

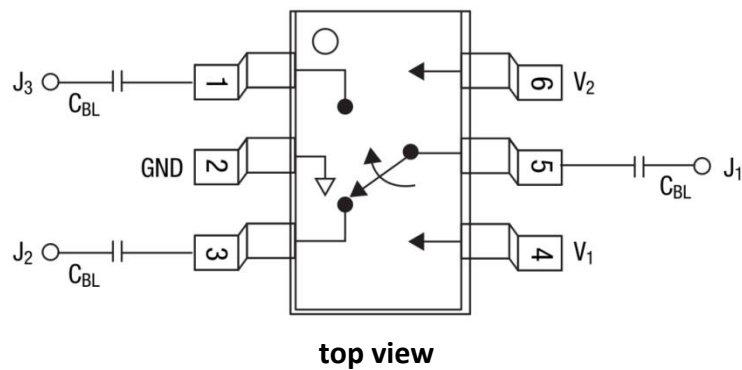
1. DESCRIPTION

The XA213-G4J is a medium-power IC FET SPDT switch in a low- cost miniature SOT363 plastic package. The XA213-G4J features low insertion loss and positive voltage operation with very low DC power consumption. This general-purpose switch can be used in a variety of telecommunications applications.

2. FEATURES

- Low insertion loss (0.4 dB @ 2.4 GHz)
- Isolation 22 dB @ 2.4 GHz
- Low DC power consumption
- PHEMT process
- Operates with 1.8 V control voltage
- Available lead (Pb)-free and RoHS-compliant

3. PINOUT AND APPLICATION CIRCUIT



Truth table

V1	V2	J1 - J2	J1 - J3
0	VHIGH	Isolation	Insertion loss
VHIGH	0	Insertion loss	Isolation

DC blocking capacitors (C_{BL}) must be supplied externally for positive voltage operation.
 $C_{BL} = 100 \text{ pF}$ for operation $>500 \text{ MHz}$.

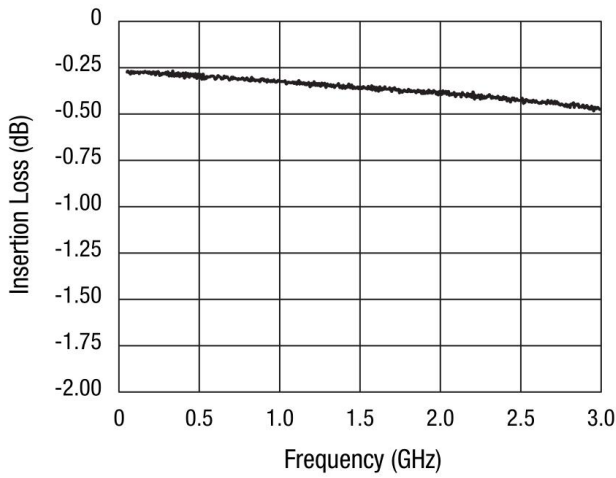
4. ELECTRICAL SPECIFICATIONS AT 25 °C (0,3V)

Parameter	Frequency	Min.	Typ.	Max.	Unit
Insertion loss(2)	0.1 – 1.0 GHz		0.3	0.5	dB
	1.0 – 2.0 GHz	–	0.4	0.6	dB
	2.0 – 3.0 GHz		0.5	0.7	dB
Isolation	0.1 – 1.0 GHz	24	27		dB
	1.0 – 2.0 GHz	20	23	–	dB
	2.0 – 3.0 GHz	16	19		dB
VSWR (3)	0.1 – 1.0 GHz	–	1.3:1	–	–
	1.0 – 3.0 GHz		1.4:1		

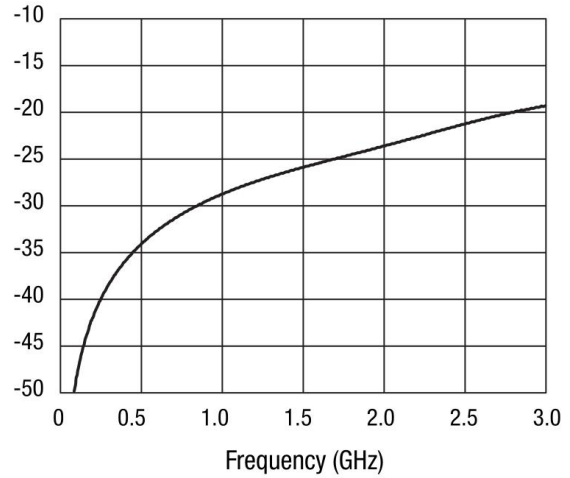
5. OPERATING CHARACTERISTICS AT 25 °C (0,3V)

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching characteristics	10/90% or 90/10% RF 50% CTL to 90/10% RF T RISE = 1 ns, BW = 500 MHz			10		ns
Rise, fall		–	–	20	–	Ns
On, off					25	
Video feedthru						
Input power for 1 dB compression	0/1.8 V	0.5–3 GHz	–	20	–	dBm
	0/3 V	0.5–3 GHz		27		dBm
Intermodulation intercept point (IP3)	For two-tone input power 5 dBm 0/3 V	0.5–3 GHz	–	40	–	dBm
Thermal resistance	–	–	–	25	–	°C/W
Control voltages	V LOW = 0 to 0.2 V @ 20 μA max. V HIGH = 1.8 V @ 100 μA max. to 5 V @ 200 mA max.					

