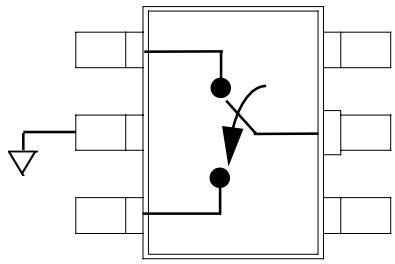
GaAs MMIC CSH210R

Target Datasheet

- TX-RX and diversity switch for mobile communications
- GaAs PHEMT Technology
- Low Insertion Loss
- No supply Voltage needed
- Positive Operating voltage
- SOT363 package (2mm x 2mm)

ESD: **E**lectro**s**tatic **d**ischarge sensitive device
Observe handling Precautions!



Type	Marking	Ordering code (tape and reel)	Package
CSH210R	**TBD**	**TBD**	**SOT363**

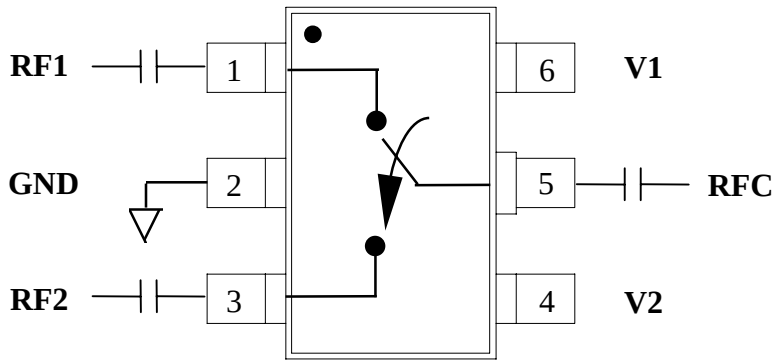
Maximum Ratings	Symbol	Value		Unit
		min	max	
Control Voltage Range		-5	5	V
RF Input Power	Pin		3	W
Thermal Resistance	R_{th}		tbd	°C/W
Junction Temperature	T_j		125	°C
Storage Temperature	T_{stg}	-55	150	°C

Electrical Characteristics
(T=25C, Vcntrl=3.0V, Pin=0dBm)

Parameter	Symbol	Test Condition	min	typ	max	Unit
Insertion Loss RFC-RF1, RFC-RF2	ILRF	DC-0.5GHz		0.25	0.3	dB
		DC-1.0GHz		0.3	0.4	
		DC-2.0GHz		0.4	0.5	
		DC-3.0GHz		0.55	0.7	
Isolation RF1-RF2	ISOL	DC-0.5GHz	25	28		dB
		DC-1.0GHz	20	24		
		DC-2.0GHz	16	20		
		DC-3.0GHz	13	18		
VSWR* (all ports)	VSWR	DC-2.5GHz		1.3:1		
		DC-3.0GHz		1.5:1		
Harmonics	P_{harm}	DC-3.0GHz			tbd	dBc
Gate Leakage	I_L			4.0	14	uA
Trise /Tfall (10% RF to 90%RF)				10		nS
Ton /Toff (50% CNTRL -90%/10%RF)				20		nS
Output Power for 0.1 dB compression	P-0.1	DC-3.0GHz		26		dBm
Output Power for 1 dB compression	P1	DC-3.0GHz		30		dBm
Intermodulation Intercept Point	IP3	Pin=25dBm	52	56		dBm
		Freq.=1.0Ghz				

