XM0830SA-BL1301

GaAs IC High Power SPDT Switch for 0.8-3.0GHz

Applications

GSM, UMTS, AMPS, PCS, DCS, W-CDMA, TD-SCDMA
and other RF applications.

Features

- Positive Voltage Control
- Pin0.1dB (@+2.6V).....38dBm typ.
- Low Insertion Loss.....0.35dB @0.9GHz / 0.35dB @2GHz
- High Isolation.....30dB @ 0.9GHz / 30dB @2GHz
- Logic Function Included
- Small / Thin Package.....12pin Leadless Package
(2.5mm × 2.0mm × 0.5mm, RoHS Compliant)
- MSL.....3

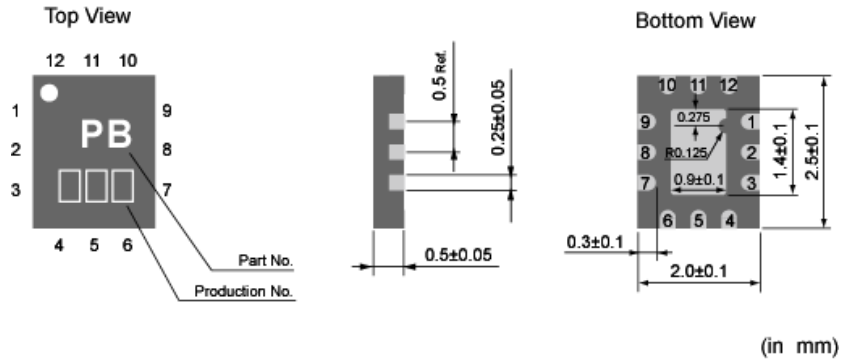
Absolute Maximum Ratings

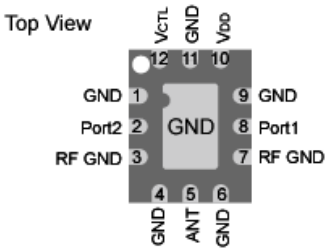
Symbol	Parameter	Conditions	Rating	Unit
V_{DD}	Supply Voltage	Ta = 25°C	1.8 to 4.0	V
$V_{CTL(H)}$	Control Voltage (High)	Ta = 25°C, $V_{CTL} \leq V_{DD}$	1.8 to 4.0	V
$V_{CTL(L)}$	Control Voltage (Low)		-0.2 to 0.2	V
Pin	RF Input Power	Ta = 25°C	38	dBm
Top	Operating Temperature	-	-40 to 85	°C
Tstg	Storage Temperature	-	-55 to 150	°C

Electrical Specifications (Ta=25°C, V_{DD}=2.6V, $V_{CTL(H)}$=1.8V, $V_{CTL(L)}$=0V)

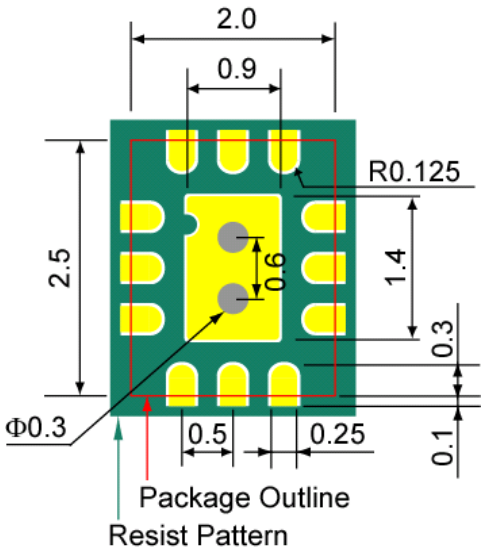
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
f_0	Operation Frequency	-	0.8	-	2.5	GHz
IL	Insertion Loss	ANT-Port@0.8GHz	-	0.3	0.6	dB
		ANT-Port@2.0GHz	-	0.35	0.6	dB
ISO	Isolation	Port-Port@0.8GHz	28	31	-	dB
		Port-Port@2.0GHz	-	30	-	dB
$P_{in0.5dB}$	Input Power for 0.5dB Compression	ANT-Port@2.0GHz	35	38	-	dBm

