Ceramic

Diplexer

LDPG-272-492+

50Ω DC to 5750 MHz (DC-2700, 4900-5750 MHz)



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-10

+RoHS Compliant

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500,1000, 4000

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature*	-55°C to 100°C
RF Power Input**	2W at 25°C

* 12 months max.
** passband rating, derate linearly to 1W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Pad Connections

Low Pass Port	6
High Pass Port	4
Common Port	2
Ground	1,3,5

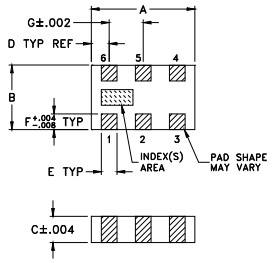
Features

- small size 0805(2.0 x 1.25 mm)
- low insertion loss, 0.7 dB typ.
- high rejection
- temperature stable
- LTCC construction

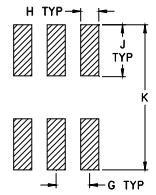
Applications

- communication systems
- ISM
- WiFi

Outline Drawing



PCB Land Pattern



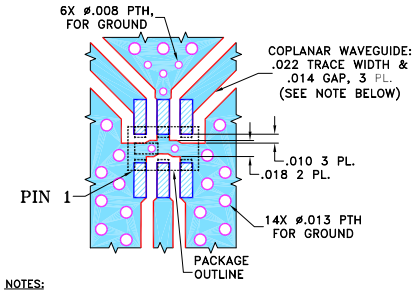
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F
.079	.049	.020	.014	.012	.012
2.01	1.24	0.51	0.36	0.30	0.30

G	H	J	K		wt
.026	.014	.039	.110		grams
0.66	0.36	1.00	2.80		.005

Demo Board MCL P/N: TB-798+
Suggested PCB Layout (PL-441)



NOTES:
1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP 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 SOLDER MASK.

Electrical Specifications[1,2] at 25°C

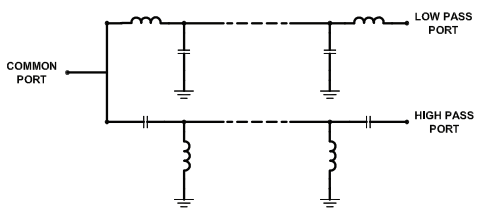
Parameter		Port	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	Low Pass	DC - 2700	—	0.5	0.9	dB
		Band Pass	4900 - 5750	—	0.7	0.9	
	Return Loss	Low Pass	2300 - 2700	10	16	—	dB
		Band Pass	4900 - 5750	10	14	—	
		Common	2300 - 2700	—	16	—	
			4900 - 5750	—	14	—	
Stop Band Isolation		Band Pass	DC - 2700	18	23	—	dB
			9800- 11900	—	17	—	
		Low Pass	4800 - 8000	20	30	—	dB

[1] *In Application where DC voltage is present at either input or output port, coupling capacitors are required.*
[2] *Measured on Mini-Circuits Characterization Test Board TB-798+*

