



Matched GaAs SPST Switch DC - 3.0 GHz

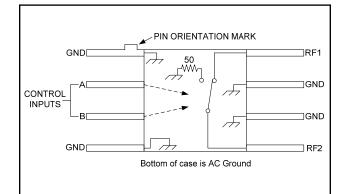
Features

- Fast Switching Speed, 6 nS Typical
- Ultra Low DC Power Consumption
- Small Package Size, 0.180" (4.6mm) Sq.

Description



Functional Schematic



Pin Configuration

Ordering Information

Part Number	Package			
SW-209 PIN	Ceramic (CR-3)			
SW-209B PIN	Screened to MIL-STD-883C, Method 5008.4, Table VII, Class B Hybrid			
SW-209G PIN	Ceramic Gull Winged (CR-10)			

Absolute Maximum Ratings ^{1,2}

Parameter	Absolute Maximum			
Max Input Power 0.05 GHz 0.5-2.0 GHz	+27 dBm +34 dBm			
Control Voltage	+5V, -8.5 V			
Operating Temperature	-55°C to +125°C			
Storage Temperature	-65°C to +150°C			

1. Exceeding any one or combination of these limits may cause permanent damage to this device.

 M/A-COM does not recommend sustained operation near these survivability limits.

Truth Table

Control Inputs		Condition of Switch			
Α	В	RF1 to RF2			
1	0	ON			
0	1	OFF			

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Rev. V3

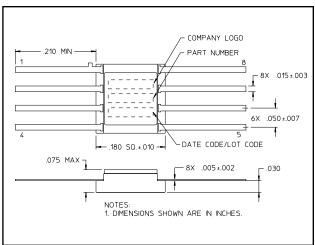
Electrical Specifications: -55°C to 85°C

Parameter	Test Conditions	Units	Min.	Тур.	Max.
Insertion Loss	DC - 3.0 GHz DC - 2.0 GHz DC - 1.0 GHz DC - 0.5 GHz		 	 	1.5 1.2 1.1 0.9
Isolation	DC - 3.0 GHz DC - 2.0 GHz DC - 1.0 GHz DC - 0.5 GHz	dB dB dB dB	27 32 40 55		
VSWR	DC - 3.0 GHz DC - 2.0 GHz DC - 1.0 GHz DC - 0.5 GHz	Ratio Ratio Ratio Ratio			1.6:1 1.5:1 1.2:1 1.2:1
Trise, Tfall	10% to 90% RF, 90% to 10% RF		—	3	—
Ton, Toff	50% Control to 90% RF, 50% Control to 10% RF		_	6	—
Transients	In-Band	mV	_	30	—
1 dB Compression Point	0.5 to 3.0 GHz, 0/-5 V 0.05 GHz, 0/-5 V 0.5 to 3.0 GHz, 0/-8 V 0.05 GHz, 0/-8 V	dBm dBm dBm dBm	 	+27 +21 +33 +26	
IP2	0.5 to 3.0 GHz 0.05 GHz	dBm dBm	_	+62 +68	_
IP3	0.5 to 3.0 GHz 0.05 GHz	dBm dBm	_	+40 +46	_
Control Current	V _{IN} Low (0 to -0.2 V) V _{IN} High (-5 V @ 50 μA Typ. to -8 V)	μΑ μΑ	—	_	20 300

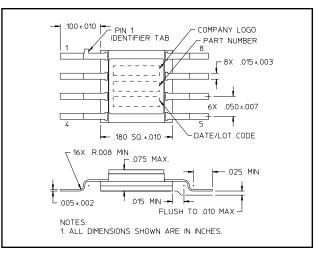
3. All specification apply with 50 Ω impedance connected to all RF ports with 0 and -5 Vdc control voltages.

CR-3

2



CR-10

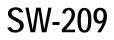


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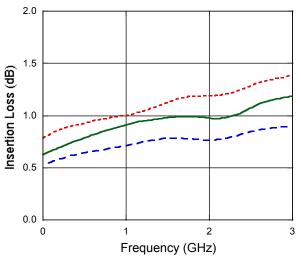
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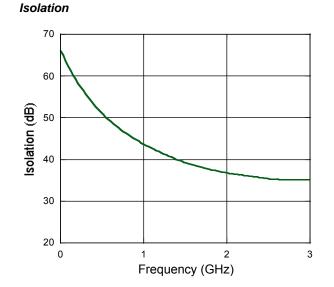


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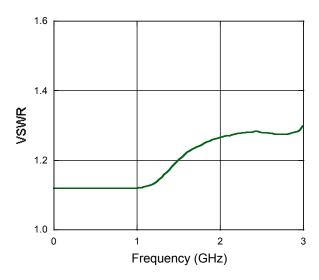
Typical Performance Curves

Insertion Loss





VSWR



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