

Surface Mount Power Splitter/Combiner

SBTCJ-13-75+

2 Way-180° 75Ω 5 to 1000 MHz

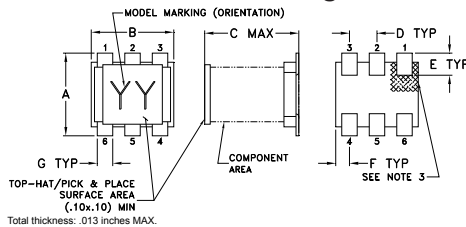
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1.0W max.
Permanent damage may occur if any of these limits are exceeded.	

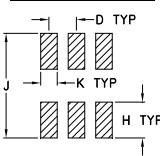
Pin Connections

SUM PORT	6
PORT 1 (180°)	1
PORT 2 (0°)	3
GROUND	4
EXT. INDUCTOR SERIES 3-6nH	3
EXT. CAPACITOR 0.8pF	3 TO GND
EXT. CAPACITOR 3.6pF	5 TO GND
EXT. RESISTOR 30.1Ω	5 TO GND
EXT. RESISTOR SERIES 4.99Ω	1
GROUND OR NOT USE	2

Outline Drawing



PCB Land Pattern

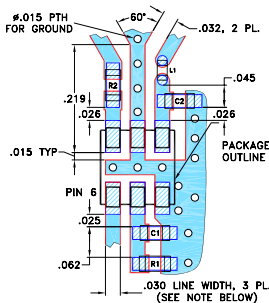


Suggested Layout,
Tolerance to be within .002

Outline Dimensions (inch/mm)

A	B	C	D	E	F
.160	.150	.160	.050	.040	.025
4.06	3.81	4.06	1.27	1.02	0.64
G	H	J	K	wt	
.028	.065	.190	.030	grams	
0.71	1.65	4.83	0.76	grams	0.15

Demo Board MCL P/N: TB-580+ Suggested PCB Layout (PL-342)



Features

- wide band frequency 5-1000 MHz.
- low insertion, 1.1 dB typ.
- excellent amplitude unbalance, 0.3 dB typ.
- very good phase unbalance, 2.7 deg. typ.
- external resistor inductor & capacitor required
- aqueous washable
- leads for excellent solderability
- low cost

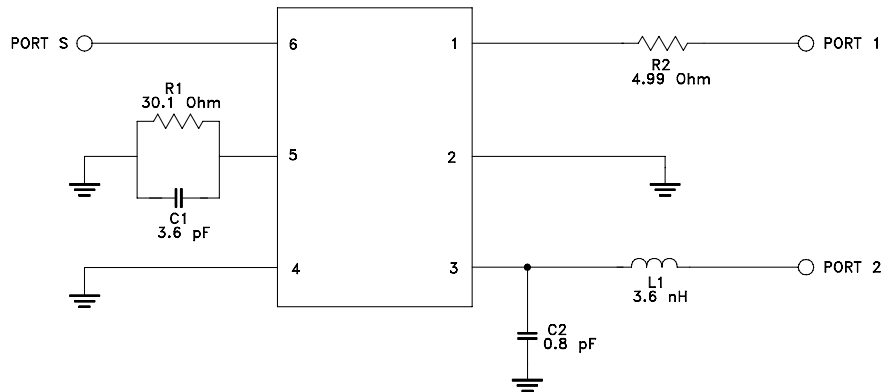
Applications

- CATV
- cellular
- UHV/VHV

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1000	MHz
Insertion Loss Above 3.0 dB	5-50	—	1.1	1.7	
	50-500	—	1.2	1.6	dB
	500-1000	—	1.5	2.1	
Isolation	5-50	20	29	—	
	50-500	20	28	—	dB
	500-1000	20	26	—	
Phase Unbalance	5-50	—	0.6	3	
	50-500	—	2.7	7	Degree
	500-1000	—	2.8	9	
Amplitude Unbalance	5-50	—	0.4	0.6	
	50-500	—	0.3	0.5	dB
	500-1000	—	0.8	1.2	
VSWR (Port S)	5-50	—	1.27	1.5	
	50-500	—	1.15	1.3	:1
	500-1000	—	1.38	1.6	
VSWR (Port 1-2)	5-50	—	1.23	1.5	
	50-500	—	1.24	1.4	:1
	500-1000	—	1.58	1.8	