Typical Performance Data at 25°C

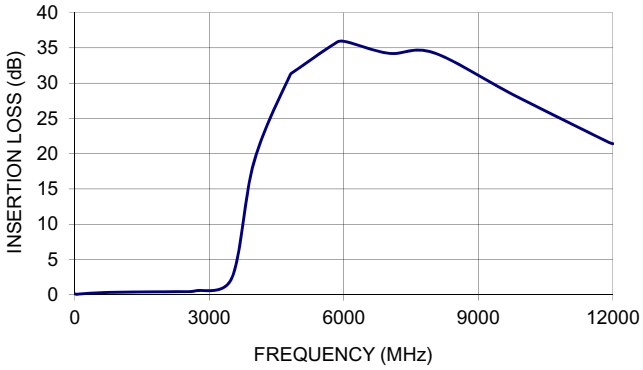
Frequency (MHz)	Insertion Loss (dB)		Return Loss (dB)		
	Low Pass Port	High Pass Port	Common Port	Low Pass Port	High Pass Port
10	0.10	58.83	47.75	37.84	0.04
50	0.05	45.92	38.49	34.75	0.03
100	0.10	41.84	33.28	32.98	0.03
800	0.34	25.56	15.37	14.76	0.08
2300	0.43	27.39	17.15	21.24	0.25
2700	0.56	37.44	18.10	19.31	0.33
3500	2.30	8.69	14.46	16.57	3.00
4000	18.88	1.05	11.25	0.80	14.70
4800	31.11	0.54	18.24	0.39	25.61
4900	31.67	0.54	19.56	0.38	26.15
5750	35.40	0.59	18.12	0.33	18.97
6000	35.94	0.72	14.00	0.31	14.49
7000	34.23	1.84	6.46	0.17	7.46
8000	34.32	6.18	2.51	0.07	2.74
9800	28.29	32.63	0.51	0.19	0.31
11900	21.63	20.94	0.43	0.49	0.51
12000	21.41	20.85	0.41	0.51	0.57

Functional Schematic

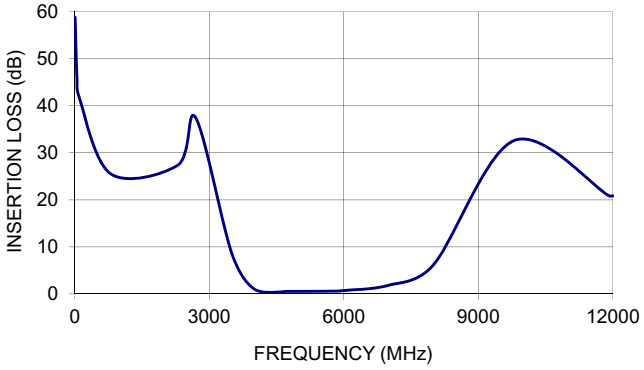


Notes
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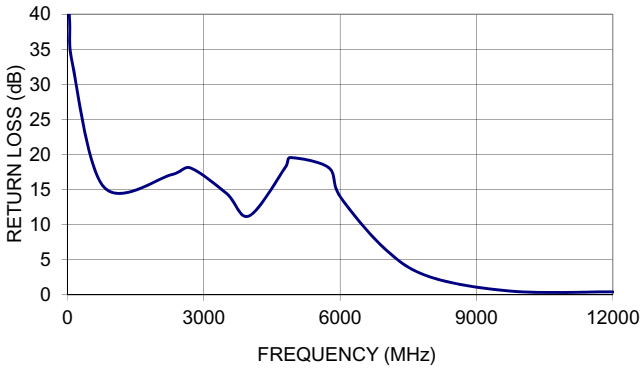
LDPG-272-492+
LOW FREQUENCY PORT INSERTION LOSS (Pin=0dBm)



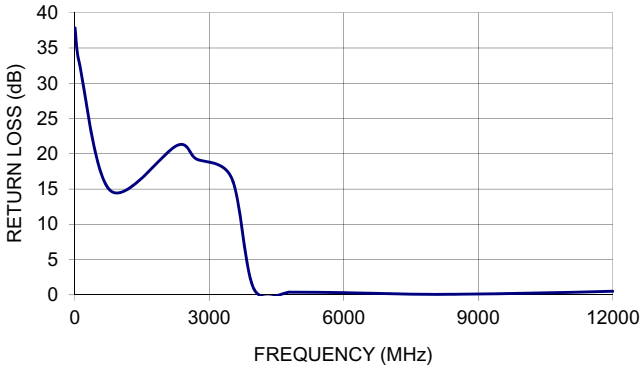
LDPG-272-492+
HIGH FREQUENCY PORT INSERTION LOSS (Pin=0dBm)



