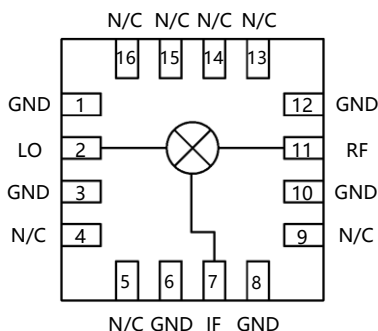


Description

The YC504 is a general purpose passive mixer that can be used for up-conversion or down-conversion. The RF port is designed for the 18GHz to 32GHz band and the IF port is optimized for 2GHz to 8GHz operation. The YC504's high level of integration minimizes the total solution cost, board space and system level variation with its 3mm × 3mm package size.



Applications

- ◆ Satellite Communication Systems
- ◆ Point-to-Point Radios
- ◆ Military, aerospace, and defense applications
- ◆ Test and measurement instrumentation
- ◆ Very Small Aperture Terminal (VSAT)

Features

- ◆ Conversion Loss : 13.5dB @ f_{RF}=28GHz
- ◆ 2 - 8 GHz Wideband IF
- ◆ 16 Lead 3x3 SMT Package

Electrical Specification

Parameters	Min	Typ	Max	Unit	Test Conditions
RF Frequency Range	18		32	GHz	
LO Frequency Range	16		32	GHz	
IF Frequency Range	2		8	GHz	
Conversion Loss		16		dB	Low Side LO, LO = 18dBm, RF Power = 0dBm
LO to IF Isolation		59		dB	Low Side LO, LO = 0dBm, RF = 50Ω
LO to RF Isolation		30		dB	Low Side LO, LO = 0dBm, IF = 50Ω
RF to IF Isolation		48		dB	LO = 0dBm

Note:

1) Test conditions unless otherwise noted : Temp. = 25°C, Z₀ = 50Ω

Performance Data

Item	Low Side LO												Unit
RF Frequency	24	24	24	28	28	28	30	30	30	32	32	32	GHz
LO Frequency	16	20	22	20	24	26	22	26	28	24	28	30	GHz
IF Frequency	8	4	2	8	4	2	8	4	2	8	4	2	GHz
Conversion Loss	-16.1	-15.8	-14.8	-15.4	-14.4	-13.5	-18.3	-16.1	-16.4	-19.8	-18.8	-18.6	dB

Item	Hi Side LO												Unit
RF Frequency	18	18	18	20	20	20	22	22	22	24	24	24	GHz
LO Frequency	26	22	20	28	24	22	30	26	24	32	28	26	GHz
IF Frequency	8	4	2	8	4	2	8	4	2	8	4	2	GHz
Conversion Loss	-16.3	-15.9	-14.6	-18.1	-16.7	-15.4	-19.0	-18.6	-17.9	-15.8	-16.0	-16.6	dB

Note:

1) Test conditions unless otherwise noted : LO = 18dBm, RF Power = 0dBm, Temp. = 25°C, Z0 = 50Ω

Recommended Operating Condition

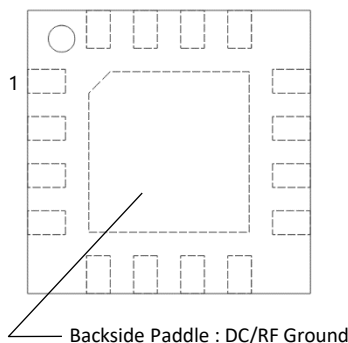
Parameter	Min	Typ	Max	Units
Operating Temperature	-40	25	85	°C
Storage Temperature	-55	-	150	°C

Absolute Maximum Ratings

Parameter	Rating	Units
Junction Temperature	TBD	°C
RF Input Power (CW)	TBD	dBm

Pin Description

Pin No.	Function	Description
2	LO	LO Input/Output.
7	IF	IF Input.
11	RF	RF Output/Input
1, 3, 6, 8, 10, 12	GND	Ground
4, 5, 9, 13~16	N/C	Not Connected



