Engineering Development Model

RF Transformer TCN4-ED12817/34B2

Impedance Ratio : 4

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE: FV1206-1

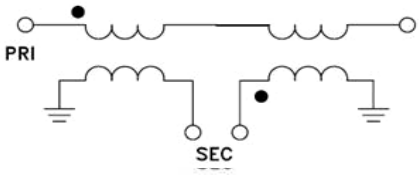
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		700		1700	MHz
Insertion Loss *	**1 dB Bandwidth**		700 - 1700		MHz

Note: * Insertion Loss is referenced to mid-band loss, 0.76dB typ.

MAXIMUM RATINGS	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Input RF Power **	3 W

** Derate linearly to 2.5W at 100°C

Configuration : J



PIN CONNECTIONS	
PRIMARY DOT (UNBALANCED PORT)	5
PRIMARY (CTND)	4,6
SECONDARY DOT (BALANCED)	3
SECONDARY (BALANCED)	1
NOT USED	2

Pads 1,3,4,6 are DC-connected internally.

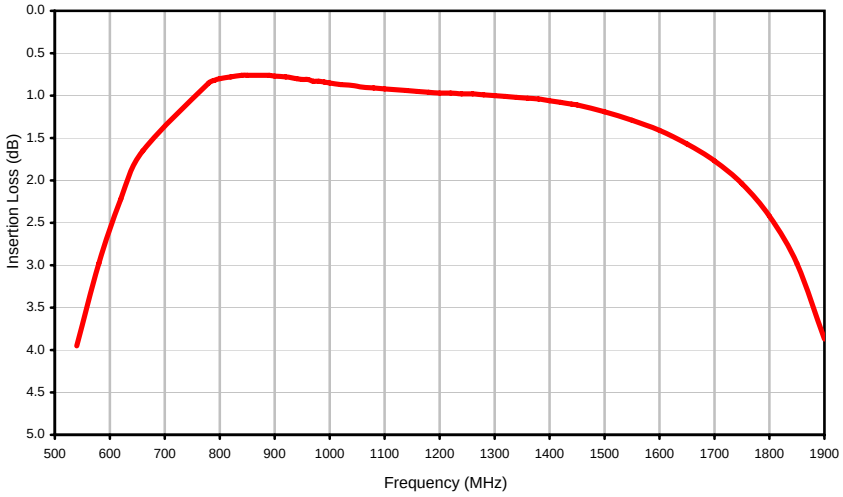
RF Transformer TCN4-ED12817/34B2

Typical Performance Data

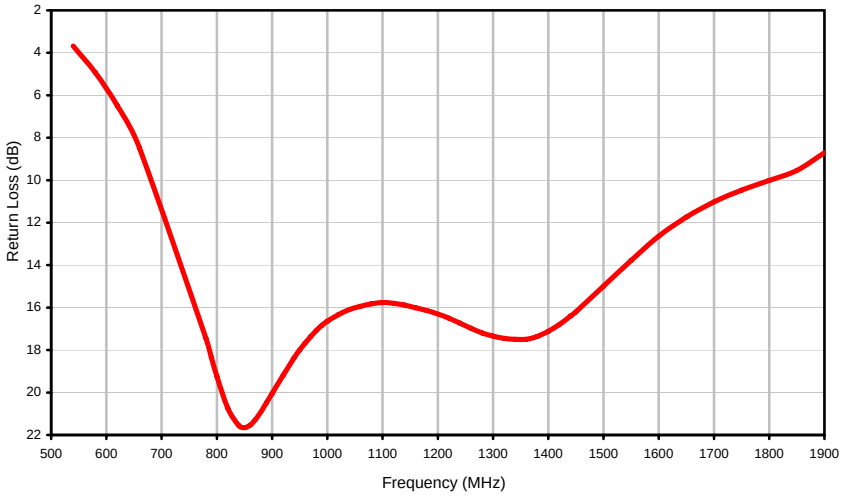
FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
540	3.95	3.68
580	2.98	4.93
620	2.22	6.50
660	1.65	8.48
780	0.85	17.44
790	0.82	18.34
800	0.80	19.24
820	0.78	20.76
840	0.76	21.56
850	0.76	21.65
860	0.76	21.54
870	0.76	21.27
880	0.76	20.90
890	0.76	20.48
900	0.77	20.05
920	0.78	19.19
940	0.80	18.36
950	0.81	18.00
960	0.81	17.67
970	0.83	17.36
980	0.83	17.08
990	0.84	16.84
1000	0.85	16.64
1020	0.87	16.33
1040	0.88	16.09
1060	0.90	15.94
1080	0.91	15.82
1100	0.92	15.76
1120	0.93	15.80
1140	0.94	15.88
1160	0.95	16.01
1180	0.96	16.14
1200	0.97	16.30
1220	0.97	16.50
1240	0.98	16.73
1260	0.98	16.97
1280	0.99	17.19
1300	1.00	17.34
1320	1.01	17.45
1340	1.02	17.49
1360	1.03	17.49
1380	1.04	17.36
1400	1.06	17.12
1420	1.08	16.80
1440	1.10	16.40
1450	1.11	16.20
1500	1.19	14.99
1550	1.29	13.78
1600	1.41	12.64
1650	1.57	11.74
1700	1.77	11.02
1750	2.04	10.47
1800	2.42	10.01
1850	2.98	9.54
1900	3.87	8.71