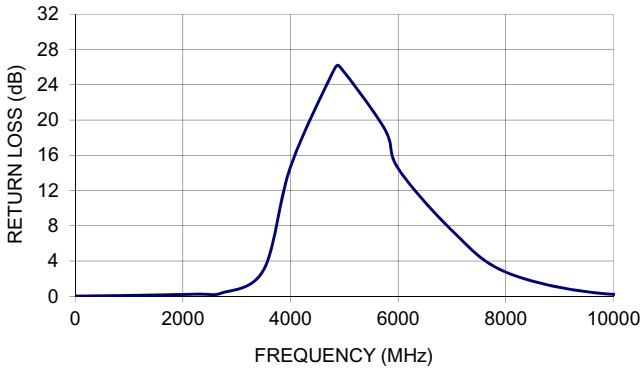
LDPG-272-492+
COMMON PORT RETURN LOSS (Pin=0 dBm)



LDPG-272-492+
LOW FREQUENCY PORT RETURN LOSS (Pin=0dBm)



LDPG-272-492+
HIGH FREQUENCY PORT RETURN LOSS (Pin=0dBm)



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Ceramic Diplexer LDPG-272-492+

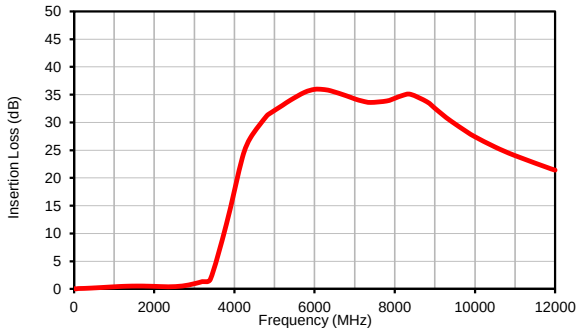
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)		CROSS OVER ISOLATION (dB) (between LPF and HPF)	RETURN LOSS (dB)		
	Low Pass port	High Pass port		Common port	Low Pass port	High Pass port
10.0	0.10	58.83	62.01	47.75	37.84	0.04
50.0	0.05	45.92	47.73	38.49	34.75	0.03
100.0	0.10	41.84	41.73	33.28	32.98	0.03
200.0	0.12	35.89	35.78	26.83	26.13	0.03
300.0	0.15	32.52	32.34	23.48	22.67	0.03
400.0	0.18	30.20	30.02	20.74	20.11	0.04
500.0	0.22	28.54	28.21	18.98	18.31	0.04
600.0	0.26	27.24	26.85	17.44	16.84	0.05
700.0	0.30	26.30	25.73	16.33	15.68	0.07
800.0	0.34	25.56	24.85	15.37	14.76	0.08
900.0	0.38	25.00	24.10	14.54	14.02	0.09
1000.0	0.42	24.62	23.51	13.92	13.45	0.10
1100.0	0.46	24.31	23.06	13.36	12.97	0.12
1200.0	0.50	24.19	22.77	12.95	12.63	0.13
1300.0	0.52	24.06	22.52	12.66	12.43	0.15
1400.0	0.54	24.10	22.39	12.43	12.30	0.15
1500.0	0.55	24.13	22.37	12.40	12.37	0.17
1600.0	0.55	24.25	22.40	12.39	12.50	0.18
1700.0	0.55	24.40	22.51	12.54	12.78	0.19
1800.0	0.54	24.59	22.77	12.81	13.28	0.20
1900.0	0.52	24.86	23.16	13.24	13.93	0.21
2000.0	0.50	25.17	23.71	13.88	14.90	0.22
2300.0	0.43	27.39	27.40	17.15	21.24	0.25
2400.0	0.43	29.10	29.99	18.75	26.60	0.26
2700.0	0.56	37.44	32.90	18.10	19.31	0.33
3000.0	0.97	20.74	19.57	12.50	11.76	0.55
3200.0	1.36	15.83	14.31	10.86	10.26	0.91
3400.0	1.76	11.88	9.85	11.91	13.21	1.79
3800.0	11.65	1.73	11.60	11.49	1.84	12.31
4200.0	23.68	0.78	23.31	12.55	0.54	17.92
4400.0	27.21	0.65	28.35	14.17	0.45	21.26
4800.0	31.11	0.54	33.55	18.24	0.39	25.61
4900.0	31.67	0.54	34.20	19.56	0.38	26.15
5200.0	33.06	0.51	35.54	23.85	0.38	38.09
5400.0	34.00	0.52	36.35	24.56	0.36	30.43
5750.0	35.40	0.59	37.99	18.12	0.33	18.97
6000.0	35.94	0.72	39.10	14.00	0.31	14.49
6200.0	35.92	0.85	39.93	11.82	0.29	12.40
6400.0	35.68	1.03	40.48	10.04	0.25	10.72
6800.0	34.76	1.51	40.31	7.46	0.20	8.37
7000.0	34.23	1.84	40.00	6.46	0.17	7.46
7200.0	33.82	2.26	39.30	5.60	0.15	6.58
7400.0	33.58	2.84	38.81	4.78	0.12	5.63
7800.0	33.85	4.75	38.11	3.21	0.09	3.63
8000.0	34.32	6.18	37.27	2.51	0.07	2.74
8200.0	34.85	7.98	36.80	1.92	0.06	2.03
8400.0	35.03	10.16	36.06	1.44	0.07	1.46
8800.0	33.71	15.80	35.47	0.86	0.09	0.75
9000.0	32.55	19.42	34.79	0.71	0.09	0.56
9200.0	31.35	24.03	34.07	0.62	0.11	0.44
9400.0	30.24	30.81	33.17	0.57	0.13	0.38
9800.0	28.29	32.63	32.48	0.51	0.19	0.31
10000.0	27.41	28.14	31.64	0.49	0.22	0.30
10500.0	25.58	23.61	30.74	0.46	0.31	0.35
11000.0	24.02	21.91	29.88	0.43	0.39	0.40
11900.0	21.63	20.94	29.35	0.43	0.49	0.51
12000.0	21.41	20.85	28.60	0.41	0.51	0.57

