

Surface Mount Power Splitter/Combiner

SC4PS-13-1+

4 Way-0° 50Ω 30 to 750 MHz

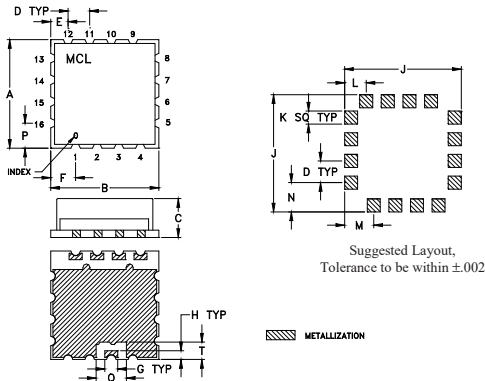
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input* (as a splitter)	3W max.
Internal Dissipation	0.20W max.
Permanent damage may occur if any of these limits are exceeded.	
*Outputs termination load must be VSWR 2:1 /max	

Pin Connections

SUM PORT	10
PORT 1	1
PORT 2	2
PORT 3	3
PORT 4	4
GROUND	ALL OTHER

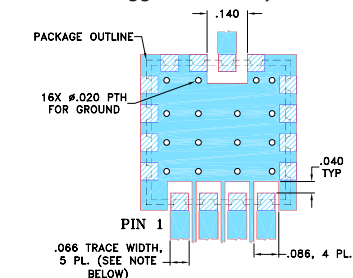
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.500	.500	.180	.100	.080	.115	.060	.040	.540
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72
K	L	M	N	P	Q	T	wt.	
.060	.100	.135	.135	.115	.140	.080	grams	
1.52	2.54	3.43	3.43	2.92	3.56	2.03	grams	1.0

Demo Board MCL P/N: TB-652+ Suggested PCB Layout (PL-368)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS 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 SOLDER MASK

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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Features

- wideband, 30 to 750 MHz,
- low insertion loss, 0.8 dB typ.
- good isolation, 25 dB typ.
- good amplitude unbalance, 0.4 dB typ.

Applications

- communication systems
- CATV
- cellular, GPS, PCS
- VHF/UHF/receivers/transmitters

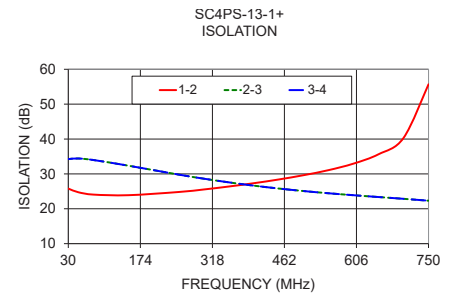
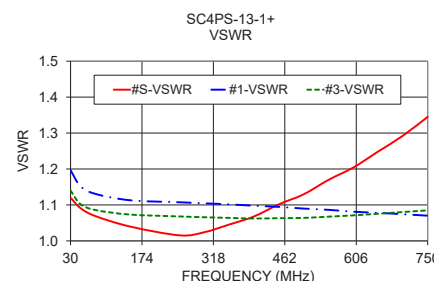
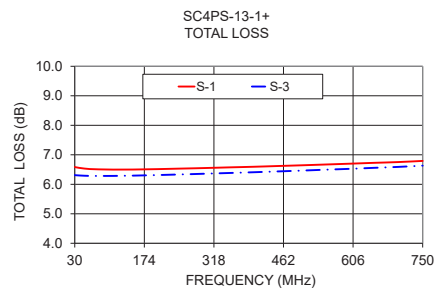
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		30	—	750	MHz
Insertion Loss	30 - 750	—	0.8	1.2	dB
Isolation	30 - 750	15	25	—	dB
Phase Unbalance	30 - 750	—	2	5	Degree
Amplitude Unbalance	30 - 750	—	0.4	0.8	dB
VSWR Input	30 - 750	—	1.2	—	:1
VSWR Output	30 - 750	—	1.15	—	:1