Typical Performance Curves

Insertion Loss



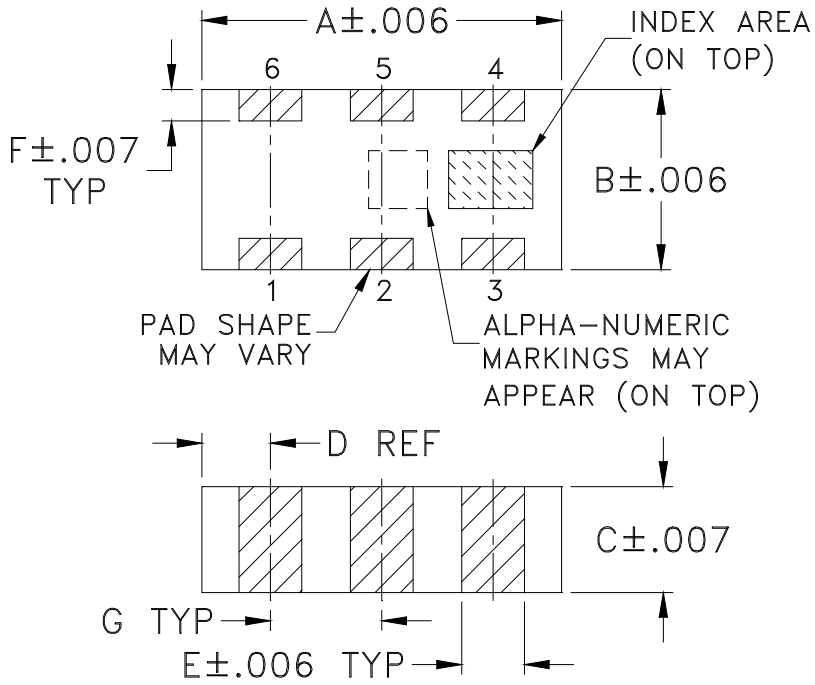
Return Loss



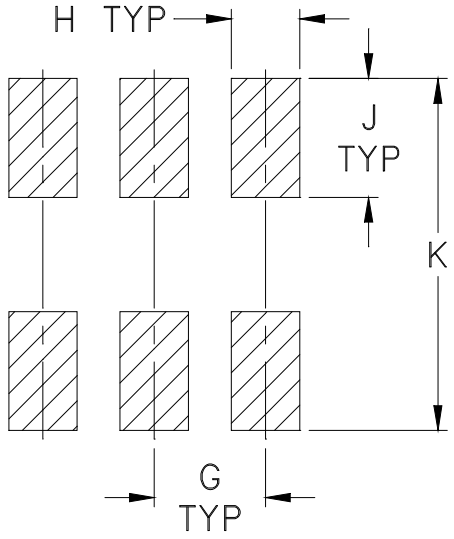
Case Style FV

FV1206-1

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT. GRAM
FV1206-1	.126 (3.20)	.063 (1.60)	.035 (0.89)	.024 (0.61)	.022 (0.56)	.011 (0.28)	.039 (0.99)	.024 (0.61)	.042 (1.07)	.123 (3.12)	-- --	-- --	-- --	-- --	.020

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

Notes:

1. Open style, ceramic base.
2. Termination finish: **as shown below or indicated on Data Sheet.**
   For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

