

50Ω DC to 190 MHz

### Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -55°C to 100°C

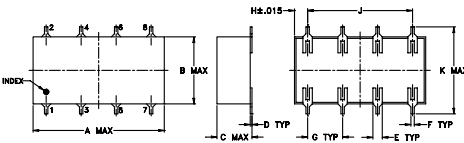
Power Input 0.5W max.

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

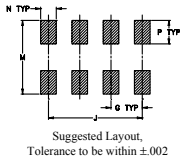
### Pin Connections

INPUT	1
OUTPUT	8
GROUND	2,3,4,5,6,7

### Outline Drawing



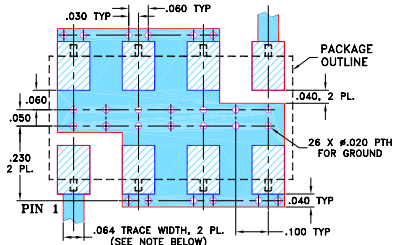
### PCB Land Pattern



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
0.75	0.38	0.28	0.01	0.05	0.02	0.2
19.05	9.65	7.11	0.25	1.27	0.51	5.08
H	J	K	M	N	P	wt
0.075	0.6	0.45	0.47	0.1	0.15	grams
1.91	15.24	11.43	11.94	2.54	3.81	1.60

### Demo Board MCL P/N: TB-187+ Suggested PCB Layout (PL-049)



- 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

### Features

- wide selection of cut-off frequencies
- excellent rejection
- custom models available

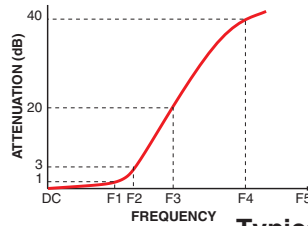
### Applications

- defense communications
- receivers/transmitters
- harmonic rejection of VCOs

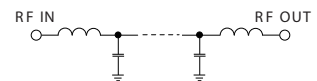
### Electrical Specifications

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	DC-F1	DC-190	—	—	1.0	dB
	Freq. Cut-Off	F2	210	—	3.0	—	dB
	VSWR	DC-F1	DC-190	—	1.7	—	:1
Stop Band	Rejection Loss	F3-F4	290-390	20	—	—	dB
		F4-F5	390-800	40	—	—	dB
	VSWR	F3-F5	290-800	—	18	—	:1

### Typical Frequency Response

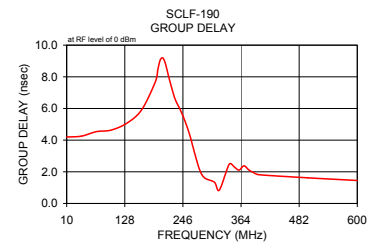
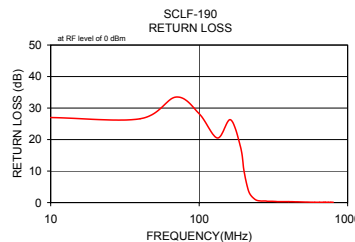
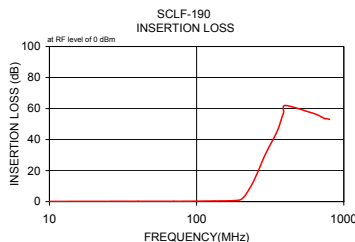


### Electrical Schematic



### Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
	$\bar{x}$	$\sigma$		
10.00	0.12	0.10	10.00	4.20
40.00	0.19	0.10	40.00	4.25
70.00	0.21	0.10	70.00	4.54
100.00	0.27	0.10	100.00	4.63
132.50	0.41	0.10	132.50	5.08
162.50	0.49	0.10	162.50	5.93
190.00	0.77	0.10	190.00	7.69
200.00	1.38	0.10	195.00	8.44
210.00	3.05	0.10	200.00	9.07
220.00	5.72	0.10	205.00	9.20
240.00	11.88	0.10	210.00	8.88
260.00	18.95	0.30	220.00	7.66
270.00	22.68	0.40	230.00	6.61
280.00	26.25	0.50	240.00	5.96
290.00	29.54	0.60	250.00	5.22
310.00	35.11	0.80	260.00	4.32
340.00	42.33	1.20	270.00	3.16
360.00	47.49	1.60	280.00	2.12
370.00	50.87	2.40	290.00	1.62
380.00	54.42	3.60	310.00	1.34
390.00	57.49	3.20	320.00	0.85
400.00	62.02	5.20	340.00	2.48
600.00	57.37	2.30	350.00	2.31
647.50	56.32	1.40	360.00	2.11
687.50	55.21	1.80	370.00	2.38
702.50	54.51	0.90	380.00	2.11
710.00	54.45	1.30	390.00	1.94
740.00	53.58	1.30	400.00	1.82
770.00	53.44	1.40	500.00	1.62
800.00	53.04	1.10	600.00	1.45



### 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



CASE STYLE: YY161