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)				Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	2-3	2-4						
30.0	6.58	6.58	6.31	6.31	0.27	25.79	34.25	34.25	1.29	1.12	1.20	1.20	1.14	1.14
50.0	6.53	6.53	6.29	6.29	0.24	24.74	34.42	34.42	0.96	1.09	1.15	1.16	1.10	1.10
80.0	6.51	6.51	6.28	6.29	0.22	24.07	33.99	33.99	0.78	1.07	1.13	1.14	1.09	1.08
150.0	6.50	6.50	6.29	6.30	0.21	23.90	32.36	32.36	0.67	1.04	1.11	1.12	1.07	1.07
250.0	6.53	6.54	6.33	6.34	0.21	24.80	29.82	29.82	0.88	1.02	1.11	1.12	1.07	1.07
300.0	6.55	6.57	6.36	6.36	0.21	25.52	28.65	28.65	1.03	1.02	1.10	1.12	1.07	1.07
350.0	6.57	6.60	6.38	6.39	0.21	26.37	27.60	27.60	1.17	1.05	1.10	1.11	1.06	1.07
400.0	6.59	6.62	6.41	6.41	0.21	27.32	26.65	26.65	1.33	1.07	1.10	1.11	1.06	1.06
450.0	6.62	6.65	6.44	6.44	0.21	28.39	25.82	25.82	1.47	1.10	1.09	1.11	1.06	1.06
500.0	6.64	6.68	6.46	6.47	0.22	29.62	25.09	25.09	1.63	1.13	1.09	1.11	1.06	1.06
550.0	6.67	6.71	6.50	6.50	0.21	31.08	24.45	24.45	1.74	1.17	1.09	1.11	1.07	1.06
600.0	6.70	6.74	6.52	6.53	0.21	32.95	23.89	23.89	1.89	1.20	1.08	1.11	1.07	1.06
650.0	6.73	6.77	6.56	6.56	0.21	35.63	23.37	23.37	2.01	1.25	1.08	1.11	1.08	1.06
700.0	6.75	6.80	6.59	6.60	0.21	40.30	22.86	22.86	2.12	1.29	1.07	1.11	1.08	1.06
750.0	6.79	6.84	6.63	6.64	0.21	55.69	22.31	22.31	2.25	1.35	1.07	1.11	1.08	1.07

