Engineering Development Model

Power Splitter/Combiner TCP-ED12245

2 Way-0°

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 : DB714

ELECTRICAL SPECIFICATIONS 75Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		5		1000	MHz
Isolation	**5 - 50 MHz**		30		dB
	50 - 500 MHz		33		dB
	500 - 1000 MHz		27		dB
Insertion Loss Above 3.0 dB	**5 - 50 MHz**		0.30		dB
	50 - 500 MHz		0.30		dB
	500 - 1000 MHz		0.70		dB
Phase Unbalance	**5 - 50 MHz**		0.476		deg.
	50 - 500 MHz		0.298		deg.
	500 - 1000 MHz		0.607		deg.
Amplitude Unbalance	**5 - 50 MHz**		0.198		dB
	50 - 500 MHz		0.155		dB
	500 - 1000 MHz		0.107		dB
VSWR	**SUM Port**		1.10		(:1)
	OUT Ports		1.19		(:1)

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

Functional Diagram

2 Way-0° Power Splitter/Combiner TCP-ED12245

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB) S-1	TOTAL LOSS[1] (dB) S-2	AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (deg.)
0.30	4.37	3.47	0.90	13.51	3.40
0.50	4.03	3.37	0.66	15.37	3.18
0.70	3.88	3.33	0.55	16.74	2.79
0.90	3.78	3.30	0.48	17.81	2.50
1.00	3.74	3.29	0.45	18.26	2.36
2.00	3.56	3.22	0.33	21.45	1.69
3.00	3.47	3.20	0.28	23.55	1.33
4.00	3.43	3.18	0.25	25.15	1.10
5.00	3.40	3.17	0.23	26.45	0.94
6.00	3.39	3.17	0.22	27.58	0.82
7.00	3.38	3.16	0.21	28.57	0.74
8.00	3.37	3.16	0.20	29.32	0.65
9.00	3.36	3.16	0.20	30.03	0.60
10.00	3.36	3.16	0.20	30.63	0.57
20.00	3.35	3.17	0.18	33.29	0.25
30.00	3.35	3.17	0.18	33.76	0.12
40.00	3.36	3.18	0.18	33.65	0.06
50.00	3.36	3.18	0.18	33.49	0.01
60.00	3.37	3.19	0.18	33.40	0.04
70.00	3.37	3.20	0.18	33.31	0.08
80.00	3.38	3.20	0.18	33.24	0.11
90.00	3.38	3.21	0.17	33.17	0.13
100.00	3.39	3.21	0.18	33.05	0.16
200.00	3.43	3.27	0.16	33.08	0.37
300.00	3.46	3.32	0.14	33.47	0.57
400.00	3.48	3.37	0.11	33.48	0.70
500.00	3.49	3.42	0.07	32.14	0.81
600.00	3.50	3.49	0.02	30.01	0.85
700.00	3.53	3.57	0.04	27.87	0.82
800.00	3.57	3.67	0.10	25.99	0.64
900.00	3.63	3.80	0.17	24.41	0.35
1000.00	3.70	3.94	0.24	23.01	0.17
1100.00	3.82	4.13	0.32	21.66	0.94
1200.00	4.02	4.41	0.40	20.16	2.05
1300.00	4.33	4.81	0.48	18.34	3.55
1400.00	4.71	5.27	0.56	16.35	5.47
1500.00	5.12	5.74	0.62	14.52	7.79
1600.00	5.59	6.19	0.60	13.11	10.51
1700.00	6.27	6.70	0.43	12.31	13.11
1800.00	7.61	7.55	0.06	11.48	14.56

FREQ. (MHz)	VSWR (:1) S	VSWR (:1) 1	VSWR (:1) 2
0.30	1.46	2.63	2.10
0.50	1.30	2.10	1.76
0.70	1.23	1.87	1.60
0.90	1.19	1.73	1.52
1.00	1.18	1.68	1.48
2.00	1.11	1.44	1.32
3.00	1.08	1.34	1.25
4.00	1.06	1.29	1.21
5.00	1.05	1.25	1.18
6.00	1.04	1.23	1.16
7.00	1.04	1.21	1.15
8.00	1.03	1.20	1.14
9.00	1.03	1.19	1.13
10.00	1.03	1.18	1.13
20.00	1.01	1.15	1.11
30.00	1.00	1.15	1.11
40.00	1.01	1.15	1.11
50.00	1.01	1.15	1.11
60.00	1.02	1.15	1.11
70.00	1.02	1.14	1.11
80.00	1.03	1.14	1.11
90.00	1.03	1.14	1.11
100.00	1.04	1.14	1.11
200.00	1.09	1.14	1.13
300.00	1.12	1.15	1.18
400.00	1.17	1.17	1.22
500.00	1.21	1.19	1.26
600.00	1.24	1.21	1.30
700.00	1.25	1.23	1.32
800.00	1.26	1.25	1.35
900.00	1.27	1.28	1.38
1000.00	1.30	1.31	1.41
1100.00	1.34	1.33	1.44
1200.00	1.41	1.34	1.47
1300.00	1.52	1.34	1.50
1400.00	1.67	1.33	1.54
1500.00	1.88	1.31	1.59
1600.00	2.11	1.30	1.66
1700.00	2.22	1.36	1.75
1800.00	1.97	1.52	1.94