Application Circuit



SEQ.	Description
CAP C1	S-SER 3.6±.1 pF; 0603 SIZE
CAP C2	HIQ 0.8 ±1 pF; 0603 SIZE
IND L1	3.6±.1 NH; 0402 SIZE
RES R1	.1W 30.1 OHM 1% 0603 SIZE
RES R2	.1W 4.99 OHM 1% 0603 SIZE

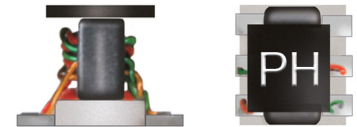
SEQ.	Suggested Supplier Part #
C1	AVX. 0603 1U3R6 * AT2A
C2	AVX. 0603 1U0R8 * AT2A
L1	Murat LQP15MN3N6B00
R1	KOA RK73HIJTTD30RIF
R2	KOA RK73HIJTTD4R99F

Notes

- 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.
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CASE STYLE: DB1627

+RoHS Compliant

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



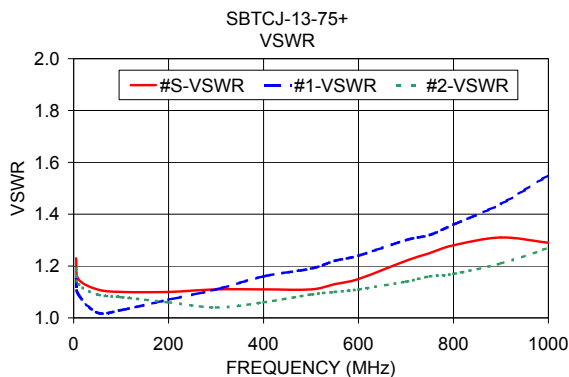
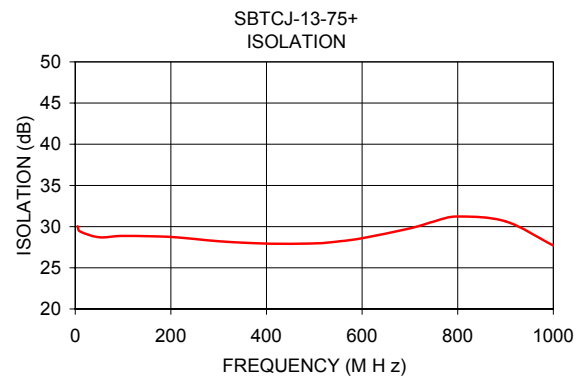
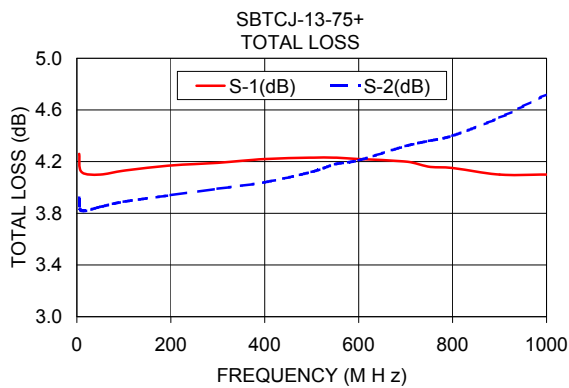
Available Tape and Reel
at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500
13"	1000, 2000

Typical Performance Data

Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
5.00	4.26	3.92	0.34	30.05	179.61	1.23	1.15	1.19
10.00	4.12	3.82	0.30	29.41	179.60	1.15	1.09	1.13
50.00	4.10	3.85	0.25	28.70	179.99	1.11	1.02	1.09
100.00	4.13	3.89	0.24	28.87	179.77	1.10	1.03	1.08
200.00	4.17	3.94	0.23	28.74	179.39	1.10	1.07	1.06
300.00	4.19	3.99	0.21	28.22	179.06	1.11	1.11	1.04
400.00	4.22	4.04	0.17	27.94	178.93	1.11	1.16	1.06
500.00	4.23	4.12	0.10	27.96	178.85	1.11	1.19	1.09
550.00	4.23	4.18	0.05	28.20	178.94	1.13	1.22	1.10
600.00	4.22	4.21	0.01	28.59	179.11	1.15	1.24	1.11
700.00	4.20	4.32	0.12	29.79	179.42	1.22	1.30	1.14
750.00	4.16	4.36	0.20	30.62	179.59	1.25	1.32	1.16
800.00	4.15	4.40	0.26	31.22	179.85	1.28	1.36	1.17
900.00	4.10	4.54	0.44	30.64	179.53	1.31	1.44	1.21
1000.00	4.10	4.72	0.61	27.70	178.60	1.29	1.55	1.27

1. Total Loss = Insertion Loss + 3dB splitter theoretical loss.



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