SURFACE MOUNT top hat

Power Splitter/Combiner TCP-2-33W+

2 Way-0° 50Ω 50 to 3000 MHz

FEATURES

- Wide frequency band, 50 to 3000 MHz
- Low insertion, 1.0 dB typ.
- External resistor required
- Aqueous washable
- Leads for excellent solderability
- Low cost

Generic photo used for illustration purposes only

CASE STYLE: DB1627

+RoHS Compliant

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

APPLICATIONS

- Cellular
- PCN
- GPS

ELECTRICAL SPECIFICATIONS AT 25°C

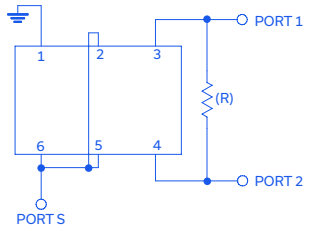
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		50		3000	MHz
Insertion Loss, above 3.0 dB	50 - 500	—	0.6	0.9	dB
	500 - 1500	—	0.9	1.3	
	1500 - 3000	—	1.3	2.1	
Isolation	50 - 500	20	30	—	dB
	500 - 1500	16	21	—	
	1500 - 3000	8	11	—	
Phase Unbalance	50 - 500	—	0.7	2	Degree
	500 - 1500	—	1.6	5	
	1500 - 3000	—	6.5	10	
Amplitude Unbalance	50 - 500	—	0.06	0.2	dB
	500 - 1500	—	0.4	0.6	
	1500 - 3000	—	0.8	1.3	
VSWR (Port-S)	50 - 500	—	1.9	2.2	:1
	500 - 1500	—	1.9	2.2	
	1500 - 3000	—	1.8	2.1	
VSWR (Port 1-2)	50 - 500	—	1.9	2.2	:1
	500 - 1500	—	2.2	2.5	
	1500 - 3000	—	2.6	2.9	

MAXIMUM RATINGS

Parameter	Ratings
Operating temperature	-40°C to 85°C
Storage temperature	-55°C to 100°C
RF Power Input (as splitter)	0.5 W max.

Permanent damage may occur if any of these limits are exceeded.

FUNCTIONAL SCHEMATIC



REV. B
ECO-012869
TCP-2-33W+
HY/TD/CP/AM
220418

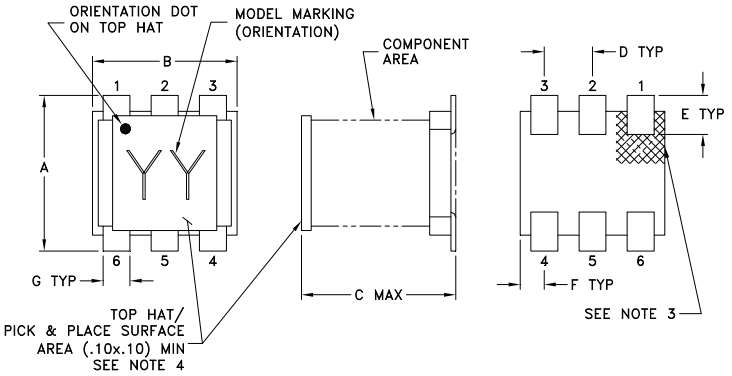
SURFACE MOUNT top hat

Power Splitter/Combiner TCP-2-33W+

PIN CONNECTIONS

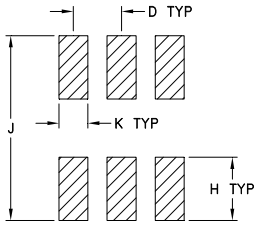
SUM PORT	2,5,6
PORT 1	3
PORT 2	4
GROUND	1
EXT. RESISTOR 475Ω	3,4

OUTLINE DRAWING



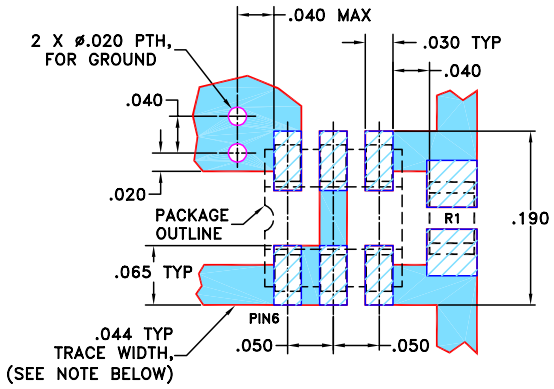
PRODUCT MARKING: PF

PCB Land Pattern



SUGGESTED LAYOUT
TOLERANCE TO BE WITHIN ±.002

DEMO BOARD MCL P/N: TB-86
SUGGESTED PCB LAYOUT (PL-008)