Pin Connections





Land Pattern

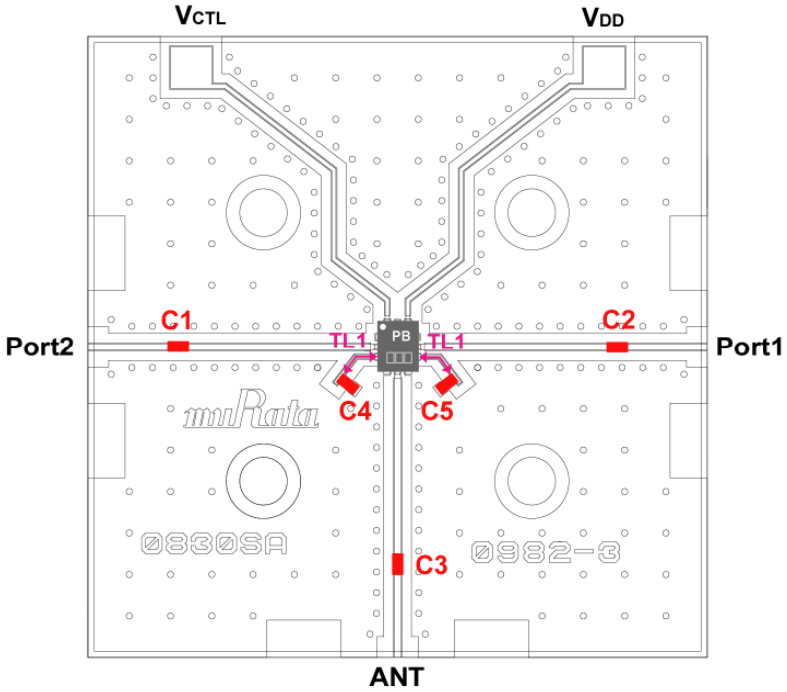


Truth Table

ON PORT	VCTL
ANT-Port1	H
ANT-Port2	L

H: 1.8V to 4.0V (V_{DD}), 1.8V to 4.0V (V_{CTL})
L: 0V

Evaluation Board



Parts List

Part No.	Products	Value
C1-C3	GRM155(Murata)	47 pF
C4, C5		4 pF

Substrate

Transmission Line: 50Ω
Material :FR4 (ε_r = 4.4)
Size : 30mm x 30mm
Thickness : 0.2mm + Dummy 0.4mm

TL1

Width: 0.2mm
Length: 2mm

Typical Performance Data (On Evaluation Board, Fixture's Loss de-embedded)