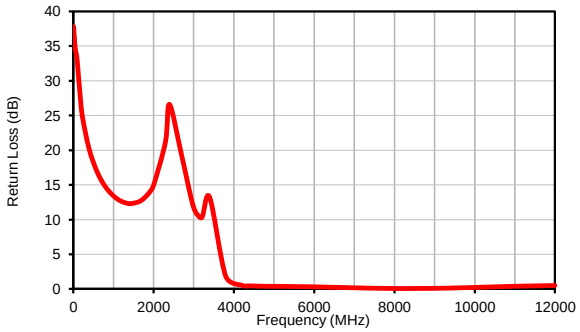
Ceramic Diplexer LDPG-272-492+

Typical Performance Curves

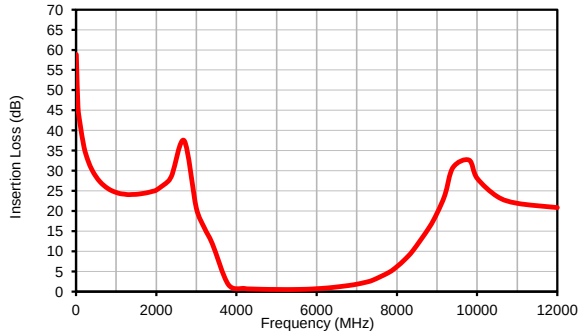
Low Pass Port Insertion Loss



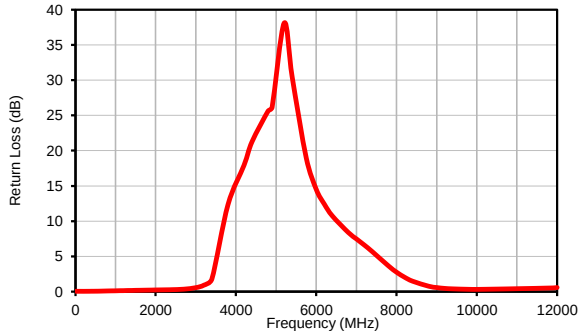
Low Pass Port Return Loss



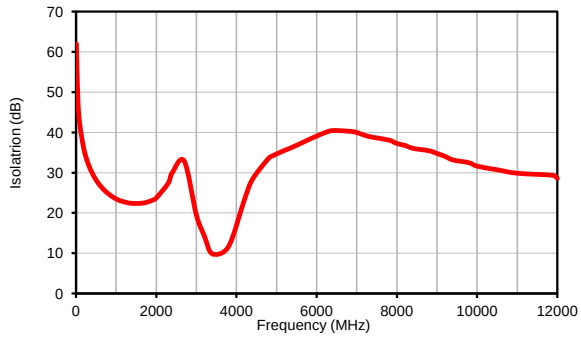
High Pass Port Insertion Loss



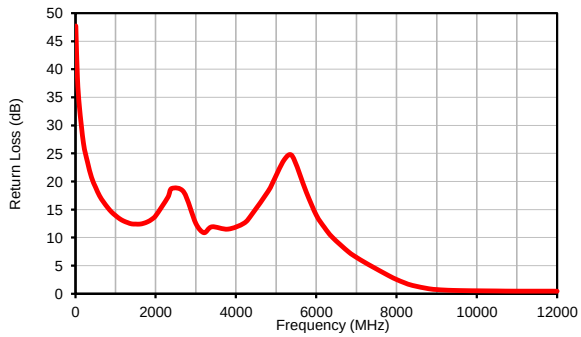
High Pass Port Return Loss



Cross over Isolation

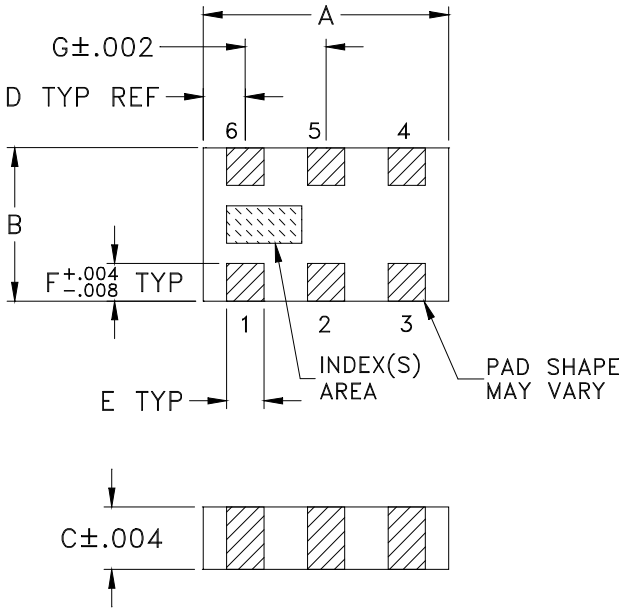


Common Port Return Loss

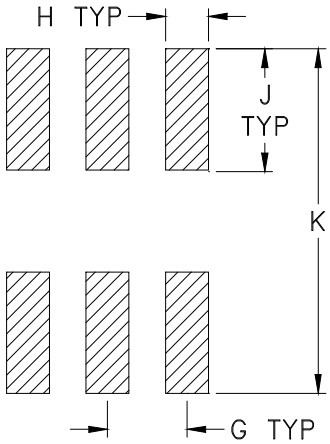


GE0805C-10

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	WT.GRAM
GE0805C-10	.079 (2.00)	.049 (1.25)	.020 (0.50)	.014 (0.35)	.012 (0.30)	.012 (0.30)	.026 (0.65)	.014 (0.35)	.039 (1.00)	.110 (2.80)	.005

Dimensions are in inches (mm). Tolerances: 2Pl. ± .01; 3 Pl. ± .005

Notes:

1. Open style, ceramic base.
2. Termination finish: For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate over Nickel plate. All models, no (+) suffix.
3. Line width should be designed to match 50Ω characteristic depending on PCB material and thickness.

