

Applications

- General Purpose Medium Power Switches in Telecommunication Applications
- T/R Switches in 802.11b, g WLAN Blue Tooth Systems

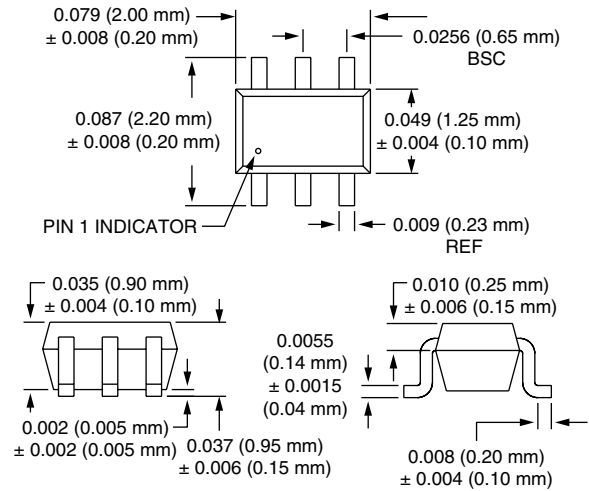
Features

- P_1 dB +30 dBm Typical @ +3 V
- IP3 43 dBm Typical @ +3 V
- Low Insertion Loss (0.3 dB @ 0.9 GHz)
- Low DC Power Consumption
- Ultra Miniature SC-70 6 Lead Package
- PHEMT Process

Description

The AS179-92 is an IC FET SPDT switch in a low cost miniature SC-70 6 lead plastic package. The AS179-92 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.

SC-70 6 Lead



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

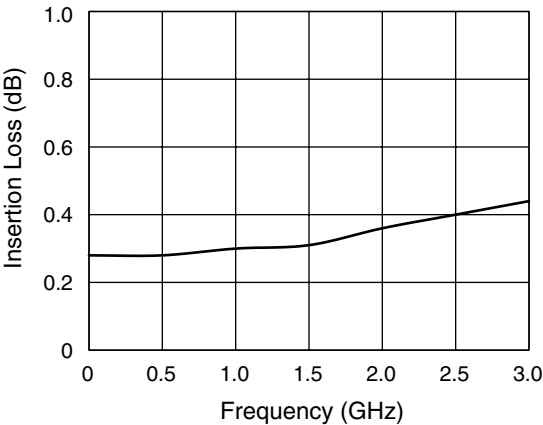
Parameter ¹	Frequency ²	Min.	Typ.	Max.	Unit
Insertion Loss ³	DC–1.0 GHz		0.3	0.4	dB
	1.0–2.0 GHz		0.4	0.5	dB
	2.0–3.0 GHz		0.4	0.6	dB
Isolation	DC–1.0 GHz	22	25		dB
	1.0–2.0 GHz	22	25		dB
	2.0–3.0 GHz	20	23		dB
VSWR ⁴	DC–1.0 GHz		1.2:1	1.4:1	
	1.0–2.0 GHz		1.2:1	1.4:1	
	2.0–3.0 GHz		1.3:1	1.4:1	

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

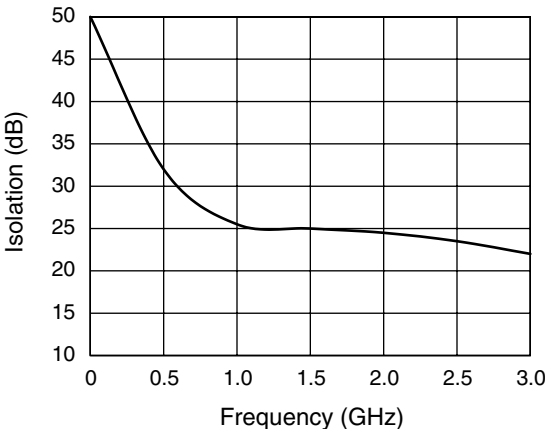
Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching Characteristics ⁵	Rise, Fall (10/90% or 90/10% RF)			10		ns
	On, Off (50% CTL to 90/10% RF)			20		ns
	Video Feedthru			25		mV
Input Power for 1 dB Compression	0/+3 V	0.5–3.0 GHz		+30		dBm
	0/+5 V	0.5–3.0 GHz		+34		dBm
Intermodulation Intercept Point (IP3)	For Two-tone Input Power +5 dBm					
	0/+3 V	0.5–3.0 GHz		+43		dBm
	0/+5 V	0.5–3.0 GHz		+50		dBm
Control Voltages	V _{Low} = 0 to 0.2 V @ 20 µA Max. V _{High} = +3 V @ 100 µA Max. to +5 V @ 200 µA Max.					

1. All measurements made in a 50 Ω system, unless otherwise specified.
 2. DC = 300 kHz.
 3. Insertion loss changes by 0.003 dB/°C.
4. Insertion loss state.
 5. Video feedthru measured with 1 ns risetime pulse and 500 MHz bandwidth.

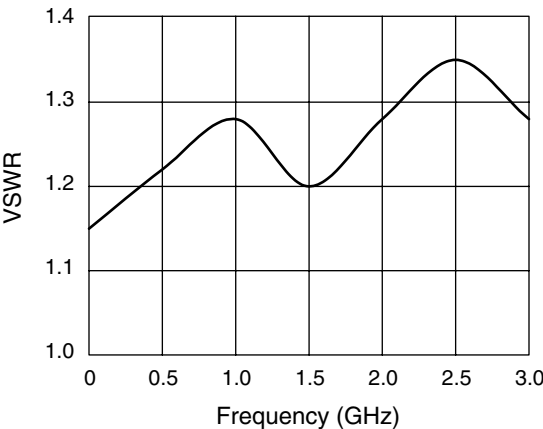
Typical Performance Data (0, +3 V)



Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR vs. Frequency

Absolute Maximum Ratings

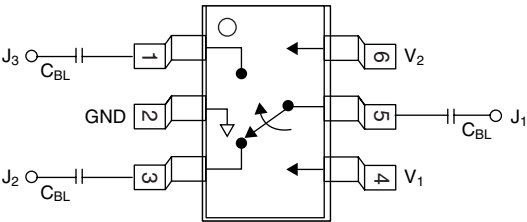
Characteristic	Value
RF Input Power	6 W > 500 MHz 0/+7 V Control
Control Voltage	-0.2 V, +8 V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Θ _{JC}	25°C/W

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

V_{High} = +3 to +5 V.

Pin Out



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