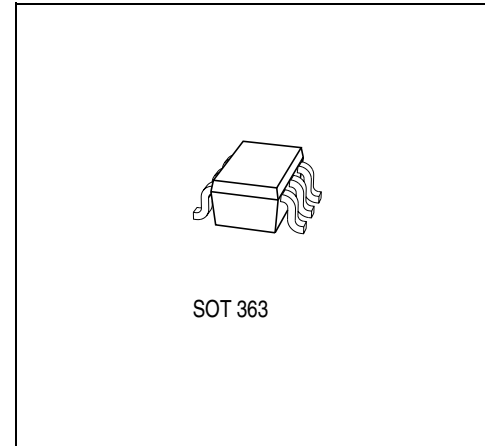


GaAs MMIC

Target Data Sheet

CSH 210P

- TX/RX- and diversity switch for mobile communications
- GaAs PHEMT technology
- Low insertion loss
- High IP_3
- No supply voltage needed
- Positive operating voltage range: 2.7 to 5 V
- P-SOT363-6-1 package (2 mm × 2 mm)



ESD: Electrostatic discharge sensitive device, observe handling precautions!

Type	Marking	Ordering Code (tape and reel)	Package
CSH 210P	on request	on request	P-SOT363-6-1

Maximum Ratings

Parameter	Symbol	Value		Unit
		min.	max.	
Control voltage range	V_{CON}	- 5	5	V
RF Input Power	P_{IN}	-	6	W
Thermal resistance	R_{th}	-	t.b.d.	K/W
Junction temperature	T_j	-	125	°C
Storage temperature	T_{stg}	- 55	150	°C

Electrical Characteristics
 $(T_A = 25\text{ °C}; V_{\text{Ctrl}} = 3.0\text{ V}; P_{\text{IN}} = 0\text{ dBm})$

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Insertion Loss RFC - RF1 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	ILRF1	–	0.4 0.6	0.5 0.7	dB
Insertion Loss RFC - RF2 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	ILRF2	–	0.4 0.6	0.5 0.7	dB
Isolation RF1 - RF2 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	ISOL	–	20 15	–	dB
Return Loss ¹⁾ (all ports) 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	RL1/2/3	18 18	–	–	dB
Harmonics 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	P_{Harm}	– 61	–	–	dBc
Gate leakage 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	I_L	–	–	0.1	mA
$T_{\text{Rise}}/T_{\text{Fall}}$ (10% RF to 90% RF) 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	–	–	–	10	ns
$T_{\text{ON}}/T_{\text{OFF}}$ (50% CNTRL - 90%/10% RF) 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	–	–	–	20	ns
Output power for 1 dB compression	P_1	–	34	–	dBm
Intermodulation intercept point	$IP3$	–	51	–	dBm

¹⁾ Return loss defined for Insertion Loss state only.

Electrical Characteristics
 $(T_A = 25\text{ }^\circ\text{C}; V_{\text{Ctrl}} = 4.5\text{ V}; P_{\text{IN}} = 0\text{ dBm})$

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Insertion Loss RFC - RF1 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	ILRF1	– –	0.4 0.6	0.5 0.7	dB
Insertion Loss RFC - RF2 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	ILRF2	– –	0.4 0.6	0.5 0.7	
Isolation RF1 - RF2 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	ISOL	– –	20 15	– –	dB
Return Loss ¹⁾ (all ports) 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	RL1/2/3	18 18	– –	– –	
Harmonics 800 MHz - 1.0 GHz 1.0 GHz - 2.0 GHz	P_{Harm}	– 56	–	–	dBc
Gate leakage	I_L	–	0.1	–	
$T_{\text{Rise}}, T_{\text{Fall}}$ (10% RF to 90% RF)	–	–	10	–	ns
$T_{\text{ON}}, T_{\text{OFF}}$ (50% CNTRL - 90%/10% RF)	–	–	20	–	ns
Output power for 1 dB compression	P_1	–	38	–	dBm
Intermodulation intercept point	$IP3$	–	55	–	dBm