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Tape & Reel Packaging TR-F114

DEVICE ORIENTATION IN T&R

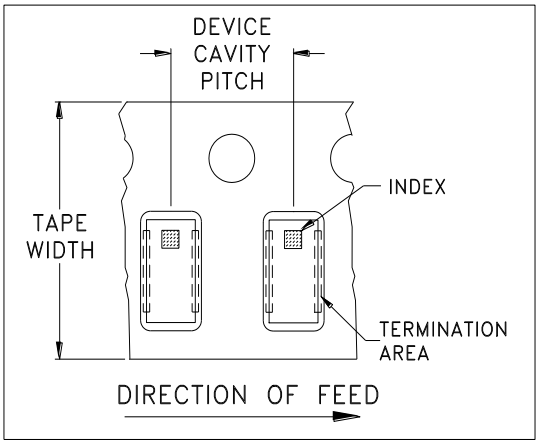


ILLUSTRATION 1

Applicable Case Styles	
GE0805C	JC0603C
GE0805C-1	JC0603C-4
GE0805C-1AP	JC0603C-6
GE0805C-7	
GE0805C-9	
GE0805C-10	
GE0805C-11	
GE0805C-12	

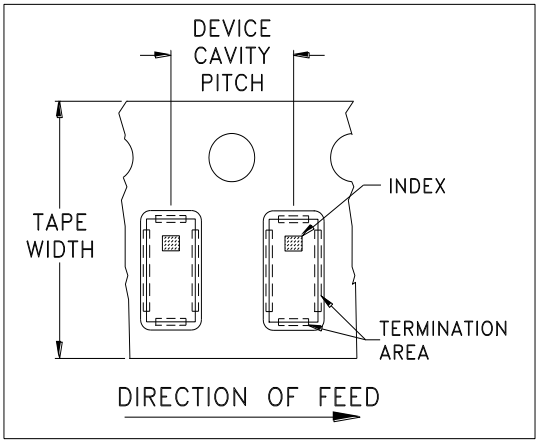


ILLUSTRATION 2

Applicable Case Styles	
GE0805C-2	JC0603C-1
GE0805C-3	JC0603C-2
GE0805C-4	JC0603C-3
GE0805C-5	JC0603C-5
GE0805C-6	JC0603C-7
GE0805C-8	
GE0805C-15	