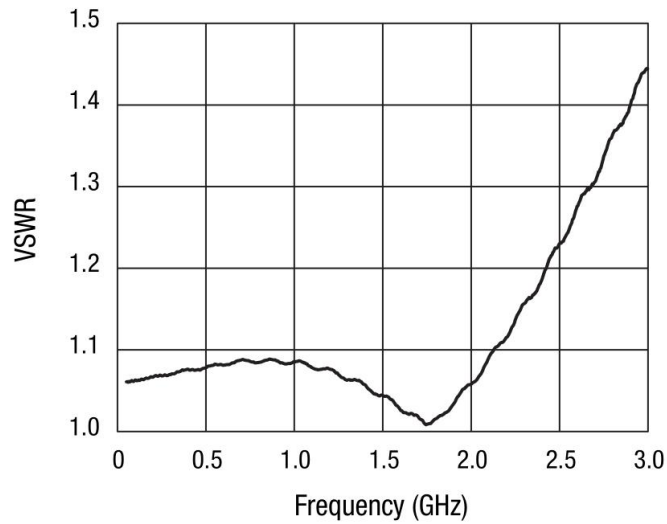
6. SIMULATED PERFORMANCE DATA (0,3V)



Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR vs. Frequency

7. ABSOLUTE MAXIMUM RATINGS

Characteristic	Value
RF input power	2 W max. for f > 500 MHz 500 mW for f < 500 MHz VCTL = 0/8 V
Supply voltage	8 V
Control voltage	-0.2 V, +8 V
Operating temperature	-40 °C to +85 °C
Storage temperature	-50 °C to +150 °C

Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

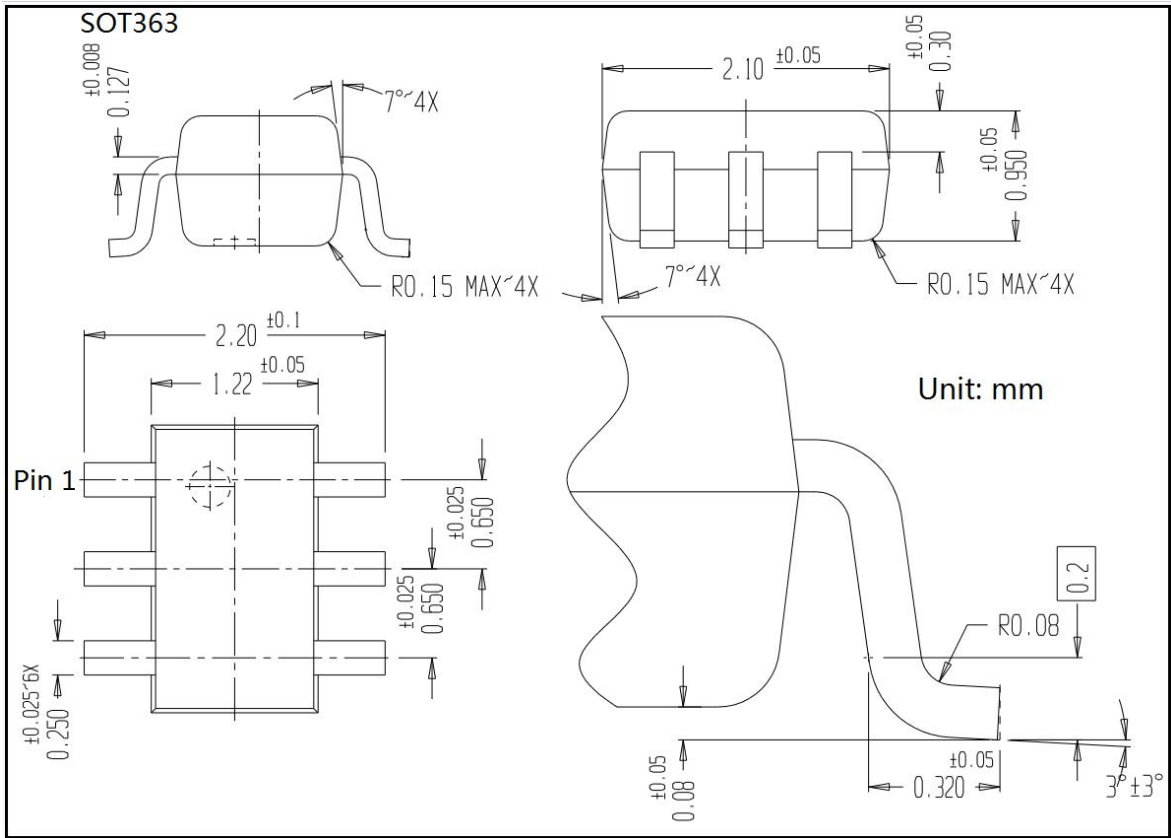
CAUTION: Although this device is designed to be as robust as possible, ESD (Electrostatic Discharge) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions must be employed at all times.

8. ORDERING INFORMATION

Ordering Information

Part Number	Device Marking	Package Type	Body size (mm)	Temperature (°C)	MSL	Transport Media	Package Quantity
XA213-G4J	G4J	SOT363	2.10 * 1.22	- 40 to 85	MSL3	T&R	3000

9. DIMENSIONAL DRAWINGS



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