MSL Rating

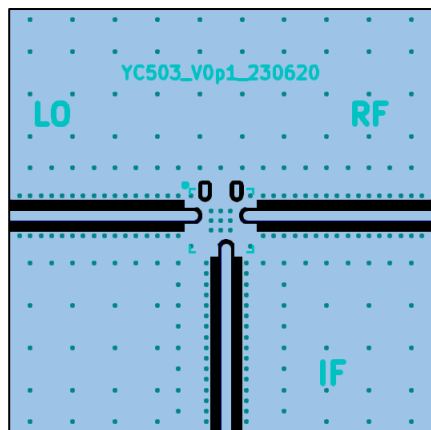
MSL Rating : TBD
 Test : TBD
 Standard : TBD

ESD Sensitivity Ratings

ESD Rating : TBD
 Test : TBD
 Standard : TBD



Evaluation Board PCB Information

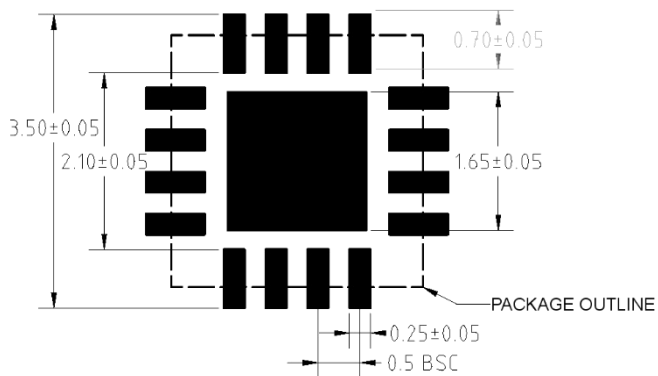


Layer		Material	Layer Thickness (mm)	Note
Top	Copper	RO4350B	0.018	1/2 oz
Core	Core		0.203	10 mil
Inner 1	Copper		0.018	1/2 oz
Prepreg	Prepreg	FR4	0.110	
Inner 2	Copper	FR4	0.018	1/2 oz
Core	Core		0.200	
Bottom	Copper		0.018	1/2 oz

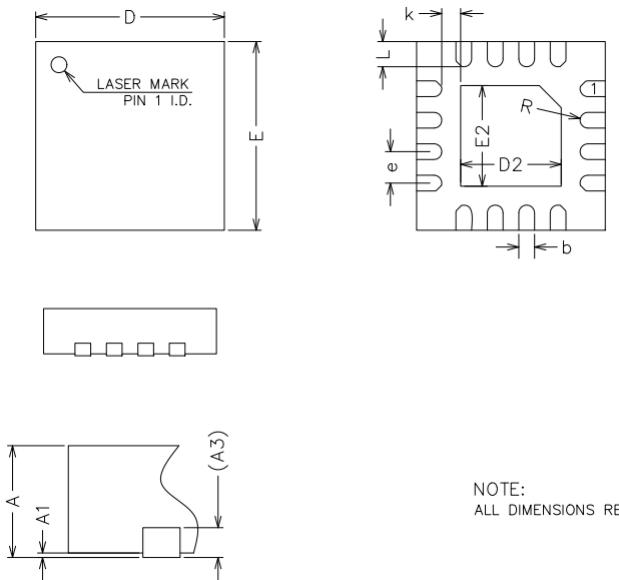
Package Marking



PCB Land Pattern



Package Outline Drawing



DIM SYMBOL	MIN.	NOM.	MAX.
A	0.70	0.75	0.80
A1	0	0.02	0.05
A3	0.20 REF		
b	0.20	0.25	0.30
D	2.90	3.00	3.10
E	2.90	3.00	3.10
D2	1.55	1.65	1.75
E2	1.55	1.65	1.75
e	0.40	0.50	0.60
L	0.35	0.40	0.45
K	0.20	-	-
R	0.09	-	-