

# Bi-Directional Coupler

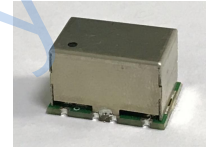
## Features

- high power, 50W max. with output load VSWR 2.0 max
- high power, 20W max. with output open or short
- low mainline loss, 0.1 dB typ.
- high directivity, 33 dB typ.
- excellent flatness, 0.1 dB typ.

## Applications

- military mobile
- signal monitoring

## HT-SYDC-20-31HP+

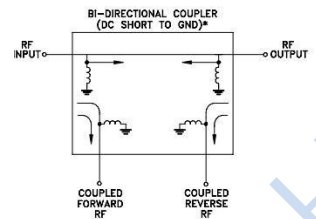


50Ω 20 dB Coupling 1.5 to 30 MHz 50 Watt

Electrical Specifications at 25°C					
Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1.5	-	30	MHz
Mainline Loss (above theoretical loss, 0.044 dB)	15-30	-	0.06	0.25	dB
Coupling	1.5-30	19.5	20.5	21.5	dB
Coupling Flatness (±)	1.5-30	-	0.05	0.2	dB
Directivity	1.5-30	22	33	-	dB
Return Loss (Input)	1.5-30	20	25	-	dB
Return Loss (Output)	1.5-30	20	25	-	dB
Return Loss (Coupling)	1.5-30	18	24	-	dB
Input Power	1.5-30	-	-	50	W

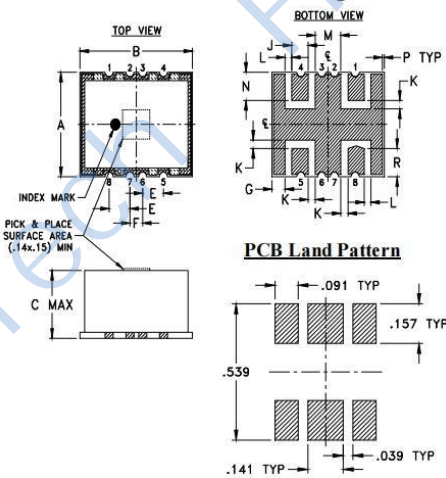
Maximum Ratings	
*Operating Temperature, Case	-40°C to 65°C
Storage Temperature	-55°C to 100°C
*Case temperature is defined as temperature on ground leads. Permanent damage may occur if any of these limits are exceeded.	

## Electrical Schematic



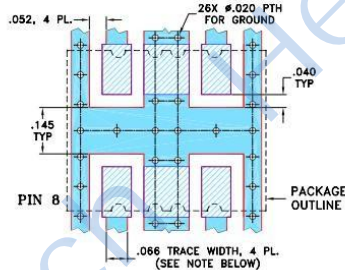
\* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER THAT ROUTES DC FROM RF PORTS TO GROUND.

## Outline Drawing



Pad Connections	
Input	8
Output	1
Coupled(Forward)	5
Coupled(Reverse)	4
Ground	2,3,6,7

## Demo Board MCL P/N: TB-608+ Suggested PCB Layout (PL-339)



### NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B 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.
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Suggested L layout, Tolerance to be within ±0.05mm

Outline Dimensions: Unit ( mm )					
A	B	C	E	F	G
12.70	15.75	9.14	2.92	1.78	1.85
H	J	K	L	M	N
-	2.29	1.02	0.94	3.56	3.43
P	Q	R	wt		
0.25	-	3.43	3.0g		

