NON-CATALOG

Surface Mount

Voltage Variable Equalizer

VAEQ-1000-75+

75Ω **50 to 1000 MHz**

The Big Deal

- Adjustable attenuation slope
- IP3 +48 dBm typical
- Minimal deviation from linear loss, ± 0.6dB

CASE STYLE: HE1354

Product Overview

The VAEQ-1000-75+ is a 75Ω Voltage Variable Equalizer built into a shielded case (size of .394”x.394”x.150”) This model offers excellent performance over a wide frequency range of 50 to 1000 MHz with the variable slope providing great flexibility in a small package.
The VAEQ-1000-75+ is often used to compensate RF chain gain flatness or cable loss versus frequency.

Key Features

Feature	Advantages
Low power consumption: • Supply voltage +5V_{DC} at max 16mA • Control voltage 0-10V at max 20mA	Allows for use in applications with power constraints.
Adjustable attenuation slope (Control voltage of 0V to 10V)	Allows adjusting the slope to compensate for the precise loses encountered.
High linearity (IP3 +48 dBm typ.)	Low distortion enabling improved system performance.
Minimal deviation from linear loss over frequency range: ±0.6dB	Provides low signal distortion over the passband.

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Surface Mount

Voltage Variable Equalizer

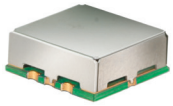
NON-CATALOG

VAEQ-1000-75+

75Ω 50 to 1000 MHz

Features

- Wide bandwidth
- Low insertion loss
- Low deviation from linear loss, ± 0.6 dB typ.
- High IP3 +48 dBm typ.
- Shielded case
- Aqueous washable



CASE STYLE: HE1354

Applications

- CATV
- Cable loss compensation
- Instrumentation

+RoHS Compliant

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

Electrical Specifications at 25°C, V+=5V$_{DC}$ unless otherwise noted

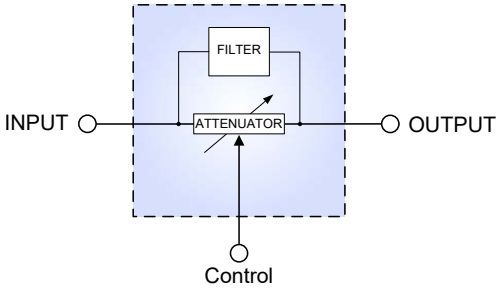
Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		50		1000	MHz
Insertion Loss	50 MHz, Control Voltage, 0 - 10V 1000 MHz, Control Voltage, 0 - 10V		14.6 - 1.5 5.3 - 3.0		dB
Deviation from Linear Loss	50 - 1000 MHz, Control Voltage 0 - 10V		± 0.6		dB
IP3	50 - 1000 MHz, Control Voltage, 2.5 - 10V	+35	+48		dBm
0.2 dB Compression	50 - 1000 MHz, Control Voltage, 0 - 10V		+30		dBm
Input Return Loss	50 - 1000 MHz, Control Voltage, 0 - 10V		15.0		dB
Output Return Loss	50 - 1000 MHz, Control Voltage, 0 - 10V		12.5		dB
Supply Voltage (V+)	50 - 1000 MHz, Control Voltage, 0 - 10V		5.0		V
Supply Current	50 - 1000 MHz, Control Voltage, 8.6V 50 - 1000 MHz, Control Voltage, 0V		0 8	 16	mA
Control Current	50 - 1000 MHz, Control Voltage, 10V 50 - 1000 MHz, Control Voltage, 2.5V		15 0	20	mA

Maximum Ratings

Parameter	Ratings
Operating Temperature	0°C to 85°C
Storage Temperature	-55°C to 100°C
Input Power	+23dBm
Control voltage	12V
Supply Voltage (V+)	7V

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

Simplified Functional Diagram



Pad Connections

Function	Pin Number
RF IN	1
RF OUT	6
V CONTROL	3
V+	4
GROUND	2,5

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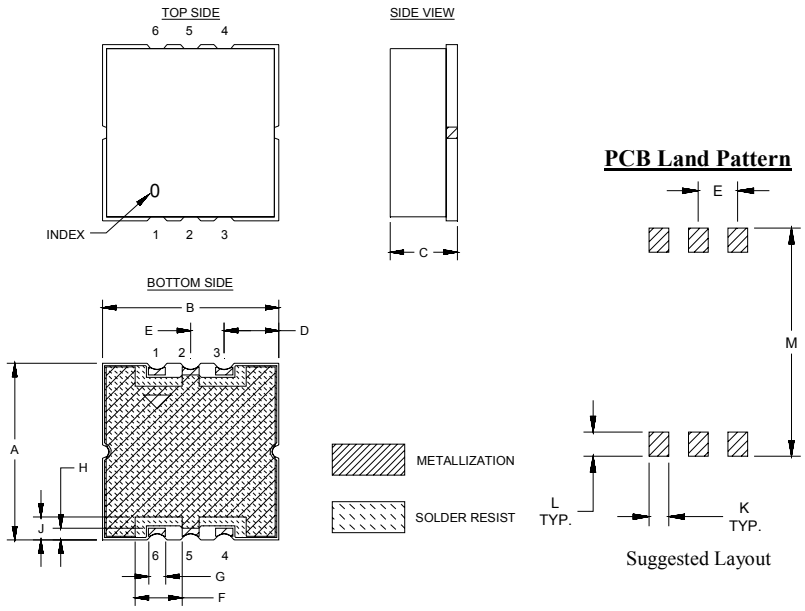
Voltage Variable Equalizer VAEQ-1000-75+