¹⁾ Return loss defined for Insertion Loss state only

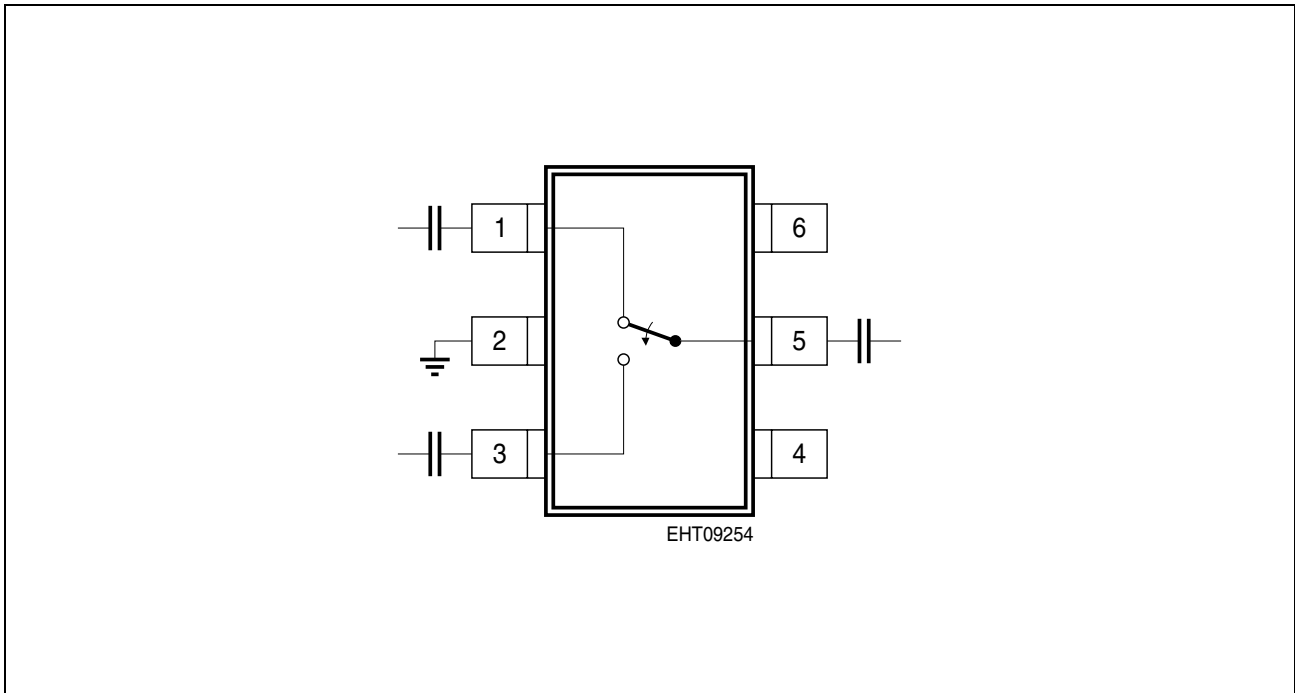


Figure 1 Functional Block Diagram

Pin Definitions and Functions

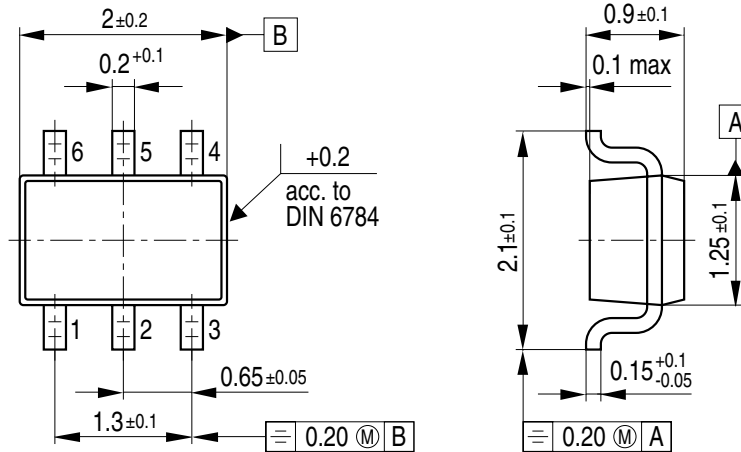
Pin No.	Symbol	Description
1	RF Output 1	RF Output controlled by $V_{Control B}$
2	GND	Circuit common and DC return
3	RF Output 2	RF Output controlled by $V_{Control A}$
4	$V_{Control A}$	RF Output 2 control
5	RF Common	Common RF port
6	$V_{Control B}$	RF Output 1 control

Switch Logic

V_1	V_2	Through Path
3 V	0 V	IN_OUT1
0 V	3 V	IN_OUT2

Package Outlines

P-SOT363-6-1
(Small Outline Transistor)



GPS05604

Sorts of Packing

Package outlines for tubes, trays etc. are contained in our Data Book "Package Information".

SMD = Surface Mounted Device

Dimensions in mm