XMSSJK3G8BA-120

CMOS GPIO SP4T for 0.7~6.0 GHz

■ Applications

SP4T Switch for LTE portion.

■ Features

- Small Package .....9 pin CSP Package
  (1.1 mm ×1.1 mm × 0.55 mm | max, RoHS Compliant)
- MSL 1

■ Absolute Maximum Ratings(Z=50ohm)

Symbol	Parameter	Conditions	Rating	Unit
VDD	Supply Voltage	Ta = 25°C	5.5	V
CTL	Control Voltage	Ta = 25°C	4.0	V
Pin	RF Input Power	Ta = 25°C, VDD = 1.8V CTL(H) = 1.8V, CTL(L)=0V 50ohm, Duty Cycle=50% Corresponding RF path should be On.	37	dBm
Top	Operating Temperature	-	-40 to 90	°C
Tstg	Storage Temperature	-	-55 to 150	°C

Stresses in excess of the absolute ratings may cause permanent damage. Functional operation is not implied under these conditions. Exposure to absolute ratings for extended periods of time may adversely affect reliability. No damage assuming only one parameter is set at limit at a time with all other parameters set at or below nominal operating condition.

■ DC Electrical Specifications

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Vdd	Supply Voltage		1.68	1.8	5.0	V
Idd	Supply Current	Ta = 25°C, Vdd = 1.8V CTL(H) =1.8V,CTL(L) =0V	-	65	85	uA
		Ta = -40~90°C	-	-	100	uA
CTL(H)	Control Voltage (High)	Ta = -40~90°C	1.2	1.8	3.5	V
CTL(L)	Control Voltage (Low)	Ta = -40~90°C	-0.2	0	0.5	V
Ictl	Control Current	Ta = 25°C, Vdd = 1.8V CTL(H) =1.8V,CTL(L) =0V	-	0.01	0.05	uA
		Ta = -40~90°C	-	-	5.0	uA

■ Electrical Specifications (Ta=25°C, Pin=0dBm, Z=50ohm, VDD=1.8V, CTL=1.8V/0V)