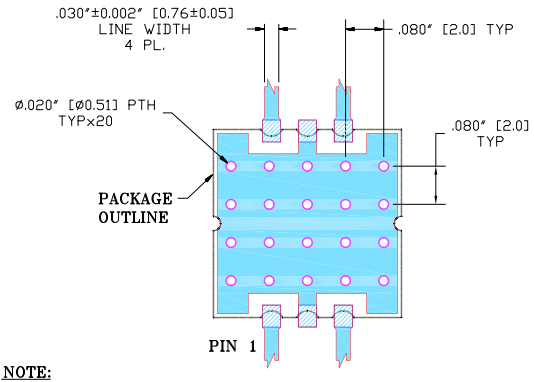
Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	wt.
.394	.394	.150	.122	.075	.098	.038	.026	.051	.038	.046	.434	grams
10.01	10.01	3.81	3.10	1.90	2.49	0.97	0.66	1.29	0.97	1.17	11.02	0.7

Demo Board MCL P/N: TB-1052+
Suggested PCB Layout (PL-315)



NOTE:

1. TRACE WIDTH IS SHOWN FOR RO4350 WITH DIELECTRIC THICKNESS. .030"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Pad Connections

Function	Pin Number
RF IN	1
RF OUT	6
V CONTROL	3
V+	4
GROUND	2,5

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Typical Performance Data

VAEQ-1000-75+

Frequency (MHz)	Insertion Loss (dB)		Input Return Loss (dB)		Output Return Loss (dB)		Deviation from Linear Loss (dB)		Insertion Phase (deg)		Input IP3 (dBm)	
	Vcontrol		Vcontrol		Vcontrol		Vcontrol		Vcontrol		Vcontrol	
	0V	2.7V	0V	2.7V	0V	2.7V	0V	2.7V	0V	2.7V	0V	2.7V
50	14.58	14.47	23.84	23.86	23.15	24.74	1.31	1.24	20.22	19.83	46.14	50.99
100	13.78	13.69	24.74	24.70	23.33	24.70	1.01	0.96	14.35	13.90	53.35	50.17
150	13.03	12.96	24.32	24.21	22.70	23.31	0.75	0.72	12.27	11.77	54.98	50.63
200	12.20	12.16	24.83	24.70	21.70	21.82	0.42	0.42	10.05	9.54	56.27	52.16
250	11.38	11.36	23.01	22.98	20.31	19.97	0.10	0.11	7.01	6.54	54.28	52.06
300	10.57	10.56	22.25	22.27	18.96	18.50	0.21	0.20	3.09	2.68	56.76	53.11
350	9.83	9.84	20.28	20.27	17.34	16.83	0.45	0.43	1.62	1.98	56.08	54.12
400	9.13	9.13	19.04	19.00	15.67	15.22	0.66	0.63	6.94	7.23	55.47	54.47
450	8.52	8.54	17.16	17.17	14.51	14.10	0.76	0.73	12.75	12.97	53.63	53.41
500	7.96	7.98	15.68	15.72	13.05	12.71	0.83	0.80	18.96	19.10	54.32	54.63
550	7.49	7.51	14.28	14.31	12.04	11.77	0.80	0.78	25.45	25.52	53.63	52.45
600	7.04	7.06	12.95	12.94	10.81	10.61	0.75	0.73	32.00	32.01	52.69	53.29
650	6.70	6.72	11.86	11.85	9.88	9.72	0.59	0.58	38.90	38.87	53.62	52.55
700	6.33	6.34	10.61	10.62	8.96	8.84	0.47	0.46	45.64	45.56	52.38	52.19
750	6.12	6.12	9.83	9.83	8.14	8.05	0.18	0.18	52.69	52.58	53.19	52.00
800	5.81	5.81	8.76	8.75	7.45	7.40	0.01	0.00	59.62	59.50	52.10	51.29
850	5.70	5.70	8.10	8.10	6.74	6.70	0.40	0.39	66.56	66.43	51.37	52.40
900	5.44	5.44	7.24	7.24	6.17	6.15	0.64	0.61	73.52	73.38	51.24	51.19
1000	5.22	5.22	6.05	6.04	5.08	5.08	1.42	1.38	86.98	86.82	50.29	50.30

Frequency (MHz)	Insertion Loss (dB)		Input Return Loss (dB)		Output Return Loss (dB)		Deviation from Linear Loss (dB)		Insertion Phase (deg)		Input IP3 (dBm)	
	Vcontrol		Vcontrol		Vcontrol		Vcontrol		Vcontrol		Vcontrol	
	6V	10V	6V	10V	6V	10V	6V	10V	6V	10V	6V	10V
50	4.06	1.48	12.72	22.56	11.34	22.18	0.04	0.27	2.17	0.25	45.69	47.15
100	4.00	1.44	12.90	22.19	11.58	22.42	0.02	0.14	9.35	6.69	49.74	51.69
150	3.99	1.45	13.12	20.87	11.72	21.19	0.05	0.07	15.53	12.13	52.59	54.84
200	3.96	1.47	13.40	19.68	11.76	19.49	0.06	0.00	21.42	17.40	52.35	57.91
250	3.95	1.51	13.67	18.25	12.06	18.27	0.08	0.04	27.18	22.49	55.08	58.79
300	3.90	1.55	13.92	17.18	12.08	16.85	0.07	0.08	32.91	27.71	55.82	57.66
350	3.87	1.64	14.41	16.23	12.36	15.85	0.08	0.08	38.52	32.64	54.72	55.52
400	3.80	1.70	14.62	15.35	12.53	14.64	0.05	0.10	44.12	37.79	53.69	56.13
450	3.73	1.81	15.31	14.83	12.93	14.15	0.02	0.08	49.48	42.52	52.46	52.91
500	3.64	1.90	15.42	14.03	13.16	13.26	0.03	0.08	54.93	47.26	54.31	54.43
550	3.56	2.02	16.22	13.86	13.35	12.82	0.08	0.04	60.16	51.71	53.33	52.33
600	3.43	2.09	15.96	13.11	13.51	12.16	0.17	0.05	65.34	55.73	54.39	54.04
650	3.37	2.23	16.50	13.20	13.31	11.73	0.19	0.00	70.51	59.89	53.68	52.62
700	3.26	2.29	15.75	12.63	13.24	11.45	0.26	0.03	75.63	63.32	51.15	51.49
750	3.28	2.46	15.74	12.95	12.57	11.11	0.21	0.06	80.59	67.45	54.43	53.90
800	3.25	2.50	14.54	12.57	12.02	11.04	0.19	0.02	85.53	70.91	52.92	52.63
850	3.36	2.62	14.07	12.84	11.06	10.69	0.05	0.05	90.40	75.18	54.23	54.00
900	3.42	2.63	13.12	12.56	10.33	10.53	0.05	0.03	95.89	79.34	52.96	52.13
1000	4.00	3.04	11.91	12.42	8.81	9.85	0.70	0.22	107.25	88.90	53.31	52.57