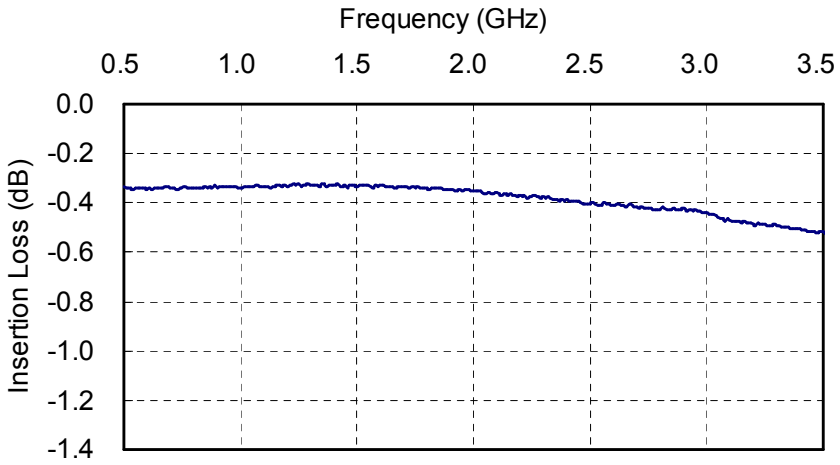


Fig.1 Insertion Loss vs. Frequency

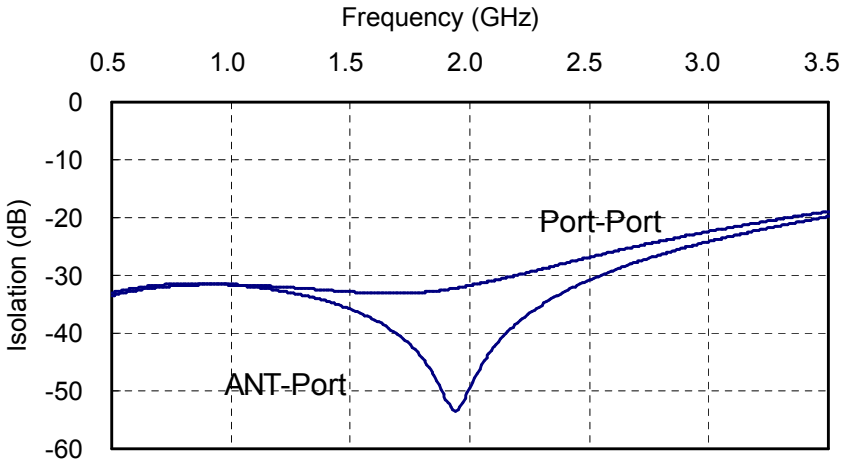


Fig.2 Isolation vs. Frequency

Typical Performance Data (On Evaluation Board, Fixture's Loss de-embedded)

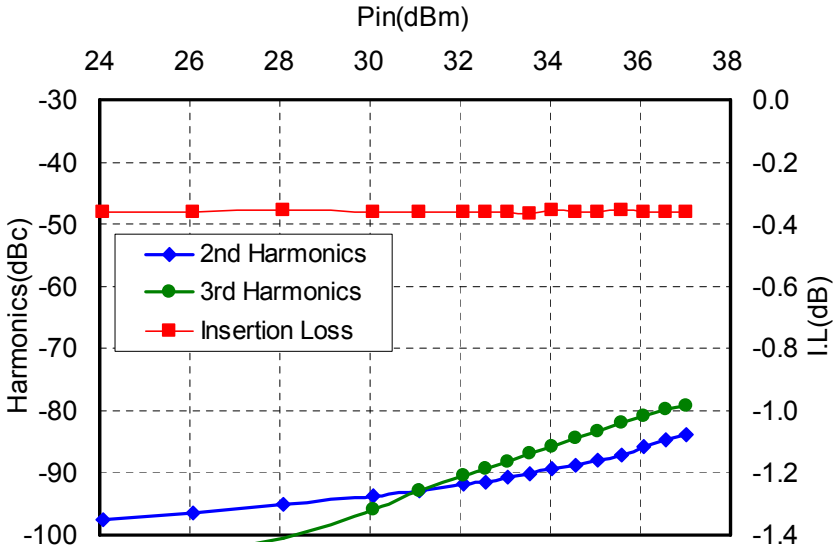


Fig.3 Output Power and Insertion Loss vs. Input Power (f=0.9GHz)

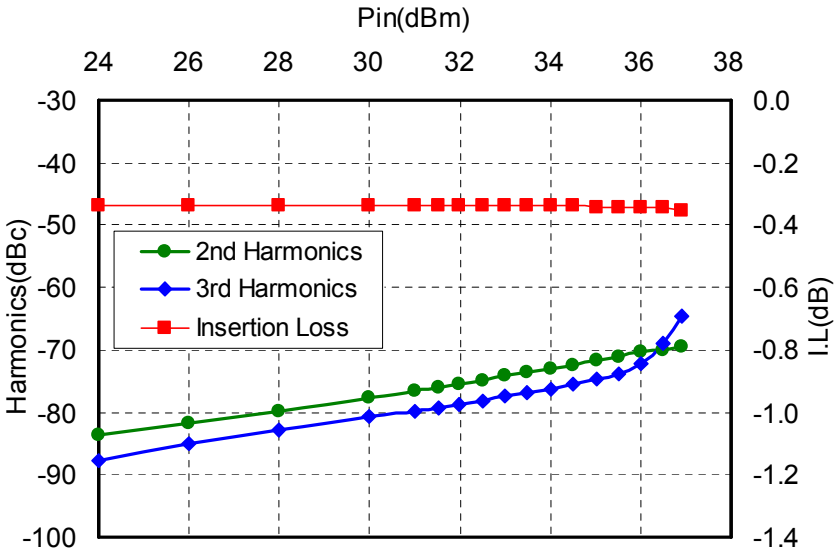


Fig.4 Output Power and Insertion Loss vs. Input Power (f=2.0GHz)

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CAUTION -Limitation of Applications-
The product is designed and manufactured for consumer application only and is not available for any application listed below which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property.

- Aircraft equipment.
- Aerospace equipment.
- Undersea equipment.
- Medical equipment.
- Transportation equipment (vehicles, trains, ships, etc.).
- Traffic signal equipment.
- Disaster prevention / crime prevention equipment.
- Application of similar complexity and/ or reliability requirements to the applications listed in the above.