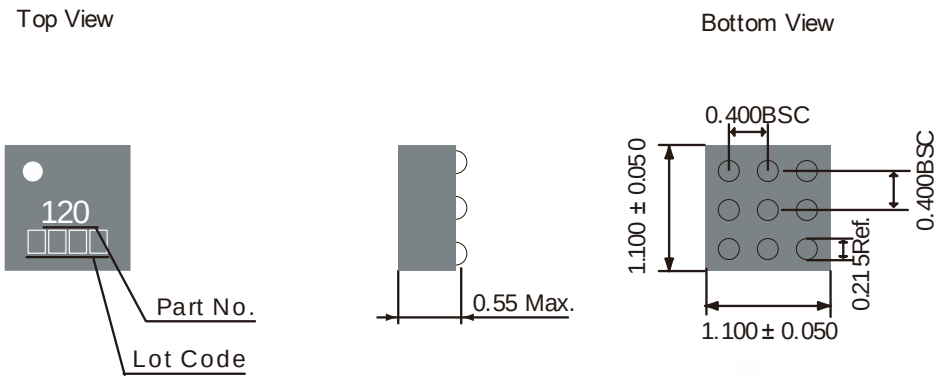
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
IL	RFC to RF1 RFC to RF2 RFC to RF3 RFC to RF4	10 – 1000MHz	-	0.27	0.45	dB
		1000 – 2200MHz	-	0.35	0.55	dB
		2200 – 2700MHz	-	0.38	0.57	dB
		2700 – 3800MHz	-	0.61	0.90	dB
		3800 – 4500MHz	-	0.95	1.4	dB
		4500 – 5000MHz	-	1.3	1.9	dB
		5000 – 6000MHz	-	2.0	2.8	dB
ISO	Adjacent Ports RFx-to-RFy, as RFx is actived	10 – 1000MHz	32	35.4	-	dB
		1000 – 2200MHz	24	27.3	-	dB
		2200 – 2700MHz	22	25.2	-	dB
		2700 – 3800MHz	17	21.6	-	dB
		3800 – 4500MHz	15	19.5	-	dB
		4500 – 5000MHz	14	17.9	-	dB
		5000 – 6000MHz	11	14.8	-	dB
	Non-Adjacent Ports RFx-to-RFy, as RFx is actived	10 – 1000MHz	35	39.8	-	dB
		1000 – 2200MHz	28	32.2	-	dB
		2200 – 2700MHz	25	30.5	-	dB
		2700 – 3800MHz	21	27.1	-	dB
		3800 – 4500MHz	19	24.9	-	dB
		4500 – 5000MHz	18	23.8	-	dB
		5000 – 6000MHz	15	20.6	-	dB
HD2	2nd Harmonics (Pin=26dBm)	698 – 960MHz	-	-78	-64	dBm
		1400 – 2170MHz	-	-76	-64	dBm
		2300 – 2700MHz	-	-75	-62	dBm
		3400 – 3800MHz	-	-70	-58	dBm
	2nd Harmonics (Pin=35dBm)	824 – 915MHz	-	-59	-45	dBm
	2nd Harmonics (Pin=33dBm)	1710 – 1910MHz	-	-62	-45	dBm
HD3	3rd Harmonics (Pin=26dBm)	698 – 960MHz	-	-84	-68	dBm
		1400 – 2170MHz	-	-82	-66	dBm
		2300 – 2700MHz	-	-77	-63	dBm
		3400 – 3800MHz	-	-81	-63	dBm
	3rd Harmonics (Pin=35dBm)	824 – 915MHz	-	-57	-43	dBm
	3rd Harmonics (Pin=33dBm)	1710 – 1910MHz	-	-60	-40	dBm
IIP2	2nd order input intercept point	*1	108	120	-	dBm
		*2	110	120	-	dBm
IIP3	3rd order input intercept point	*3	68	75	-	dBm
		*4	65	74	-	dBm
SWT	Switching Time	CTL50% - RF90%	-	2.2	3.7	usec

Notes

IIP2/IIP3 test conditions

	Band		CW tone 1 (MHz)	CW tone 1 (dBm)	CW tone 2 (MHz)	CW tone 2 (dBm)
*1	900	Band8	892	20	45	-15
*1	US cell	Band5	835	20	45	-15
*2	2600	Band7	2535	20	120	-15
*2	IMT	Band1	1950	20	190	-15
*2	PCS	Band2	1880	20	80	-15
*2	DCS	Band3	1745	20	95	-15
*2	PDC	Band11	1440	20	48	-15
*3	900	Band8	892	20	847	-15
*3	US cell	Band5	835	20	790	-15
*4	2600	Band7	2535	20	2415	-15
*4	IMT	Band1	1950	20	1760	-15
*4	PCS	Band2	1880	20	1800	-15
*4	DCS	Band3	1745	20	1650	-15
*4	PDC	Band11	1440	20	1392	-15