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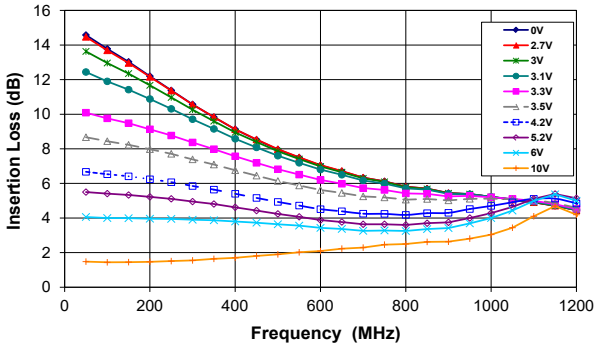
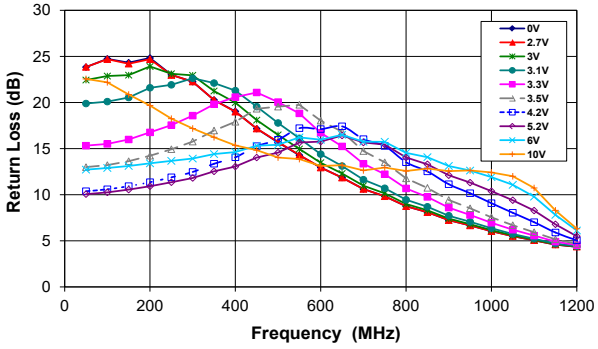
Typical Performance Curves

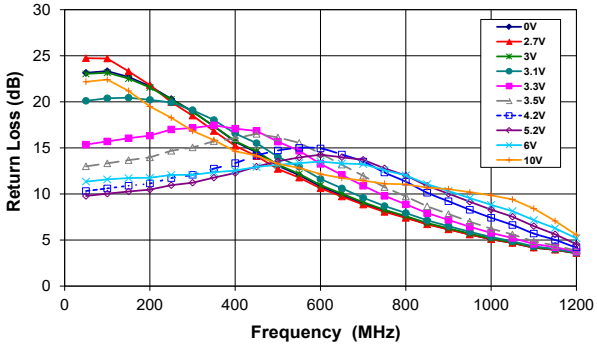
VAEQ-1000-75+
INSERTION LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES



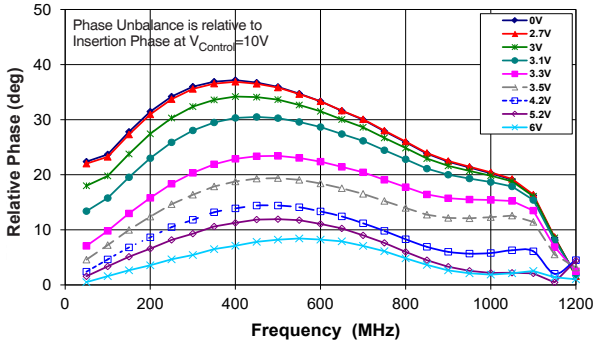
VAEQ-1000-75+
INPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES



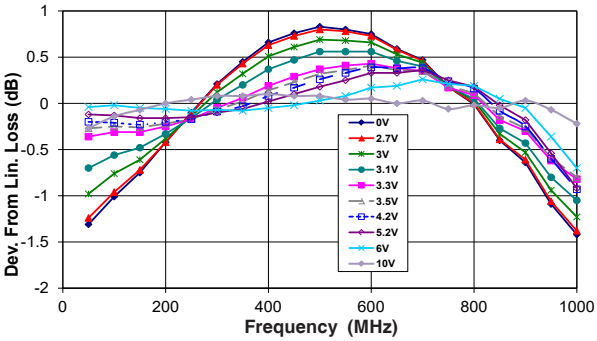
VAEQ-1000-75+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES



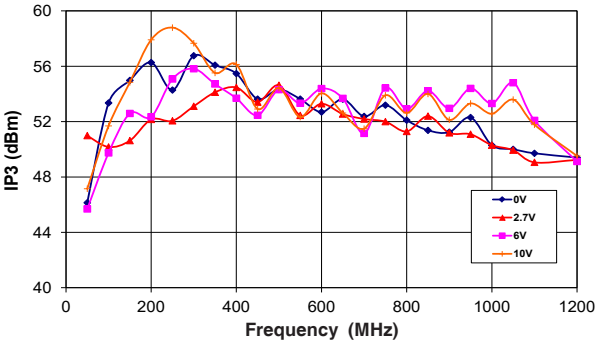
VAEQ-1000-75+
PHASE UNBALANCE Vs. FREQUENCY
OVER CONTROL VOLTAGES



VAEQ-1000-75+
DEVIATION FROM LINEAR LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES



VAEQ-1000-75+
IP3 Vs. FREQUENCY
OVER CONTROL VOLTAGES



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Voltage Variable Equalizer, 75Ω VAEQ-1000-75+

Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) Vcontrol		Input Return Loss (dB) Vcontrol		Output Return Loss (dB) Vcontrol		Deviation from Linear Loss (dB) Vcontrol		Insertion Phase (deg) Vcontrol		Input IP3 (dBm) Vcontrol	
	0V	2.7V	0V	2.7V	0V	2.7V	0V	2.7V	0V	2.7V	0V	2.7V
50	14.58	14.47	23.84	23.86	23.15	24.74	-1.31	-1.24	20.22	19.83	46.14	50.99
75	14.15	14.04	24.46	24.46	23.37	24.91	-1.12	-1.06	16.16	15.77	49.75	50.58
100	13.78	13.69	24.74	24.70	23.33	24.70	-1.01	-0.96	14.35	13.90	53.35	50.17
125	13.42	13.33	24.38	24.30	22.89	23.90	-0.89	-0.85	13.24	12.75	54.17	50.40
150	13.03	12.96	24.32	24.21	22.70	23.31	-0.75	-0.72	12.27	11.77	54.98	50.63
175	12.62	12.56	24.86	24.71	22.52	22.86	-0.59	-0.57	11.26	10.75	55.63	51.40
200	12.20	12.16	24.83	24.70	21.70	21.82	-0.42	-0.42	10.05	9.54	56.27	52.16
225	11.80	11.76	23.80	23.72	20.75	20.62	-0.26	-0.26	8.63	8.13	55.28	52.11
250	11.38	11.36	23.01	22.98	20.31	19.97	-0.10	-0.11	7.01	6.54	54.28	52.06
275	10.97	10.95	22.80	22.82	19.91	19.47	0.06	0.05	5.17	4.74	55.52	52.59
300	10.57	10.56	22.25	22.27	18.96	18.50	0.21	0.20	3.09	2.68	56.76	53.11
325	10.20	10.19	21.11	21.13	18.00	17.50	0.34	0.32	0.78	0.39	56.42	53.62
350	9.83	9.84	20.28	20.27	17.34	16.83	0.45	0.43	-1.62	-1.98	56.08	54.12
375	9.47	9.48	19.83	19.80	16.57	16.09	0.57	0.54	-4.16	-4.48	55.78	54.30
400	9.13	9.13	19.04	19.00	15.67	15.22	0.66	0.63	-6.94	-7.23	55.47	54.47
425	8.82	8.84	17.92	17.90	15.02	14.59	0.71	0.68	-9.84	-10.09	54.55	53.94
450	8.52	8.54	17.16	17.17	14.51	14.10	0.76	0.73	-12.75	-12.97	53.63	53.41
475	8.23	8.24	16.56	16.60	13.77	13.39	0.81	0.78	-15.80	-15.97	53.98	54.02
500	7.96	7.98	15.68	15.72	13.05	12.71	0.83	0.80	-18.96	-19.10	54.32	54.63
525	7.72	7.74	14.80	14.84	12.58	12.27	0.82	0.79	-22.19	-22.29	53.98	53.54
550	7.49	7.51	14.28	14.31	12.04	11.77	0.80	0.78	-25.45	-25.52	53.63	52.45
575	7.26	7.28	13.76	13.77	11.34	11.11	0.78	0.75	-28.70	-28.74	53.16	52.87
600	7.04	7.06	12.95	12.94	10.81	10.61	0.75	0.73	-32.00	-32.01	52.69	53.29
625	6.85	6.87	12.26	12.25	10.42	10.24	0.69	0.67	-35.49	-35.48	53.16	52.92
650	6.70	6.72	11.86	11.85	9.88	9.72	0.59	0.58	-38.90	-38.87	53.62	52.55
675	6.53	6.54	11.30	11.31	9.32	9.19	0.52	0.51	-42.16	-42.09	53.00	52.37
700	6.33	6.34	10.61	10.62	8.96	8.84	0.47	0.46	-45.64	-45.56	52.38	52.19
725	6.20	6.21	10.13	10.14	8.61	8.51	0.34	0.34	-49.31	-49.22	52.79	52.10
750	6.12	6.12	9.83	9.83	8.14	8.05	0.18	0.18	-52.69	-52.58	53.19	52.00
775	5.97	5.97	9.31	9.30	7.75	7.68	0.08	0.08	-55.96	-55.86	52.65	51.65
800	5.81	5.81	8.76	8.75	7.45	7.40	-0.01	0.00	-59.62	-59.50	52.10	51.29
825	5.74	5.74	8.41	8.40	7.09	7.04	-0.19	-0.17	-63.35	-63.23	51.74	51.85
850	5.70	5.70	8.10	8.10	6.74	6.70	-0.40	-0.39	-66.56	-66.43	51.37	52.40
875	5.57	5.57	7.64	7.63	6.47	6.44	-0.52	-0.50	-69.74	-69.60	51.31	51.80
900	5.44	5.44	7.24	7.24	6.17	6.15	-0.64	-0.61	-73.52	-73.38	51.24	51.19
930	5.43	5.43	6.93	6.92	5.78	5.76	-0.93	-0.90	-77.68	-77.55	-	-
950	5.39	5.38	6.67	6.66	5.60	5.59	-1.09	-1.06	-80.04	-79.90	52.30	51.09
975	5.27	5.26	6.29	6.28	5.39	5.39	-1.22	-1.19	-83.46	-83.32	51.30	50.70
1000	5.22	5.22	6.05	6.04	5.08	5.08	-1.42	-1.38	-86.98	-86.82	50.29	50.30

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Voltage Variable Equalizer, 75Ω VAEQ-1000-75+

Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) Vcontrol		Input Return Loss (dB) Vcontrol		Output Return Loss (dB) Vcontrol		Deviation from Linear Loss (dB) Vcontrol		Insertion Phase (deg) Vcontrol		Input IP3 (dBm) Vcontrol	
	6V	10V	6V	10V	6V	10V	6V	10V	6V	10V	6V	10V
50	4.06	1.48	12.72	22.56	11.34	22.18	-0.04	-0.27	-2.17	-0.25	45.69	47.15
75	4.02	1.45	12.85	22.63	11.52	22.66	-0.02	-0.20	-6.00	-3.74	47.72	49.42
100	4.00	1.44	12.90	22.19	11.58	22.42	-0.02	-0.14	-9.35	-6.69	49.74	51.69
125	4.01	1.44	12.93	21.45	11.61	21.78	-0.05	-0.10	-12.50	-9.46	51.17	53.27
150	3.99	1.45	13.12	20.87	11.72	21.19	-0.05	-0.07	-15.53	-12.13	52.59	54.84
175	3.96	1.45	13.36	20.44	11.79	20.48	-0.04	-0.03	-18.49	-14.81	52.47	56.38
200	3.96	1.47	13.40	19.68	11.76	19.49	-0.06	0.00	-21.42	-17.40	52.35	57.91
225	3.96	1.49	13.42	18.78	11.86	18.70	-0.08	0.02	-24.32	-19.93	53.72	58.35
250	3.95	1.51	13.67	18.25	12.06	18.27	-0.08	0.04	-27.18	-22.49	55.08	58.79
275	3.91	1.53	13.90	17.87	12.10	17.67	-0.07	0.06	-30.00	-25.11	55.45	58.23
300	3.90	1.55	13.92	17.18	12.08	16.85	-0.07	0.08	-32.91	-27.71	55.82	57.66
325	3.90	1.60	14.06	16.51	12.22	16.27	-0.09	0.08	-35.77	-30.20	55.27	56.59
350	3.87	1.64	14.41	16.23	12.36	15.85	-0.08	0.08	-38.52	-32.64	54.72	55.52
375	3.82	1.67	14.61	15.95	12.38	15.21	-0.05	0.10	-41.29	-35.17	54.21	55.83
400	3.80	1.70	14.62	15.35	12.53	14.64	-0.05	0.10	-44.12	-37.79	53.69	56.13
425	3.78	1.77	14.89	14.91	12.82	14.43	-0.05	0.08	-46.84	-40.27	53.08	54.52
450	3.73	1.81	15.31	14.83	12.93	14.15	-0.02	0.08	-49.48	-42.52	52.46	52.91
475	3.68	1.85	15.41	14.56	12.93	13.59	0.01	0.09	-52.22	-44.79	53.39	53.67
500	3.64	1.90	15.42	14.03	13.16	13.26	0.03	0.08	-54.93	-47.26	54.31	54.43
525	3.60	1.96	15.82	13.81	13.41	13.18	0.06	0.06	-57.56	-49.67	53.82	53.38
550	3.56	2.02	16.22	13.86	13.35	12.82	0.08	0.04	-60.16	-51.71	53.33	52.33
575	3.50	2.06	16.09	13.56	13.30	12.32	0.12	0.04	-62.71	-53.61	53.86	53.19
600	3.43	2.09	15.96	13.11	13.51	12.16	0.17	0.05	-65.34	-55.73	54.39	54.04
625	3.39	2.15	16.27	13.06	13.57	12.09	0.18	0.04	-68.00	-57.92	54.04	53.33
650	3.37	2.23	16.50	13.20	13.31	11.73	0.19	0.00	-70.51	-59.89	53.68	52.62
675	3.31	2.26	16.08	12.90	13.19	11.45	0.23	0.01	-72.96	-61.62	52.42	52.06
700	3.26	2.29	15.75	12.63	13.24	11.45	0.26	0.03	-75.63	-63.32	51.15	51.49
725	3.26	2.37	15.84	12.78	13.01	11.37	0.24	-0.01	-78.27	-65.28	52.79	52.70
750	3.28	2.46	15.74	12.95	12.57	11.11	0.21	-0.06	-80.59	-67.45	54.43	53.90
775	3.26	2.48	15.07	12.71	12.30	11.04	0.21	-0.04	-82.92	-69.33	53.68	53.27
800	3.25	2.50	14.54	12.57	12.02	11.04	0.19	-0.02	-85.53	-70.91	52.92	52.63
825	3.30	2.56	14.39	12.77	11.51	10.86	0.13	-0.03	-88.09	-72.77	53.58	53.32
850	3.36	2.62	14.07	12.84	11.06	10.69	0.05	-0.05	-90.40	-75.18	54.23	54.00
875	3.37	2.61	13.47	12.60	10.75	10.67	0.02	0.00	-92.90	-77.51	53.60	53.07
900	3.42	2.63	13.12	12.56	10.33	10.53	-0.05	0.03	-95.89	-79.34	52.96	52.13
930	3.59	2.74	12.91	12.71	9.78	10.25	-0.24	-0.04	-99.27	-81.74	-	-
950	3.69	2.81	12.62	12.63	9.55	10.19	-0.36	-0.07	-101.35	-83.88	54.40	53.31
975	3.80	2.89	12.15	12.42	9.26	10.13	-0.49	-0.11	-104.30	-86.69	53.86	52.94
1000	4.00	3.04	11.91	12.42	8.81	9.85	-0.70	-0.22	-107.25	-88.90	53.31	52.57

Notes
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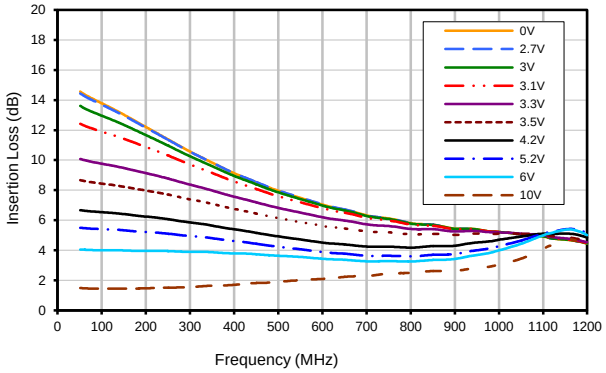
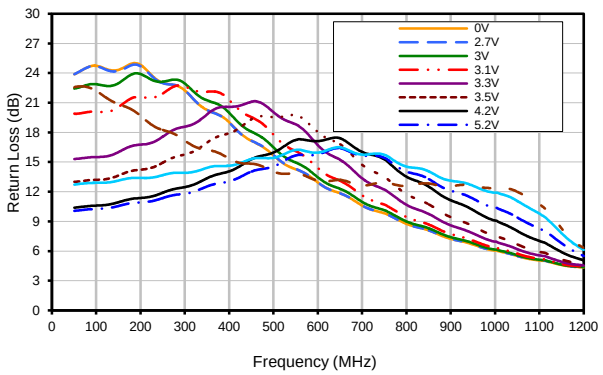
Voltage Variable Equalizer, 75Ω VAEQ-1000-75+

