

QUADRATURE MODULATOR

 Check for Samples: [TRF370417-DIE](#)

FEATURES

- Low Noise Floor
- Single Supply: 4.5-V–5.5-V Operation
- Silicon Germanium Technology

APPLICATIONS

- Cellular Base Station Transceiver
- CDMA: IS95, UMTS, CDMA2000, TD-SCDMA
- TDMA: GSM, IS-136, EDGE/UWC-136
- Multicarrier GSM
- WiMAX: 802.16d/e
- 3GPP: LTE
- Point-to-Point (P2P) Microwave
- Wideband Software-Defined Radio
- Public Safety: TETRA/APC025
- Communication-System Testers
- Cable Modem Termination System (CMTS)

DESCRIPTION

The TRF370417-DIE is a low-noise direct quadrature modulator, capable of converting complex modulated signals from baseband or IF directly up to RF. The TRF370417-DIE is a high-performance, superior-linearity device that operates at RF. The modulator is implemented as a double-balanced mixer. The RF output block consists of a differential to single-ended converter and an RF amplifier capable of driving a single-ended 50-Ω load without any need of external components.

ORDERING INFORMATION⁽¹⁾

PRODUCT	PACKAGE DESIGNATOR	PACKAGE	ORDERABLE PART NUMBER	PACKAGE QUANTITY
TRF370417	TD	Bare die in waffle pack ⁽²⁾	TRF370417TDA1	169
			TRF370417TDA2	10

- (1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.
- (2) Processing is per the Texas Instruments commercial production baseline and is in compliance with the Texas Instruments Quality Control System in effect at the time of manufacture. Electrical screening consists of DC parametric and functional testing at room temperature only. Unless otherwise specified by Texas Instruments AC performance and performance over temperature is not warranted. Visual Inspection is performed in accordance with MIL-STD-883 Test Method 2010 Condition B at 75X minimum.



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This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

BARE DIE INFORMATION

DIE THICKNESS	BACKSIDE FINISH	BACKSIDE POTENTIAL	BOND PAD METALLIZATION COMPOSITION	BOND PAD THICKNESS
10.5 mils.	Silicon with backgrind	Floating	AL5TiN	675 nm