1. Total Loss = Insertion Loss + 6dB splitter loss.



electrical schematic



Generic photo used for illustration purposes only

CASE STYLE: CK1704

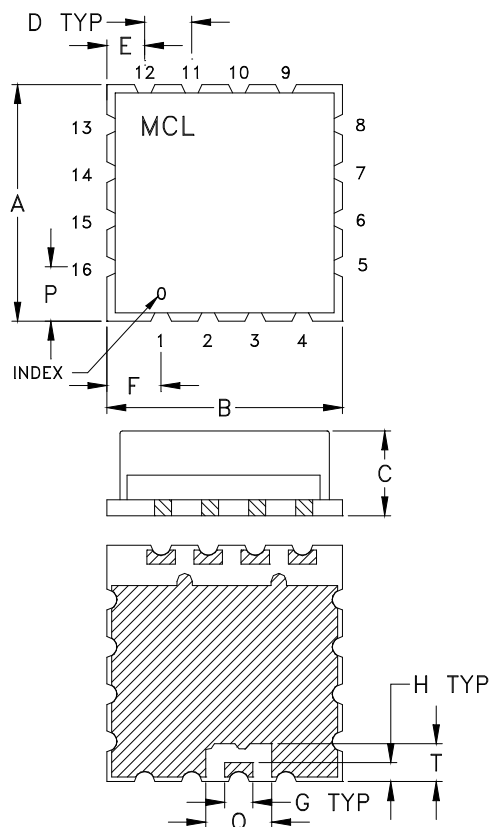
+RoHS Compliant

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

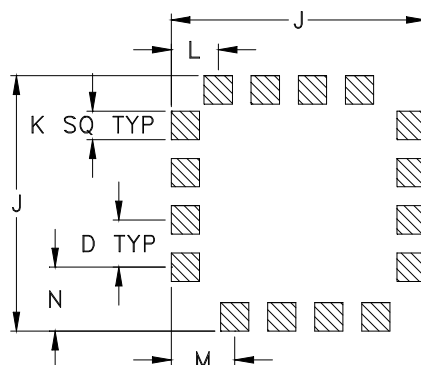


Outline Dimensions

CK1704



PCB Land Pattern



Suggested Layout,
Tolerance to be within $\pm .002$

CASE #	A	B	C	D	E	F	G	H	J	K
CK1704	.500 (12.70)	.500 (12.70)	.180 (4.57)	.100 (2.54)	.080 (2.03)	.115 (2.92)	.060 (1.52)	.040 (1.02)	.540 (13.72)	.060 (1.52)

CASE #	L	M	N	P	Q	R	S	T	WT. GRAM
CK1704	.100 (2.54)	.135 (3.43)	.135 (3.43)	.115 (2.92)	.140 (3.56)	-	-	.080 (2.03)	1.0

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

Notes:

- Case material: Nickel-Silver alloy.
- Base: Printed wiring laminate.
- 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.
All models, (+) suffix.

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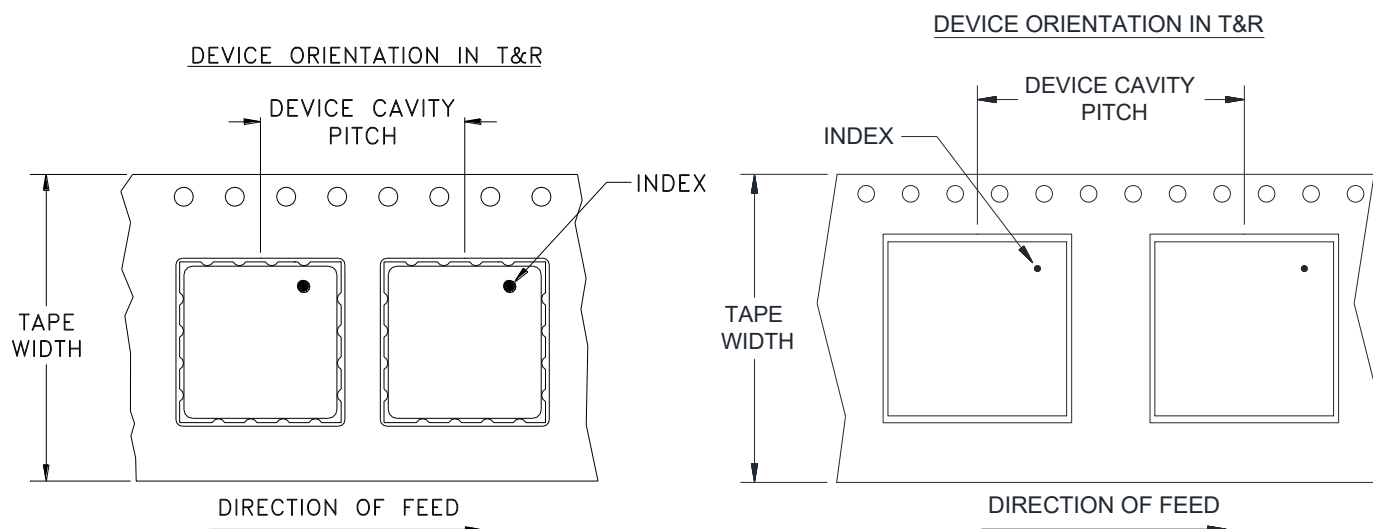
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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RF/IF MICROWAVE COMPONENTS