Typical Performance Curves

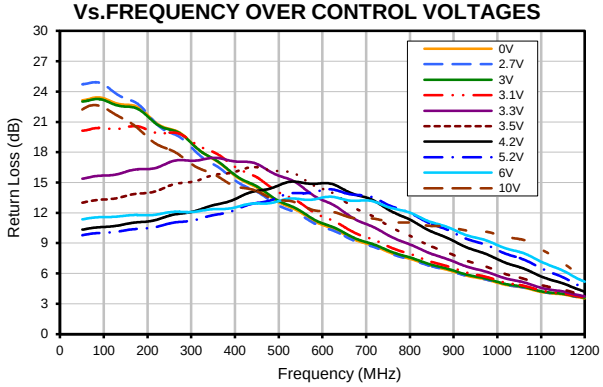
INSERTION LOSS
Vs.FREQUENCY OVER CONTROL VOLTAGES



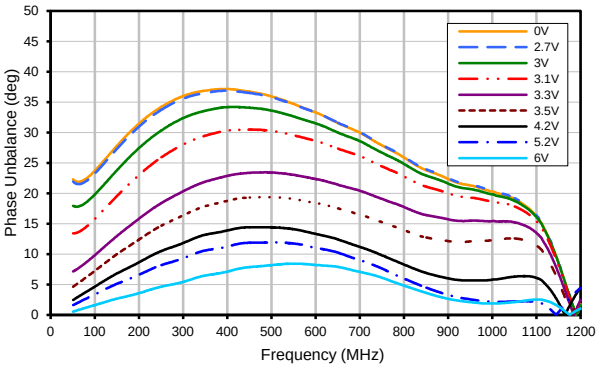
INPUT RETURN LOSS
Vs.FREQUENCY OVER CONTROL VOLTAGES



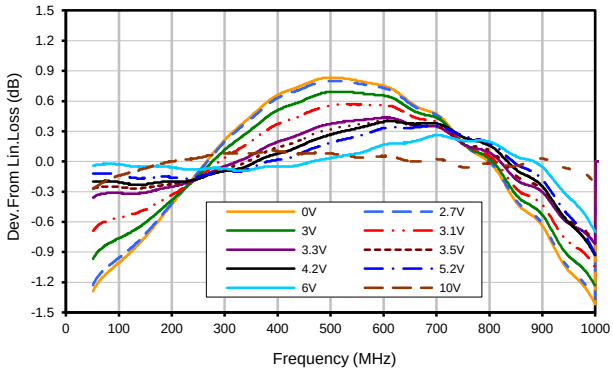
OUTPUT RETURN LOSS
Vs.FREQUENCY OVER CONTROL VOLTAGES



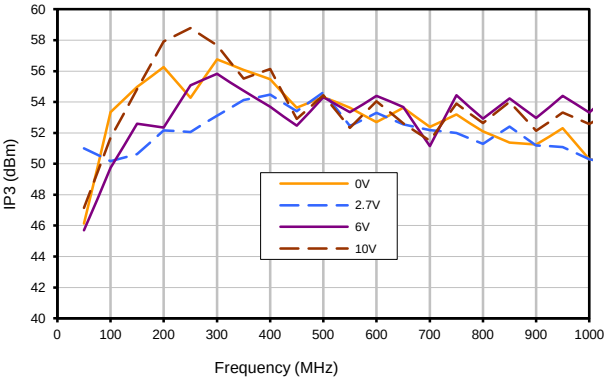
PHASE UNBALANCE
Vs.FREQUENCY OVER CONTROL VOLTAGES



DEVIATION FROM LINEAR LOSS
Vs.FREQUENCY OVER CONTROL VOLTAGES



IP3
Vs.FREQUENCY OVER CONTROL VOLTAGES



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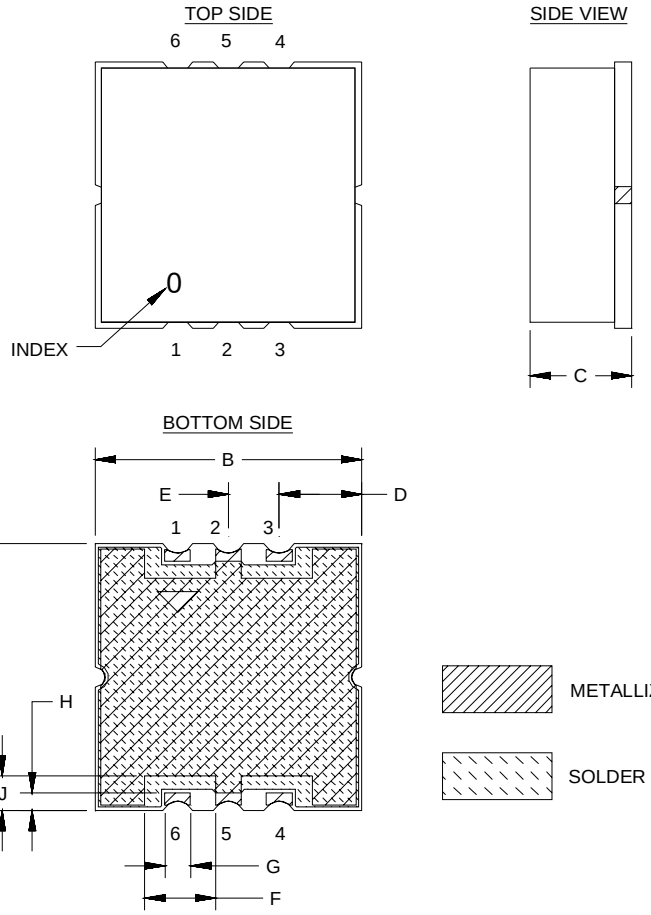
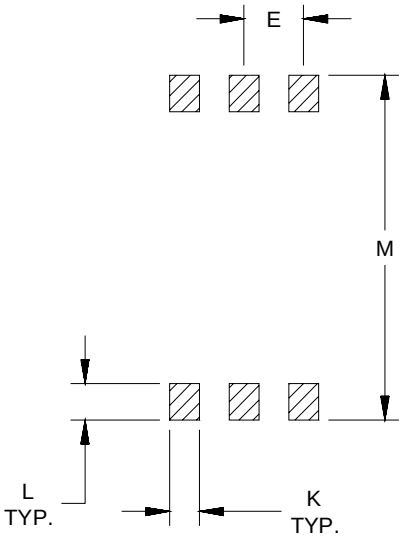
Case Style HE