■ Package Outline and Pin Connections

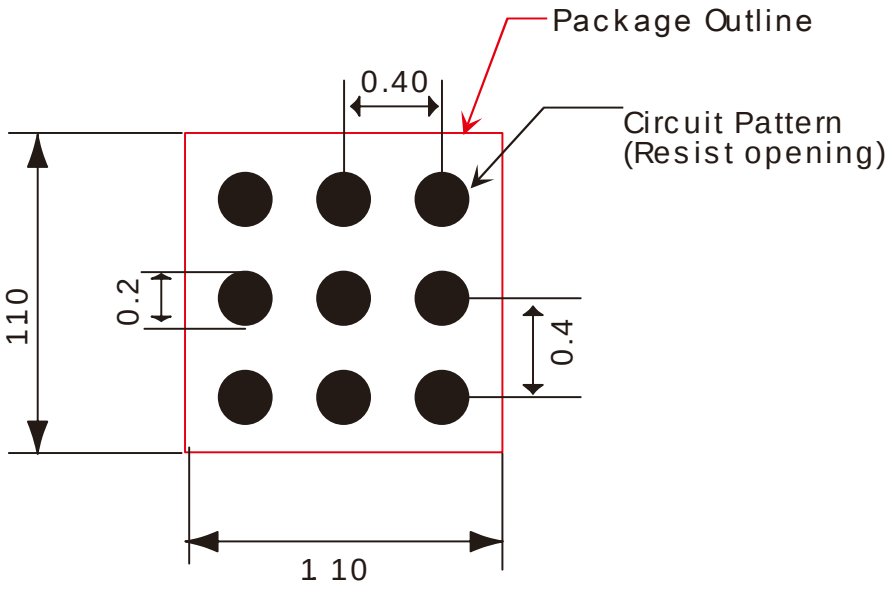


(in mm)

Pin No.	Function	Pin No.	Function	Pin No.	Function
1	VC1	4	RFC	7	VDD
2	RF2	5	RF3	8	VC2
3	RF1	6	RF4	9	GND

■ Land Pattern

・ Land Size (Resist opening area) : φ 200um

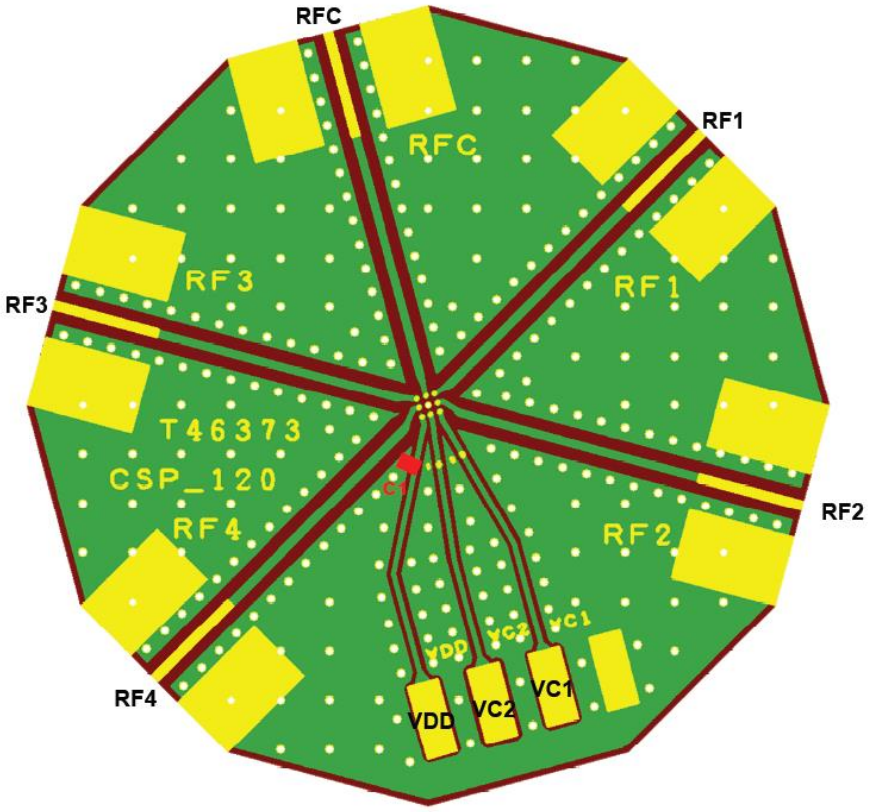


(in mm)

■ Truth Table

VC1	VC2	RF1	RF2	RF3	RF4
L	H	ON	OFF	OFF	OFF
H	L	OFF	ON	OFF	OFF
H	H	OFF	OFF	ON	OFF
L	L	OFF	OFF	OFF	ON

■ Evaluation Board



Parts List

Part No.	Products	Value
C1	GRM155 (Murata)	1000pF

Substrate

FR4, ε_r=4.4
Thickness = 0.2mm + 0.8mm(dummy)
Metal Thickness:18um
Size=20mm x 20mm

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