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	4000

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

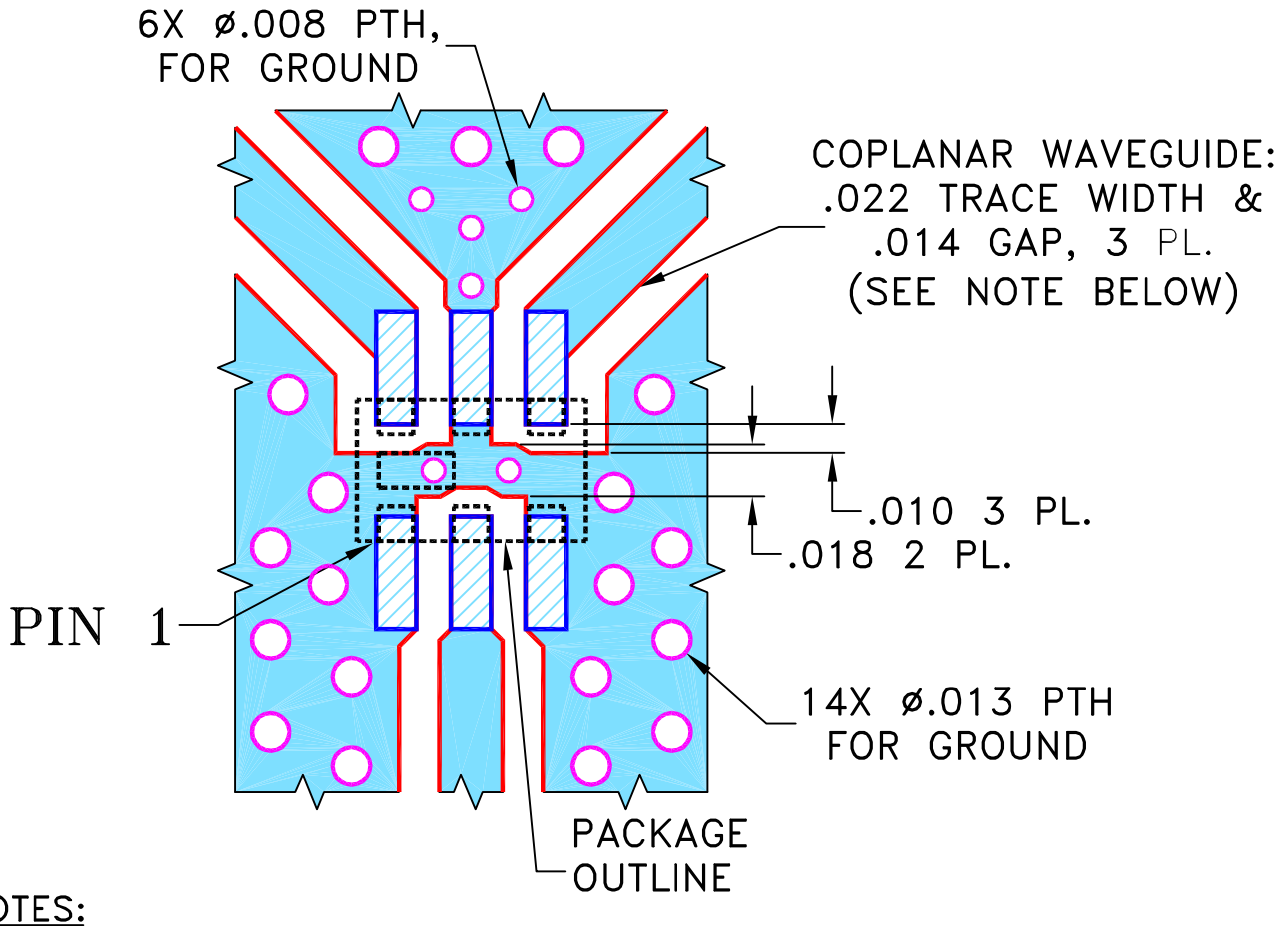
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THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M148538	NEW RELEASE	10/14/14	GF	MY

SUGGESTED MOUNTING CONFIGURATION
FOR GE0805C-10 CASE STYLE, "06DP03" PIN CODE