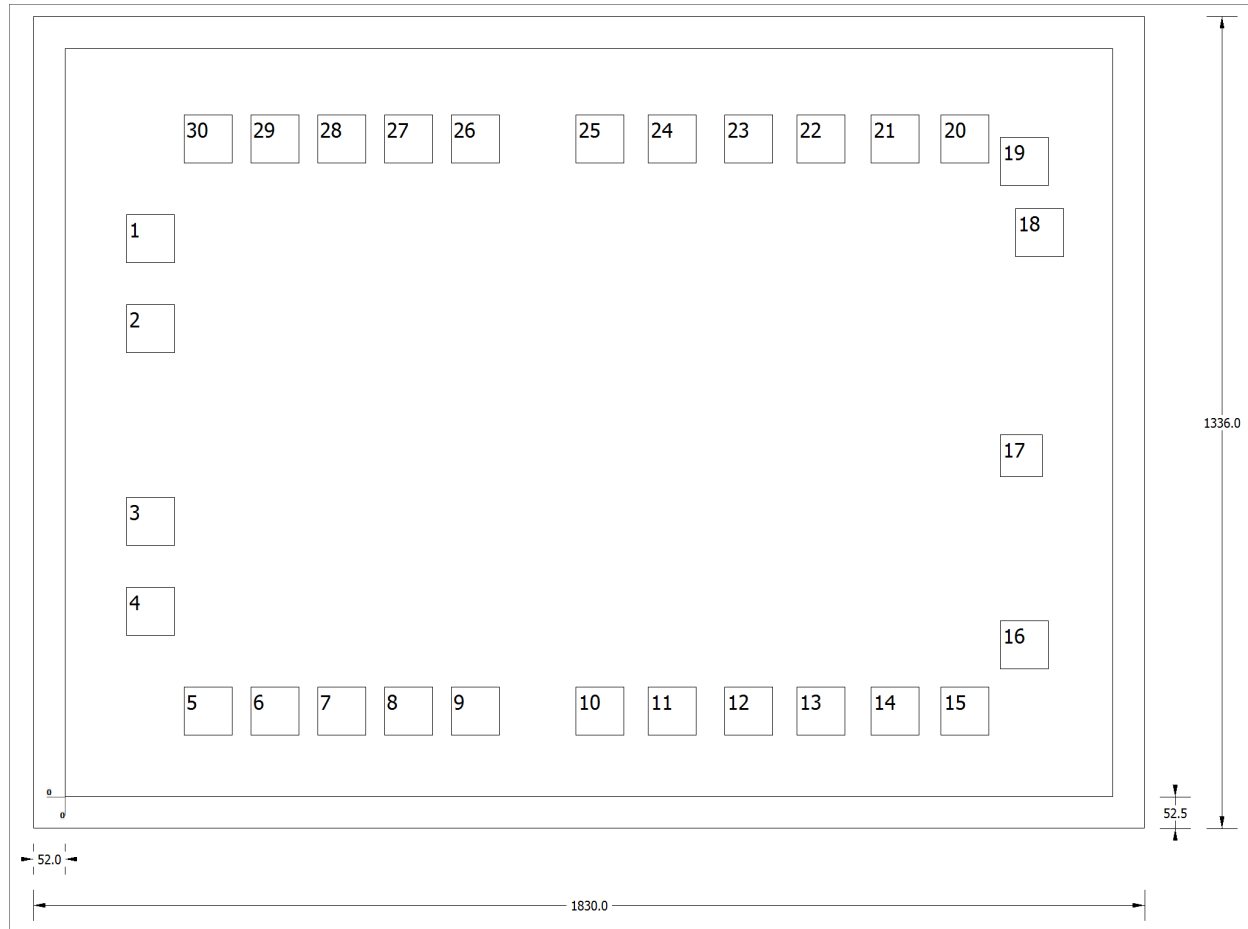


Table 1. Bond Pad Coordinates in Microns

DESCRIPTION	PAD NUMBER	X MIN	Y MIN	X MAX	Y MAX
N/C	1	100.72	877.63	180.72	957.63
LOP	2	100.72	730.13	180.72	810.13
LON	3	100.72	412.87	180.72	492.87
GND	4	100.72	265.37	180.72	345.37
mountpad	5	195.5	100.72	275.5	180.72
mountpad	6	305.5	100.72	385.5	180.72
mountpad	7	415.5	100.72	495.5	180.72
mountpad	8	525.5	100.72	605.5	180.72
mountpad	9	635.5	100.72	715.5	180.72
mountpad	10	840.53	100.72	920.53	180.72
BBQN	11	959.56	100.72	1039.56	180.72
BBQP	12	1085.71	100.72	1165.71	180.72
GND	13	1204.74	100.72	1284.74	180.72
mountpad	14	1326.54	100.72	1406.54	180.72
GND	15	1442.5	100.71	1522.5	180.71
mountpad	16	1540.27	210.21	1620.27	290.21
RF_OUT	17	1540.27	525.77	1610.27	595.77
mountpad	18	1565.08	888.43	1645.08	968.43
VCC	19	1540.27	1004.51	1620.27	1084.51
VCC	20	1442.5	1042.28	1522.5	1122.28
mountpad	21	1326.54	1042.28	1406.54	1122.28
GND	22	1204.74	1042.28	1284.74	1122.28
BBIP	23	1085.71	1042.28	1165.71	1122.28
BBIN	24	959.56	1042.28	1039.56	1122.28
mountpad	25	840.53	1042.28	920.53	1122.28
mountpad	26	635.5	1042.28	715.5	1122.28
mountpad	27	525.5	1042.28	605.5	1122.28
mountpad	28	415.5	1042.28	495.5	1122.28
mountpad	29	305.5	1042.28	385.5	1122.28
VCC	30	195.5	1042.28	275.5	1122.28

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