HE1354

Outline Dimensions



PCB Land Pattern



Suggested Layout

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAMS
HE1354	.394 (10.01)	.394 (10.01)	.150 (3.81)	.122 (3.10)	.075 (1.90)	.098 (2.49)	.038 (0.97)	.026 (0.66)	.051 (1.29)	.038 (0.97)	.046 (1.17)	.434 (11.02)	0.7

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

Notes:

1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Termination finish:
   For RoHS Case Styles: 3-5 µ inch (.08-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate.
   For RoHS-5 Case Styles: Tin-Lead plate.

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RF/IF MICROWAVE COMPONENTS

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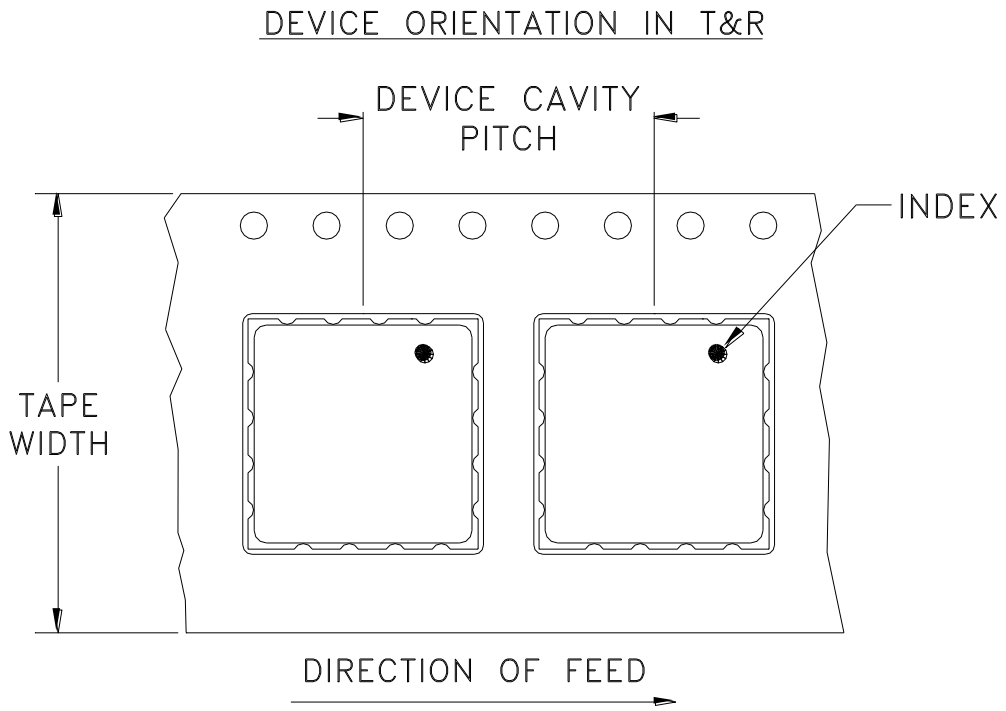
Tape & Reel Packaging TR-F37



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
24	16	7	Small quantity standards (see note)	10
				20
				50
				100
		13	Standard	200
				500

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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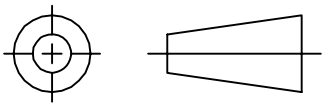
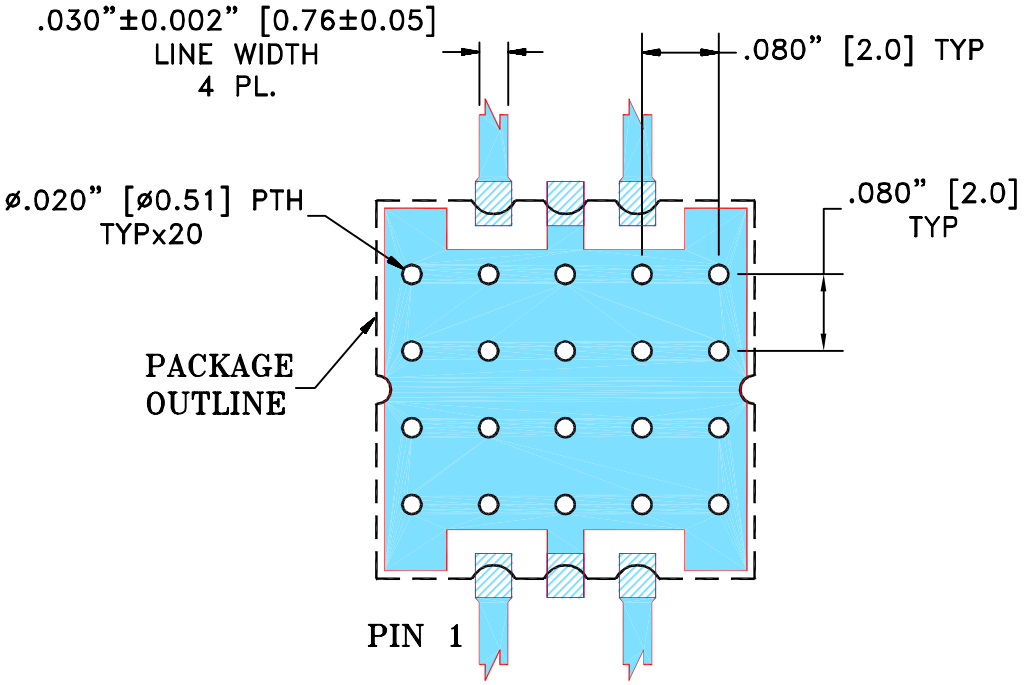
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M124493	NEW RELEASE (FROM RAVON)	09/09	EM	YB
OR	R77678	NEW RELEASE (FROM RAVON)	09/09	EM	YB