NOTES:

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

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	GF	10/07/14
TOLERANCES ON:	CHECKED	AV	10/14/14
2 PL DECIMALS ±	APPROVED	MY	10/14/14
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

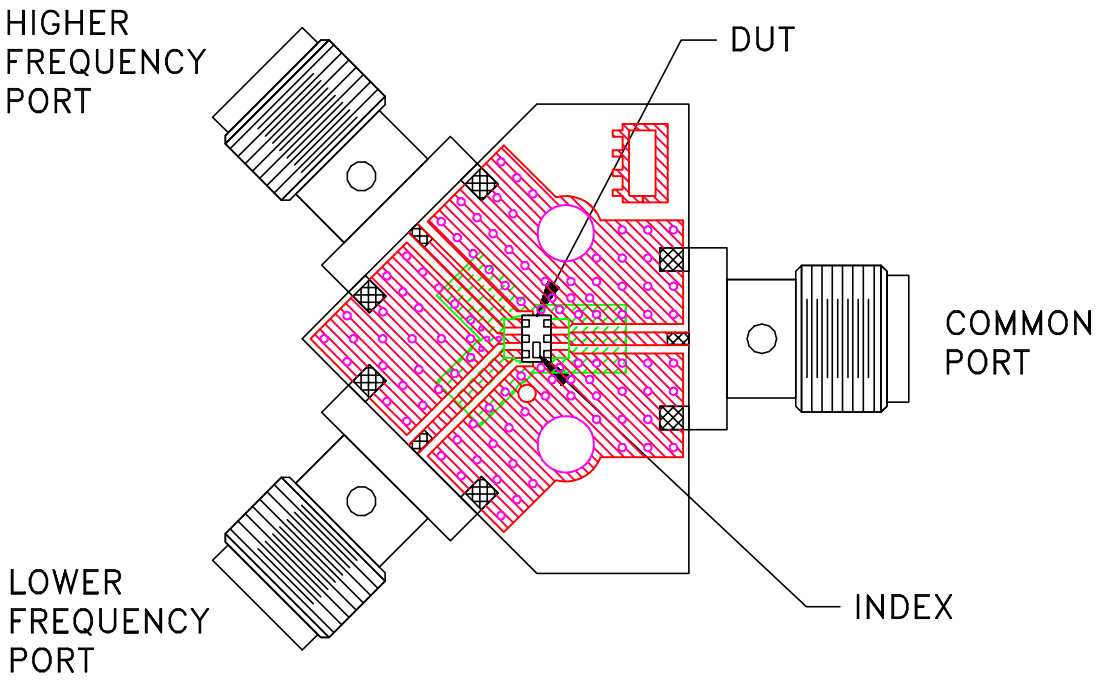
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PL, 06DP03, GE0805C-10, TB-798+

