

GaAs SPST Switch DC-4 GHz

SW-221/222/223

Features

- Miniature Ceramic Package
- Terminated (SW-221), High Isolation (SW-222), Low Loss (SW-223)
- Fast Switching Speed, 6 ns Typical
- Ultra Low DC Power Consumption

Guaranteed Specifications *

(From -55°C to +85°C)

Frequency Range		DC-4 GHz		
Model Number		SW-221	SW-222	SW-223
Insertion Loss	DC-4 GHz	1.2	1.2	1.0
	DC-2 GHz	1.0	1.0	0.8
	DC-1 GHz	0.9	0.9	0.7
	DC-0.5 GHz	0.9	0.9	0.7
VSWR	DC-4 GHz	1.9:1	1.6:1	1.8:1
	DC-2 GHz	1.4:1	1.4:1	1.3:1
	DC-1 GHz	1.2:1	1.2:1	1.2:1
	DC-0.5 GHz	1.2:1	1.2:1	1.2:1
Isolation	DC-4 GHz	22	32	22
	DC-2 GHz	40	45	28
	DC-1 GHz	55	55	38
	DC-0.5 GHz	60	65	45

Operating Characteristics

Impedance	50 Ohms Nominal		
Switching Characteristics†			
Trise, Tfall	3 ns Typ		
Ton, Toff (50% CTL to 90/10% RF)	6 ns Typ		
Transients (In-Band) SW-221/222	30 mV Typ		
Transients (In-Band) SW-223	10 mV Typ		
Input Power for 1 dB Compression			
Control Voltages (Vdc)	0/-5	0 /-8	
0.5-4 GHz	+27	+33	dBm Typ
0.05 GHz	+21	+26	dBm Typ
Intermodulation Intercept Point (for two-tone input power up to +13 dBm)			
Intercept Points	IP ₂	IP ₃	
0.5-4 GHz	+68	+46	dBm Typ
0.05 GHz	+62	+40	dBm Typ
Control Voltages (Complementary Logic)			
V _{IN} Low	0 to -0.2V @ 20 µA Max		
V _{IN} Hi	-5V @ 50 µA Typ to -8V @ 300 µA Max		

Environmental

See Appendix for MIL-STD-883 screening option.

* All specifications apply with 50 ohm impedance connected to all RF ports with 0 and -5 VDC Control Voltages.

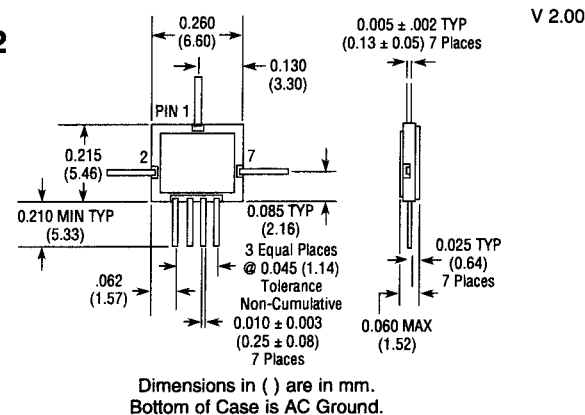
† Faster switching speed can be achieved with enhanced driver waveform.

** For the SW-222 and SW-223 only. RF1 is an open circuit and RF2 is shorted to case ground for the "OFF" switch condition.

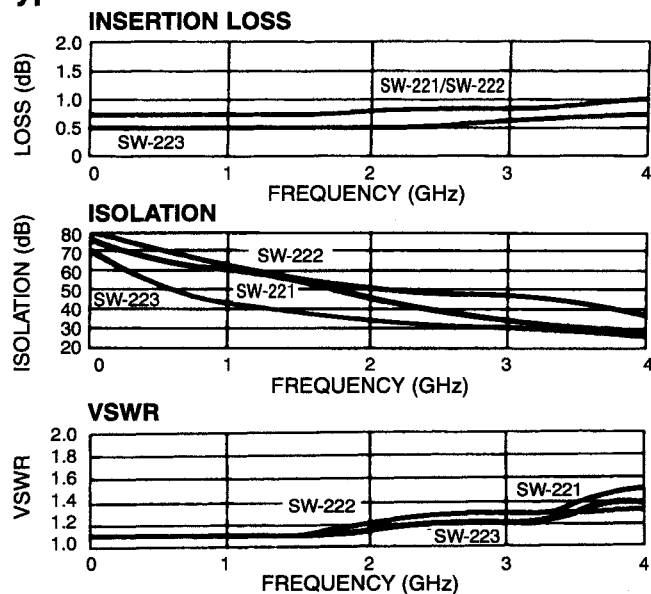
Ordering Information

Model No.	Package
SW-221 PIN	Ceramic
SW-222 PIN	Ceramic
SW-223 PIN	Ceramic

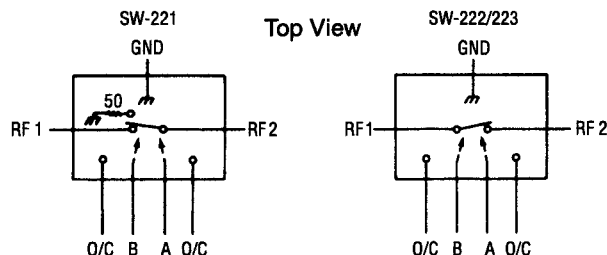
CR-2



Typical Performance



Pin Configuration



Truth Table

Control Input		Condition of Switch
A	B	RF1 to RF2
Hi	Low	ON
Low	Hi	OFF

Specifications Subject to Change Without Notice.