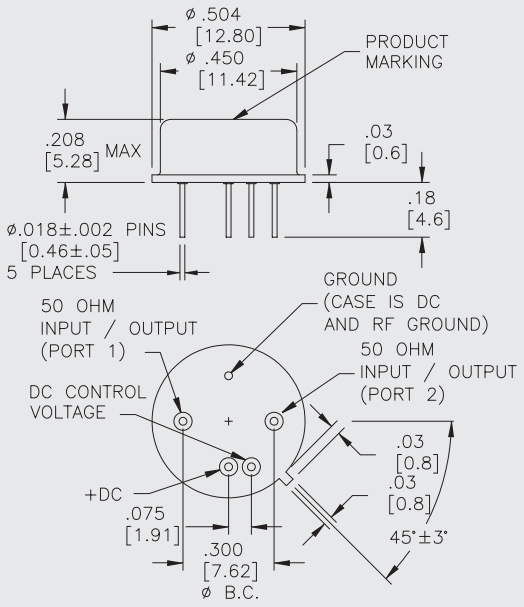
* Measured in a 50-ohm system at +15 Vdc bias.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+19 Volts
Maximum Continuous RF Input Power	200 Milliwatts
Maximum Peak Power (3 µsec Max.)	1.0 Watt
Burn-in Temperature	+125 °C

GC2510

TO-8 Package for Attenuators

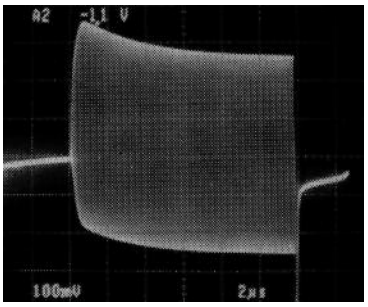


Connectorized case available.

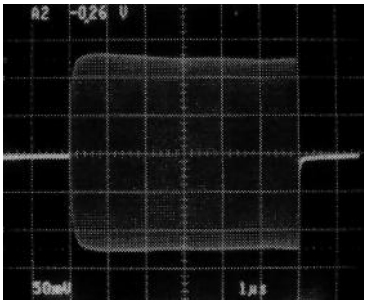
DIMENSIONS ARE IN INCHES [MILLIMETERS]

SWITCHING SPEED

Typical Switching Speed at 25 °C



Full Attenuation Range



10 dB Attenuation Range

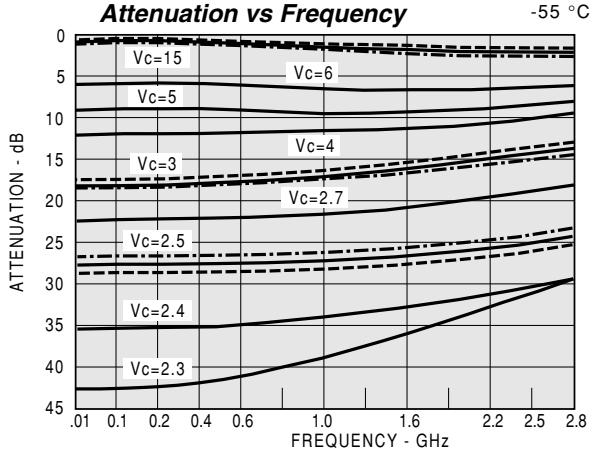
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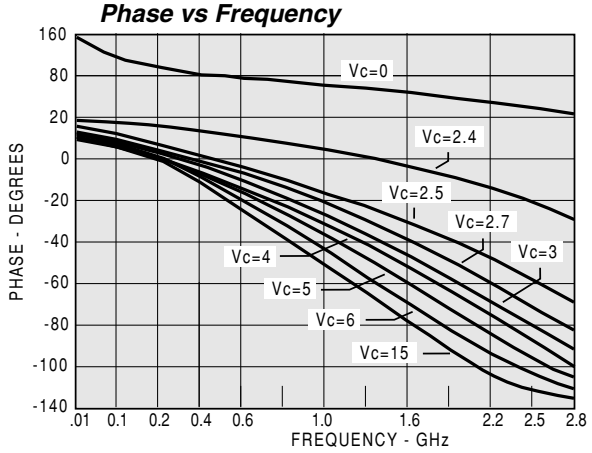
TYPICAL PERFORMANCE