[1]Total Loss = Insertion Loss + 3dB Splitter Loss

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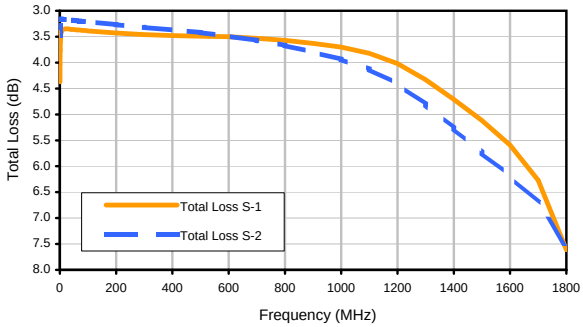
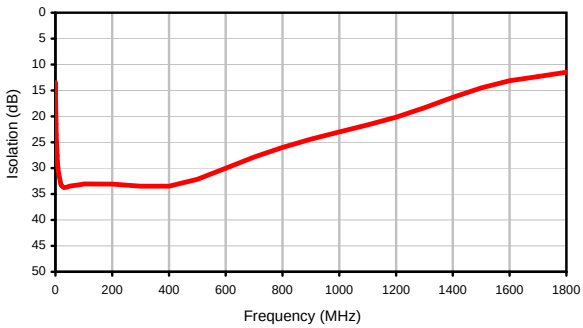
2 Way-0° Power Splitter/Combiner TCP-ED12245

