

Surface Mount I&Q Demodulator

50Ω

868 to 895 MHz

SYIQ-895D+



Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
LO/RF Power	50mW
I&Q Current	40mA

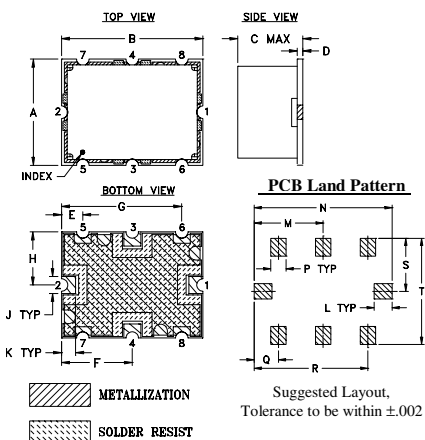
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

LO (carrier)	2
RF (signal)	1
I (0°)(ref.)	3
Q (90°)*	4
GROUND	5,6,7,8

*Q=+90° for LO<RF
Q=-90° for LO>RF

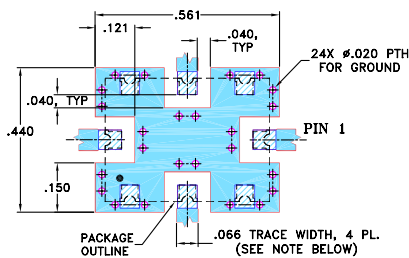
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.060	.050
9.65	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.52	1.27
L	M	N	P	Q	R	S	T	wt.	
.070	.270	.540	.060	.095	.445	.208	.415	grams	
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8	

Demo Board MCL P/N: TB-459+ Suggested PCB Layout (PL-280)



NOTE: 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

- low conversion loss, 6.4dB typ.
- excellent 3rd and 5th order harmonic suppression
- good amplitude & phase unbalance
- good VSWR all ports, RF 1.35:1 typ., LO 1.3:1 typ., I&Q 1.35:1 typ.
- shielded case

Applications

- cellular
- radar and communication systems

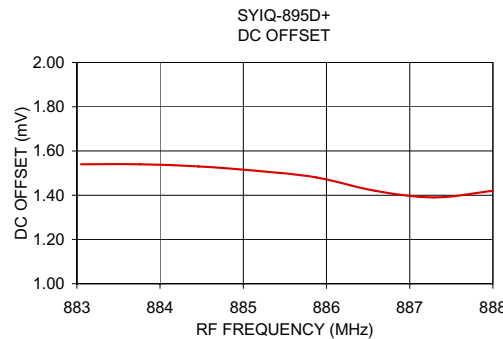
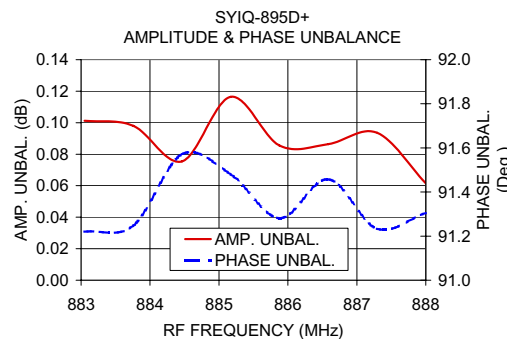
Demodulator Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)		AMPLITUDE UNBALANCE (dB)		PHASE UNBALANCE (Deg.)		HARMONIC SUPPRESSION (-dBc)						
RF (SIGNAL)	LO (CARRIER)	I&Q				with reference to 90°		3XI/Q	5XI/Q					
f _i	f _o	Min.	Max.	σ	Max.	Typ.	Max.	Typ.	Min.					
868	895	DC	5	6.4	0.10	7.5	0.15	0.4	1.5	4.0	45	35	64	50

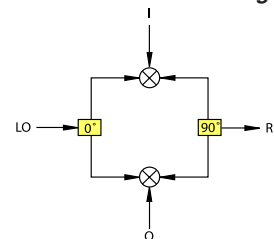
1. Operating LO power: 10±1dBm
2. 1dB Compression: +5 dBm typical.
3. DC offset, 1.5 mV typ.
4. Conversion Loss= RF power, dBm - (I + Q) power, dBm

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Amplitude Unbalance (dB)	Phase (I&Q) (deg.)	DC Offset (mV)
883.05	0.05	6.37	91.22	1.54
883.76	0.76	6.38	91.25	1.54
884.46	1.46	6.37	91.57	1.53
885.17	2.17	6.37	91.48	1.51
885.88	2.88	6.39	91.28	1.48
886.59	3.59	6.41	91.46	1.42
887.29	4.29	6.43	91.23	1.39
888.00	5.00	6.41	91.31	1.42



I&Q demodulation block diagram



For detailed performance specs & shopping online see web site

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P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

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