KEY: +25 °C ——
+85 °C -·-·-
-55 °C - - -

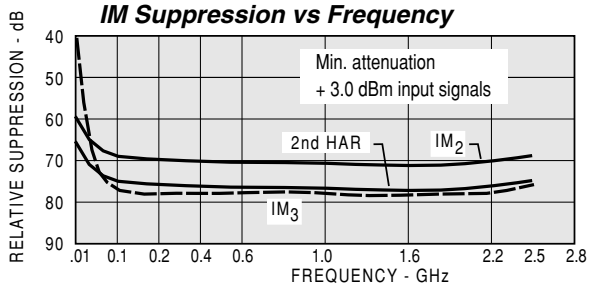
Attenuation vs Frequency



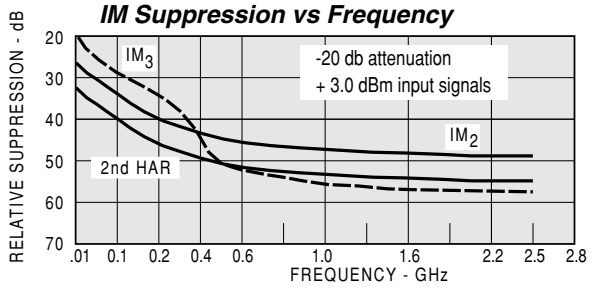
Phase vs Frequency



IM Suppression vs Frequency



IM Suppression vs Frequency



TYPICAL AUTOMATIC TEST DATA

Model: GC2510 Vcc=+15V Vc=+15V Icc=4.84 mA

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10.0	1.51	1.50	-1.9		-1.9
100.0	1.20	1.20	-1.5		-1.5
500.0	1.20	1.20	-1.6	.145	-1.6
1000.0	1.21	1.23	-1.8	.136	-1.7
1500.0	1.32	1.29	-2.0	.134	-2.0
2000.0	1.34	1.35	-2.3	.135	-2.2
2500.0	1.35	1.33	-2.4	.132	-2.5

Model: GC2510 Vcc=+15V Vc=+4.0V Icc=5.02 mA

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10.0	1.60	1.58	-12.8		-12.8
100.0	1.32	1.34	-12.1		-12.1
500.0	1.33	1.37	-12.1	.113	-12.1
1000.0	1.37	1.37	-12.0	.100	-11.9
1500.0	1.28	1.33	-11.7	.102	-11.7
2000.0	1.21	1.23	-11.2	.109	-11.3
2500.0	1.02	1.07	-10.5	.122	-10.5

Model: GC2510 Vcc=+15V Vc=+2.5V Icc=5.14 mA

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10.0	1.61	1.58	-31.2		-31.3
100.0	1.09	1.10	-28.9		-28.9
500.0	1.05	1.09	-28.4	.088	-28.3
1000.0	1.10	1.10	-28.3	.071	-28.2
1500.0	1.10	1.11	-27.9	.063	-27.9
2000.0	1.21	1.19	-27.2	.082	-27.5
2500.0	1.49	1.43	-26.5	.118	-26.7

Model: GC2510 Vcc=+15V Vc=+0V Icc=5.15 mA

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10.0	1.63	1.59	-55.6		-54.2
100.0	1.09	1.08	-63.6		-65.6
500.0	1.08	1.05	-47.6	.135	-46.9
1000.0	1.13	1.12	-40.4	.095	-41.3
1500.0	1.22	1.19	-37.2	.089	-37.2
2000.0	1.38	1.35	-34.9	.086	-35.0
2500.0	1.77	1.68	-33.8	.093	-33.6

Model: GC2510 Vcc=+12V Vc=+2.5V Icc=4.06 mA

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
10.0	1.67	1.63	-19.4		-19.5
100.0	1.12	1.13	-18.1		-18.1
500.0	1.06	1.10	-17.8	.113	-17.8
1000.0	1.09	1.10	-17.6	.096	-17.5
1500.0	1.02	1.06	-17.3	.098	-17.3
2000.0	1.05	1.04	-16.8	.104	-16.8
2500.0	1.26	1.21	-16.1	.122	-16.2

IM Suppression vs Attenuation