*VSWR defined for Insertion Loss State only

PIN Assignments & Functional Block Diagram



*external DC blocking capacitor required 100pF 3 places

Standard Control Logic

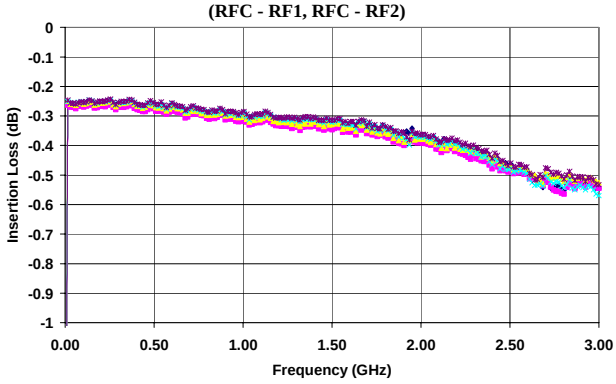
PIN	Symbol	Abbreviation	Description
1	RF OUTPUT 1	RF1	RF OUTPUT
2	GND	GND	Circuit common and DC return
3	RF OUTPUT 2	RF2	RF OUTPUT
4	V_CONTROL 2	V2	RF OUTPUT 2 control
5	RF COMMON	RFC	Common RF port
6	V_CONTROL 1	V1	RF OUTPUT 1 control

V1	V2	Through Path
0V	3V	RFC – RF1
3V	0V	RFC – RF2

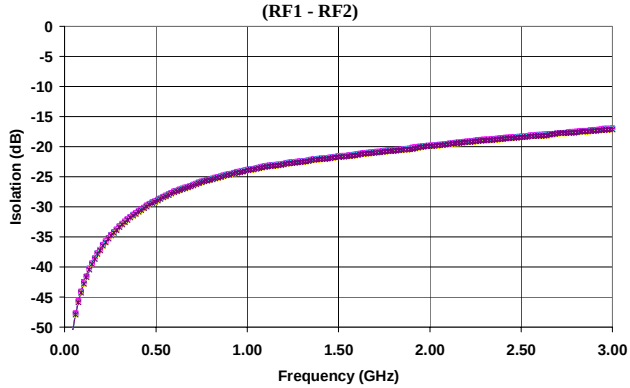
Measured Results

(All Ports connected to 50ohms, Pin=0dBm unless otherwise specified)

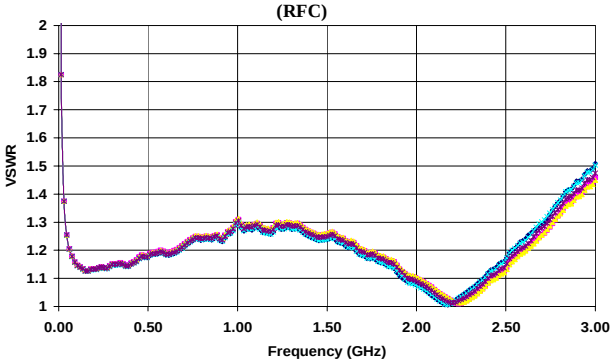
Insertion Loss vs. Frequency
(RFC - RF1, RFC - RF2)



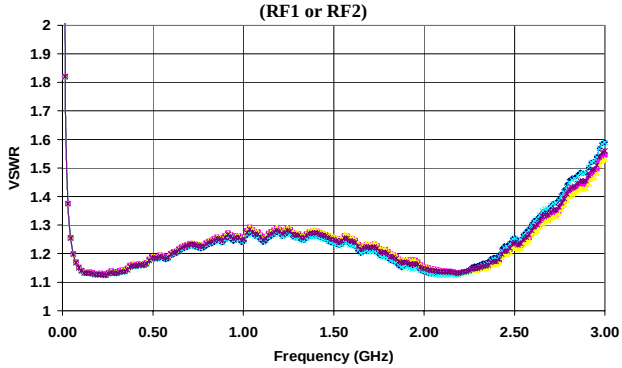
Isolation vs. Frequency
(RF1 - RF2)