Typical Performance Curves

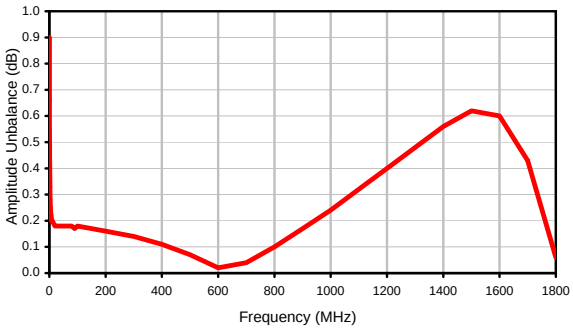
Total Loss



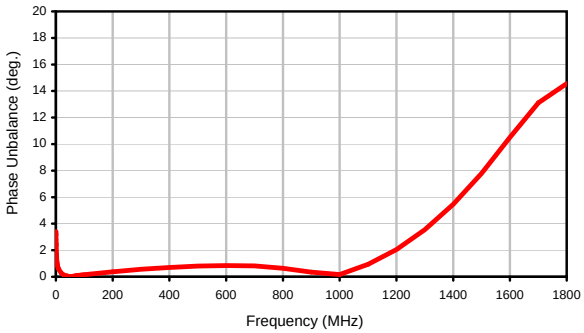
Isolation



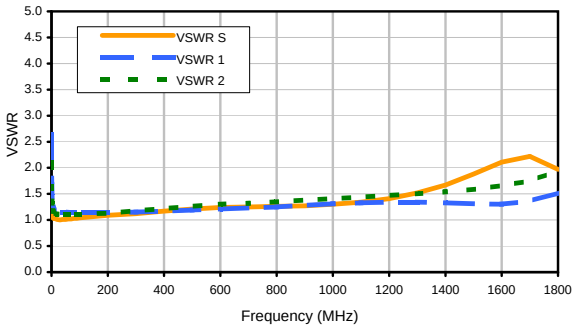
Amplitude Unbalance



Phase Unbalance



VSWR



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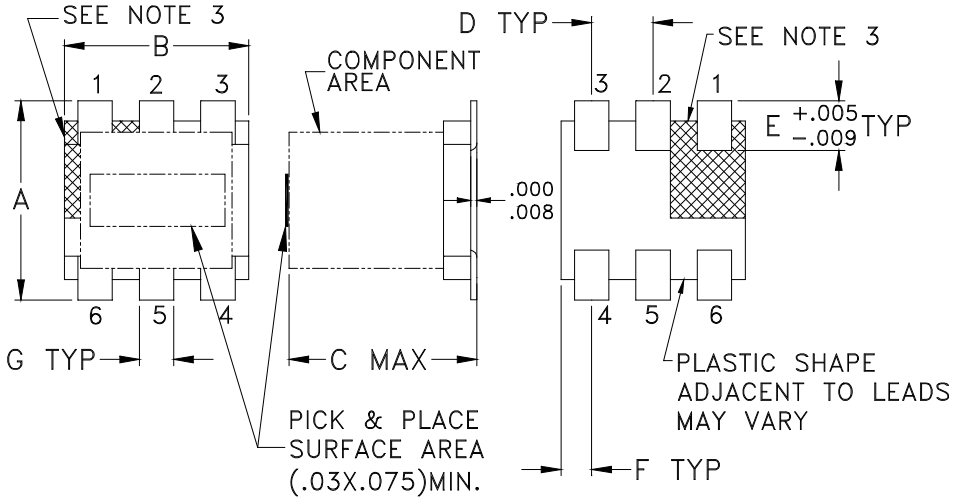
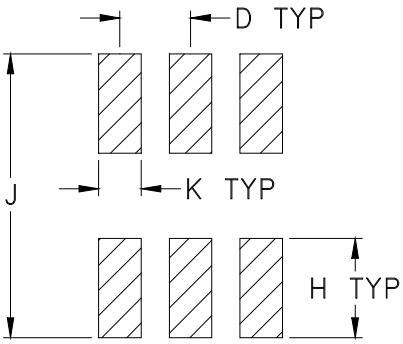
Case Style DB

DB714

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
DB714	.160 (4.06)	.150 (3.81)	.160 (4.06)	.050 (1.27)	.040 (1.02)	.025 (0.64)	.028 (0.71)	.065 (1.65)	.190 (4.83)	.030 (0.76)	.15

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

Notes:

1. Case material: Plastic.
2. Termination finish:
   For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.
3. Lead #1 identifier shall be located in the cross-hatched area shown.
   Identifier may be either a molded or marked feature.

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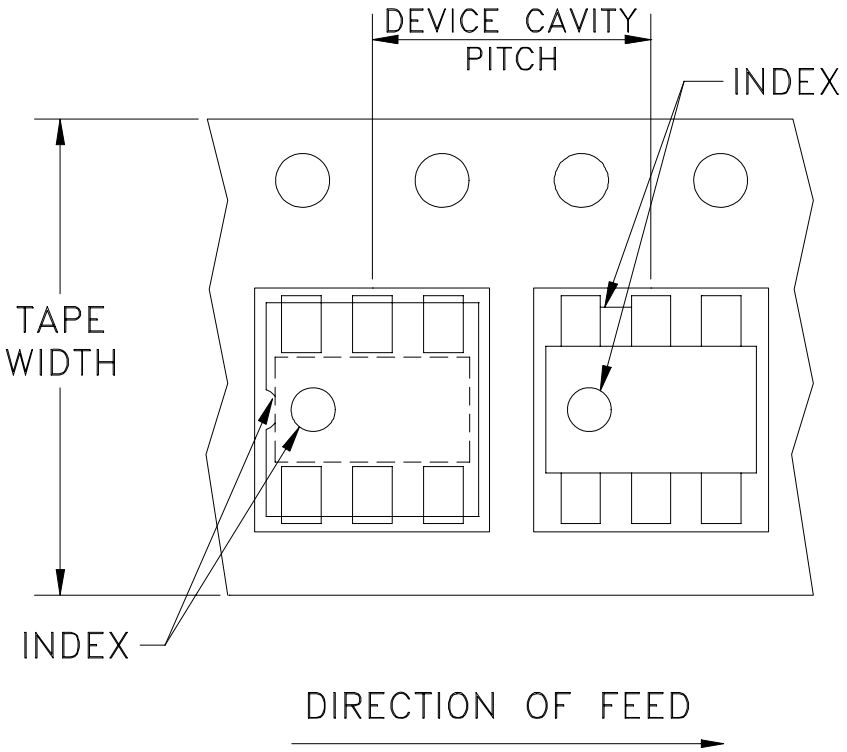
Tape & Reel Packaging TR-F47

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note
12	8	13	1000, 2000
		7	20, 50, 100, 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.

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Environmental Specifications ENV02T1

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	-40° to 85°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
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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, 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
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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