Tape & Reel Packaging TR-F75

DEVICE ORIENTATION IN T&R

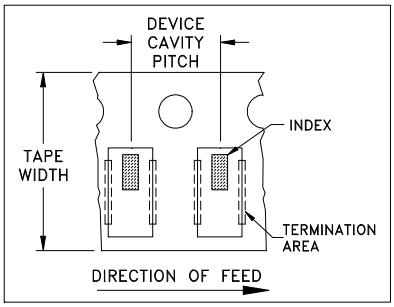


ILLUSTRATION 1

Applicable Case Styles
FV1206-1
FV1206-3

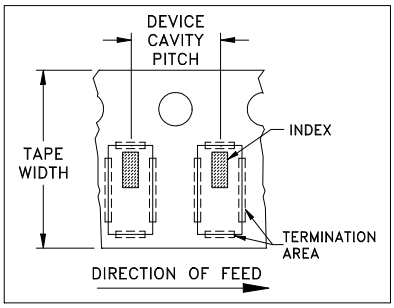


ILLUSTRATION 2

Applicable Case Styles
FV1206-4
FV1206-5
FV1206-6
FV1206-7
FV1206-9

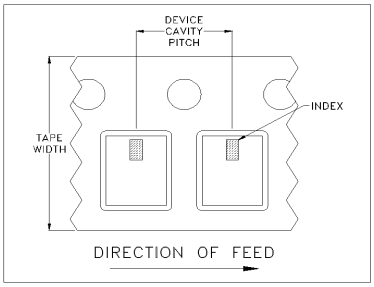


ILLUSTRATION 3

Applicable Case Styles
FV1206-11
FV1206-12
GE0805C-18
NL1008C-6
NL1008C-7
NL1008C-9
NL1008C-10
NL1008C-12

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	3000

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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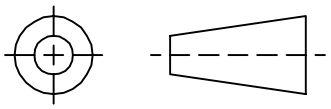
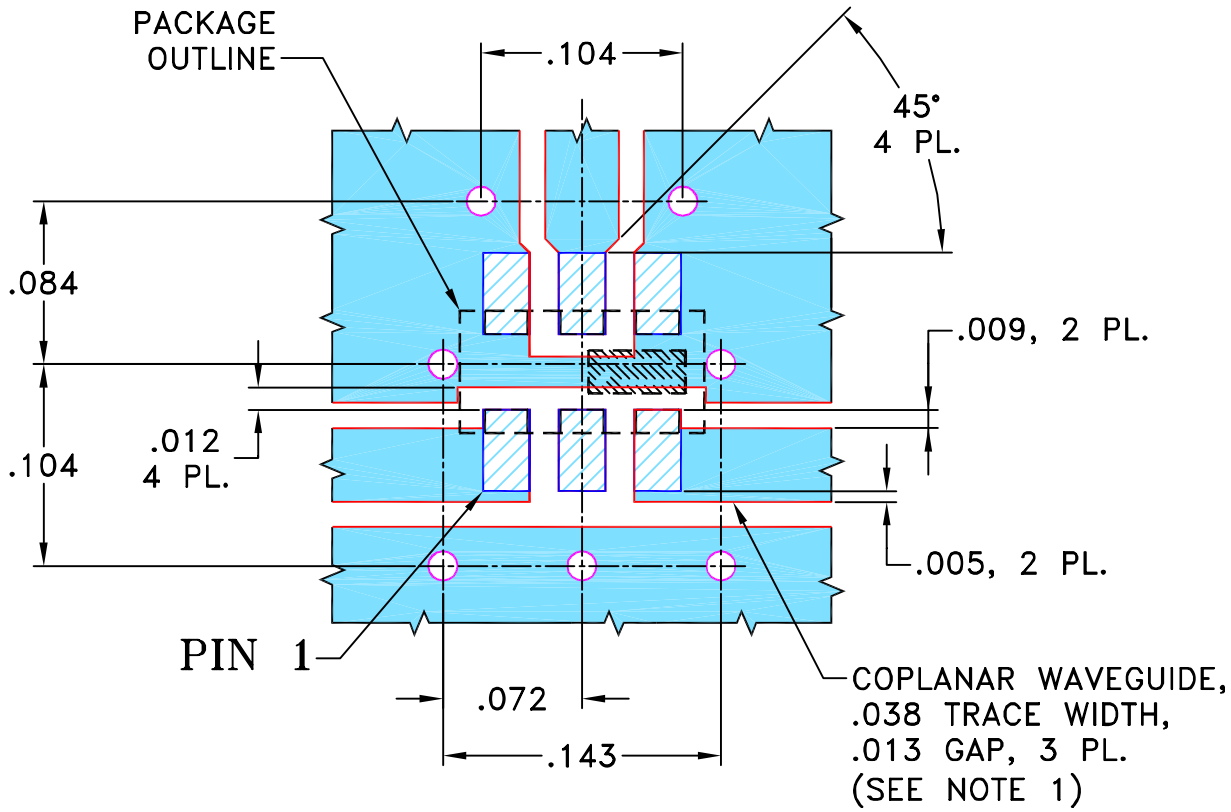
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M109527	NEW RELEASE	01/31/07	PW	DJ