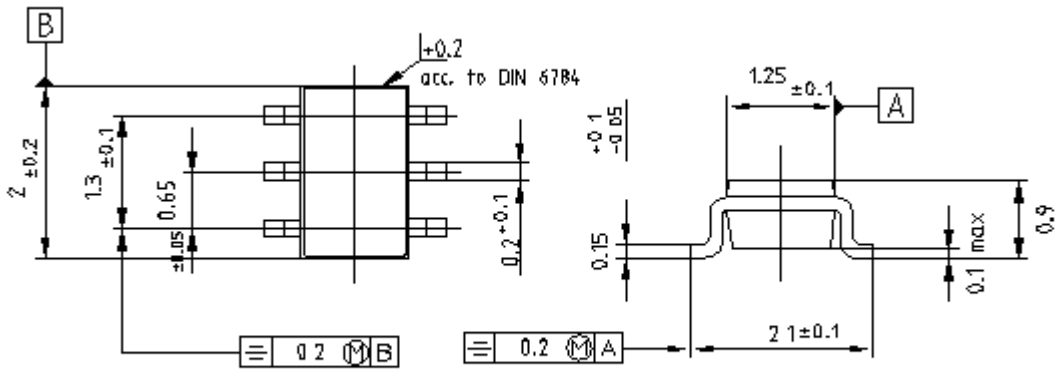
Input VSWR vs. Frequency
(RFC)



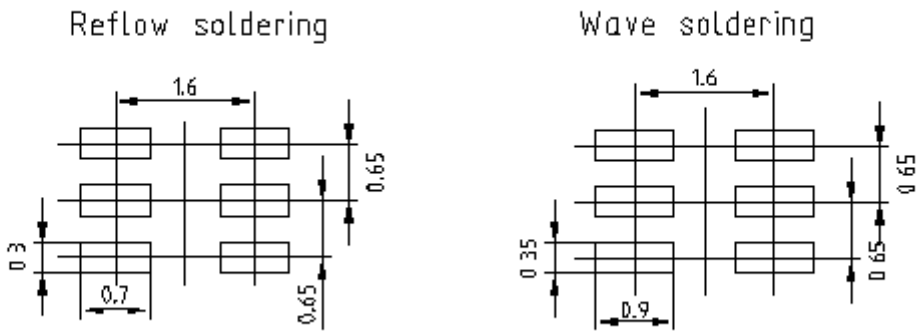
Output VSWR vs. Frequency
(RF1 or RF2)



Package Outline - SOT363



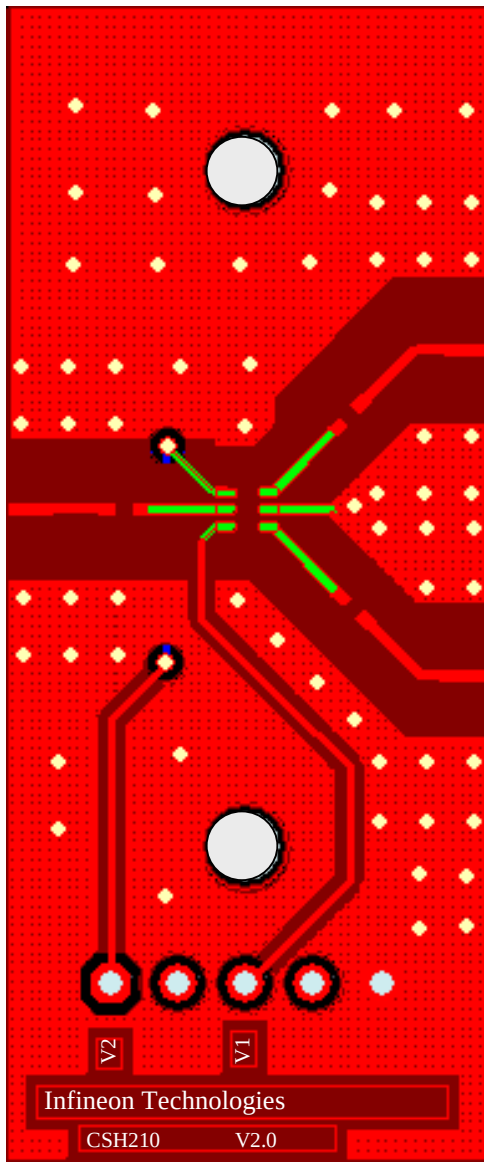
Recommended SOT363 Solder Footprint



Evaluation Board Layout

Board Size 0.75” x 1.75”

Board Thickness 0.047”, Board Material FR4 Multi-Layer



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