SUGGESTED MOUNTING CONFIGURATION
FOR HE1354 CASE STYLE, qg PIN CONNECTION, 75 OHM



NOTE:

1. TRACE WIDTH IS SHOWN FOR RO4350B WITH DIELECTRIC THICKNESS .030"±.002". COPPER: 1/2 OZ. EACH SIDE.
   FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC
(SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	EM (RAVON)	16 SEP 09
TOLERANCES ON:	CHECKED	HH (RAVON)	21 SEP 09
2 PL DECIMALS ±	APPROVED	YB (RAVON)	21 SEP 09
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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ASHEETA1.DWG REV:A DATE:01/12/95

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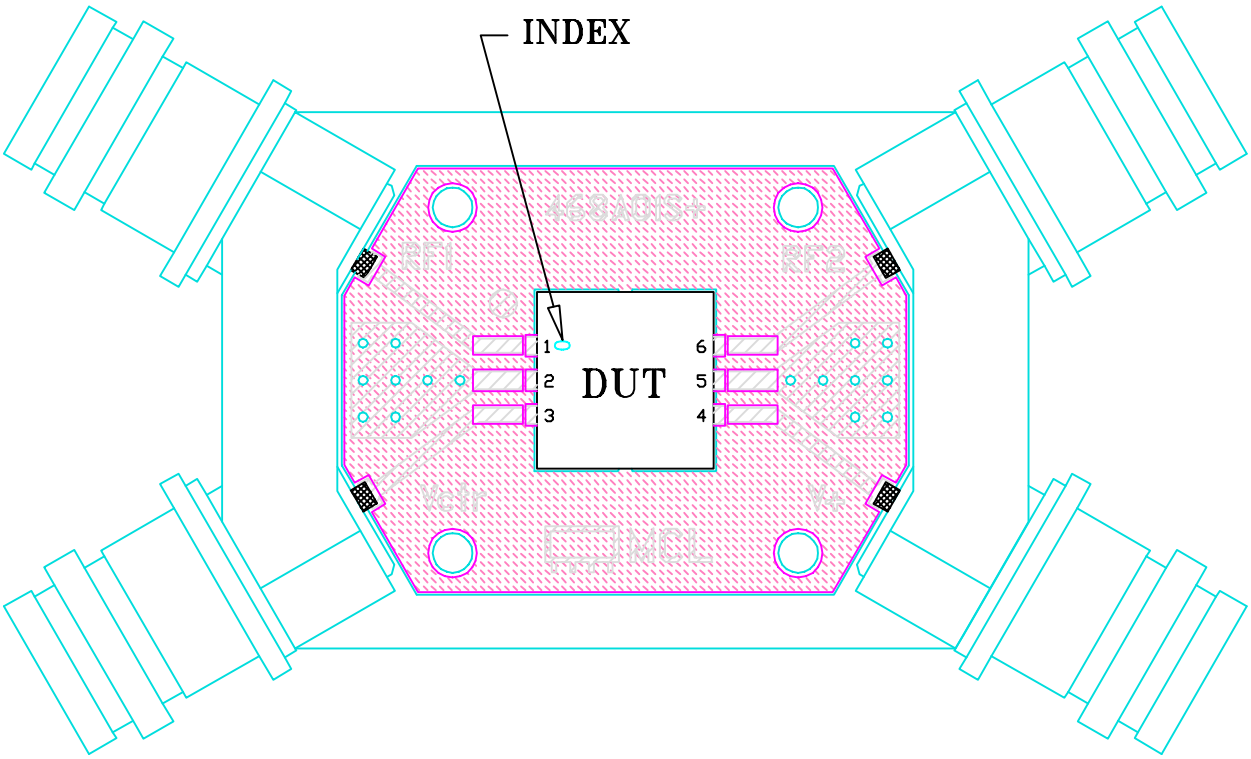
PL, qg, HE1354, TB-549+, 75 OHM

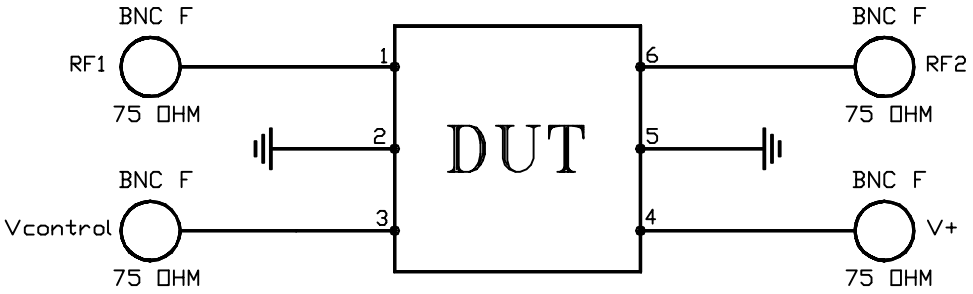
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-315	OR

FILE:	SCALE:	SHEET:
98PL315	5:1	1 OF 1

Evaluation Board and Circuit



TB-549+



Schematic Diagram

Notes:

1. BNC Female connectors.
2. PCB Material: Rogers RO4350B or equivalent, Dielectric constant=3.48, Thickness=.030 inch.

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Environmental Specifications ENV03T6

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Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	0° to 85° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
HAST	130°C, 85% RH, 96 hours	JESD22-A110
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutectic Process: 225°C peak Pb-Free Process, 245°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 20-2000 Hz, 4 times in each of three axes (total 12)	MIL-STD-883, Method 2007.3, Condition A
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
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

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