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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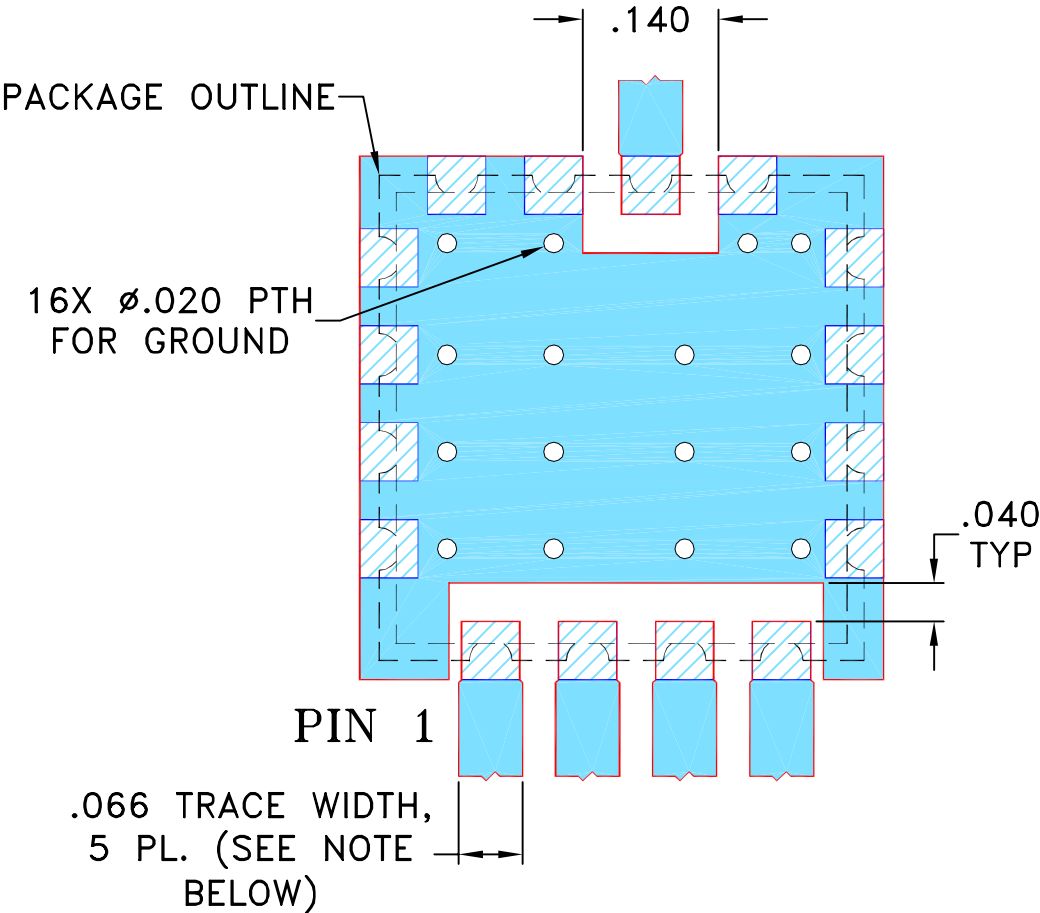
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THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M136731	NEW RELEASE	05/14/12	AV	ABD
A	M145165	UPDATED PCB PATTERN	02/28/14	AV	JC

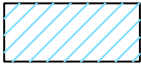
SUGGESTED MOUNTING CONFIGURATION FOR
CK1704 CASE STYLE, "16SP01" PIN CONNECTION



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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 TOLERANCES ON: 2 PL DECIMALS ± 3 PL DECIMALS ± .005 ANGLES ± FRACTIONS ±	DRAWN	AV	04/17/12
	CHECKED	IL	05/14/12
	APPROVED	ABD	05/14/12



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Brooklyn NY 11235

PL, 16SP01, CK1704, TB-652+

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

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-368	A
FILE:	98PL368	SCALE: 5:1	SHEET: 1 OF 1