

### Applications

- T/R switch in WLANs, Bluetooth™ and medium-power telecommunication applications

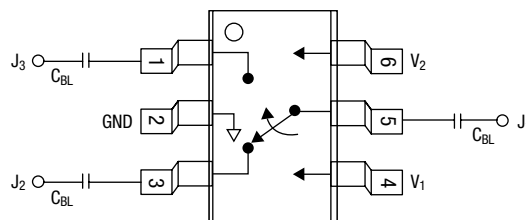
### Features

- Low insertion loss (0.4 dB @ 2.4 GHz)
- Isolation 26 dB @ 2.4 GHz
- Low DC power consumption
- PHEMT process
- Operates at 1.8 V control voltage
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020

### Description

The XA214-G4C is a medium-power IC FET SPDT switch in a low-cost miniature SC-70 6-lead plastic package. The XA214-G4C 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.

### Pin Out



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

### Electrical Specifications at 25 °C (0, 3 V)

Parameter <sup>(1)</sup>	Frequency	Min.	Typ.	Max.	Unit
Insertion loss <sup>(2)</sup>	0.5–1.0 GHz		0.3	0.5	dB
	1.0–2.0 GHz		0.4	0.6	dB
	2.0–3.0 GHz		0.4	0.6	dB
Isolation	0.5–1.0 GHz	27	30		dB
	1.0–2.0 GHz	24	27		dB
	2.0–3.0 GHz	22	25		dB
VSWR <sup>(3)</sup>	0.5–1.0 GHz		1.1:1		
	1.0–2.0 GHz		1.1:1		
	2.0–3.0 GHz		1.4:1		

1. All measurements made in a 50  $\Omega$  system, unless otherwise specified.

2. Insertion loss changes by 0.003 dB/°C.

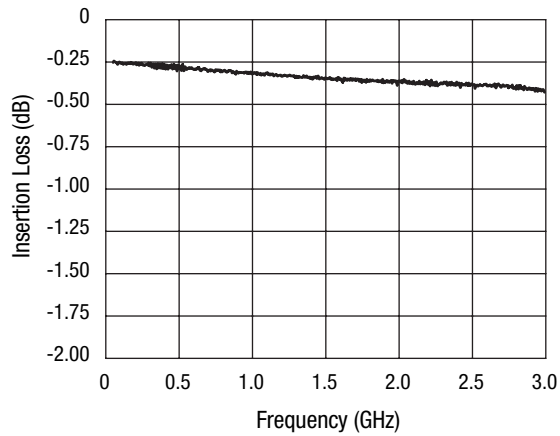
3. Insertion loss state.

# XA214-G4C SOT363 (SC-76-6)

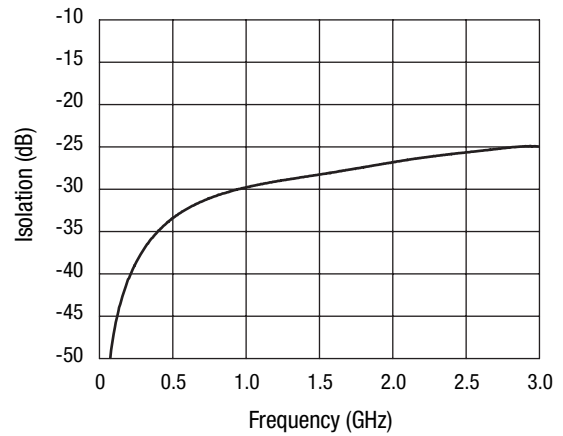
## Operating Characteristics at 25 °C (0, 3 V)

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching characteristics						
Rise, fall	10/90% or 90/10% RF			10		ns
On, off	50% CTL to 90/10% RF			20		ns
Video feedthru	$T_{RISE} = 1 \text{ ns}$ , BW = 500 MHz			25		mV
Input power for 1 dB compression	$V_{CTL} = 0/1.8 \text{ V}$ $V_{CTL} = 0/3 \text{ V}$	0.5–3.0 GHz 0.5–3.0 GHz		20 27		dBm dBm
Intermodulation intercept point (IP3)	For two-tone input power 5 dBm $V_{CTL} = 0/3 \text{ V}$ 0.5–3 GHz			40		dBm
Thermal resistance				25		°C/W
Control voltages	$V_{LOW} = 0 \text{ to } 0.2 \text{ V @ } 20 \text{ } \mu\text{A max.}$ $V_{HIGH} = 2.7 \text{ V @ } 100 \text{ } \mu\text{A max. to } 5 \text{ V @ } 200 \text{ } \mu\text{A max.}$					

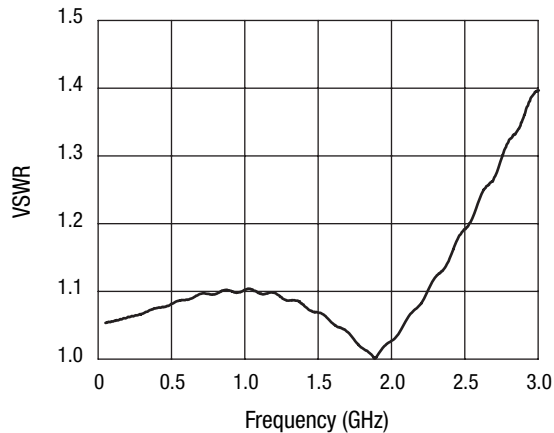
## Typical Performance Data (0, 3 V)



**Insertion Loss vs. Frequency**



**Isolation vs. Frequency**



**VSWR vs. Frequency**

# XA214-G4C SOT363 (SC-76-6)

## Absolute Maximum Ratings

Characteristic	Value
RF input power	2 W max. for $f > 500$ MHz 500 mW for $f < 500$ MHz $V_{CTL} = 0/8$ V
Supply voltage	8 V
Control voltage	-0.2 V, +8 V
Operating temperature	-40 °C to +85 °C
Storage temperature	-65 °C to +150 °C

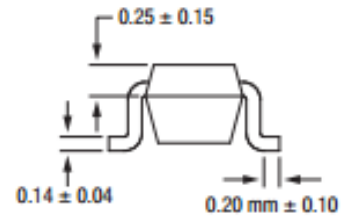
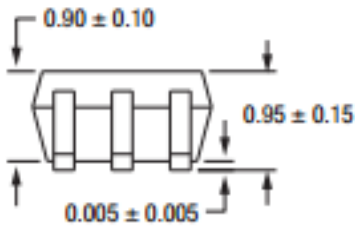
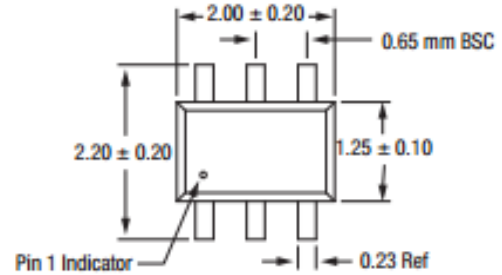
Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void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

## Truth Table

$V_1$	$V_2$	$J_1-J_2$	$J_1-J_3$
$V_{HIGH}$	0	Isolation	Insertion loss
0	$V_{HIGH}$	Insertion loss	Isolation

All other conditions not recommended.  
 $V_{HIGH} = 2.7$  to  $5$  V.



以上信息仅供参考. 如需帮助联系客服人员。谢谢 XINLUDA

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