RESISTOR R1: 475 ± 1% Ohm, 0805 SIZE

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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

OUTLINE DIMENSIONS (Inches / 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		0.15

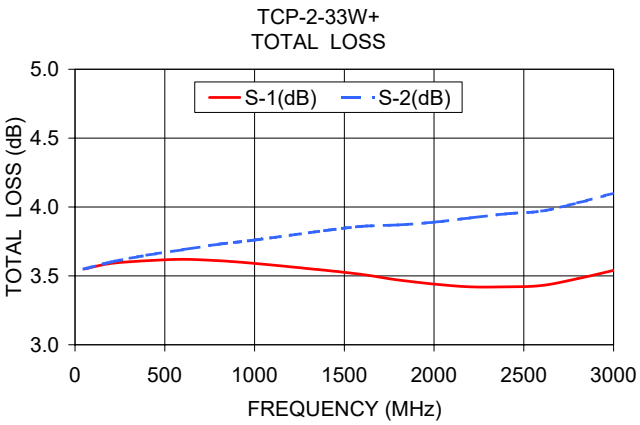
TAPE & REEL INFORMATION: F47

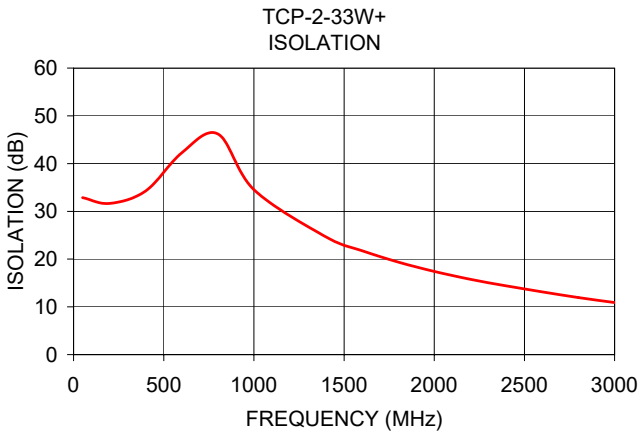
Power Splitter/Combiner TCP-2-33W+

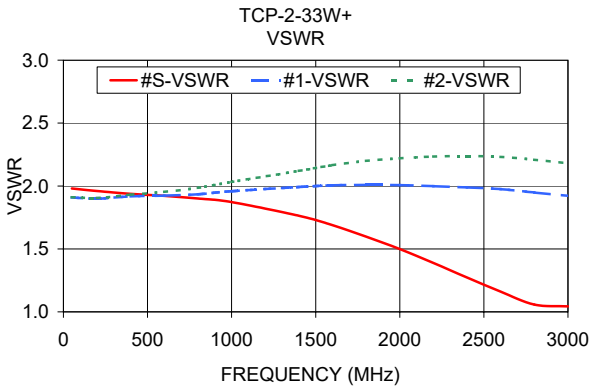
TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Total Loss[1] (dB) S-1	Total Loss[1] (dB) S-2	Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1) S	VSWR (:1) 1	VSWR (:1) 2
50.00	3.55	3.55	0.00	32.87	0.06	1.98	1.91	1.91
200.00	3.59	3.60	0.01	31.65	0.23	1.96	1.90	1.90
400.00	3.61	3.65	0.03	34.27	0.44	1.94	1.92	1.93
600.00	3.62	3.69	0.07	42.24	0.63	1.92	1.92	1.95
800.00	3.61	3.73	0.12	46.22	0.82	1.90	1.93	1.99
1000.00	3.59	3.76	0.17	34.55	0.96	1.87	1.96	2.03
1400.00	3.54	3.83	0.29	24.63	1.24	1.76	1.99	2.12
1600.00	3.51	3.86	0.35	21.75	1.38	1.69	2.01	2.17
1800.00	3.47	3.87	0.40	19.39	1.56	1.60	2.01	2.20
2000.00	3.44	3.89	0.45	17.42	1.84	1.50	2.01	2.22
2200.00	3.42	3.92	0.50	15.78	2.21	1.39	2.00	2.23
2400.00	3.42	3.95	0.53	14.40	2.62	1.27	1.99	2.24
2600.00	3.43	3.97	0.54	13.12	3.15	1.16	1.97	2.23
2800.00	3.48	4.03	0.55	11.95	3.88	1.06	1.95	2.21
3000.00	3.54	4.10	0.56	10.91	4.84	1.04	1.92	2.18

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







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.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard. Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html