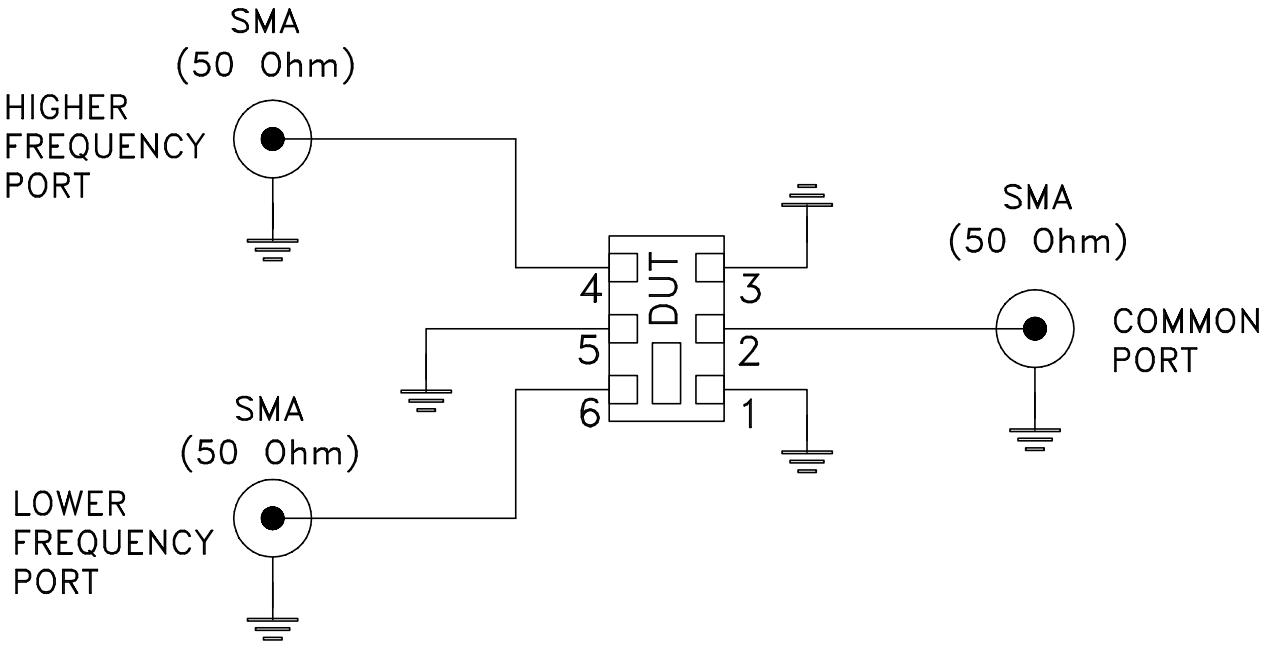
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-441	OR

FILE:	SCALE:	SHEET:
98PL441	15:1	1 OF 1

Evaluation Board and Circuit



TB-798+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.010 inch.

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Mini-Circuits

Environmental Specifications ENV06

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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
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
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°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, 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

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