SUGGESTED MOUNTING CONFIGURATION FOR FV1206-1 CASE STYLE, "sa" PIN CONNECTION.



NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015". 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

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	PW	01/29/07
TOLERANCES ON:	CHECKED	IL	01/31/07
2 PL DECIMALS ±	APPROVED	DJ	01/31/07
3 PL DECIMALS ± .005			
ANGLES ± 1°			
FRACTIONS ±			

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

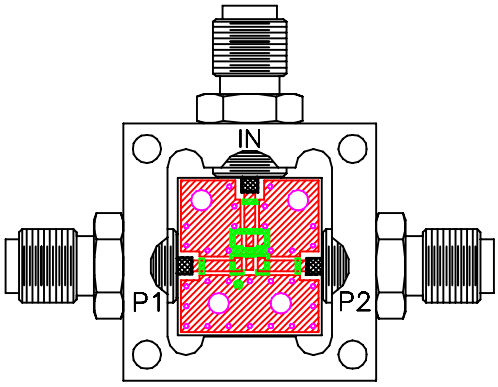
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, sa, FV1206-1, TCN, TB-417+

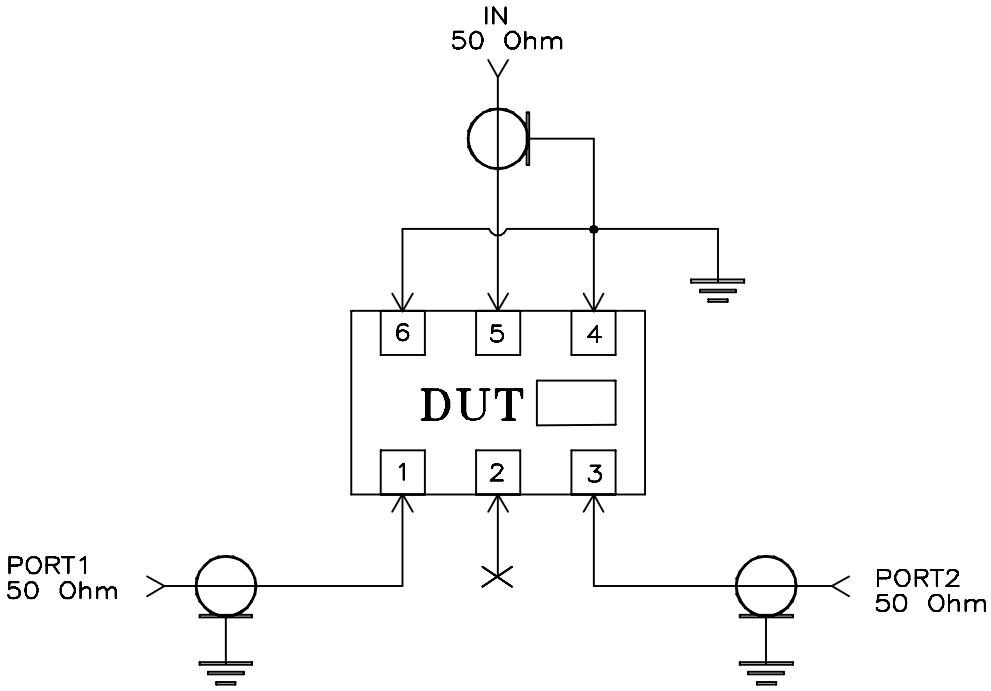
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-265	OR

FILE:	SCALE:	SHEET:
98PL265	10:1	1 OF 1

Evaluation Board and Circuit



TB-417+



Schematic Diagram

Notes:

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

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Environmental Specifications ENV06

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
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