

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	dB Max
	DC-2 GHz	1.0	1.0	0.8	dB Max
	DC-1 GHz	0.9	0.9	0.7	dB Max
	DC-0.5 GHz	0.9	0.9	0.7	dB Max
VSWR	DC-4 GHz	1.9:1	1.6:1	1.8:1	Max
	DC-2 GHz	1.4:1	1.4:1	1.3:1	Max
	DC-1 GHz	1.2:1	1.2:1	1.2:1	Max
	DC-0.5 GHz	1.2:1	1.2:1	1.2:1	Max
Isolation	DC-4 GHz	22	32	22	dB Min
	DC-2 GHz	40	45	28	dB Min
	DC-1 GHz	55	55	38	dB Min
	DC-0.5 GHz	60	65	45	dB Min

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.

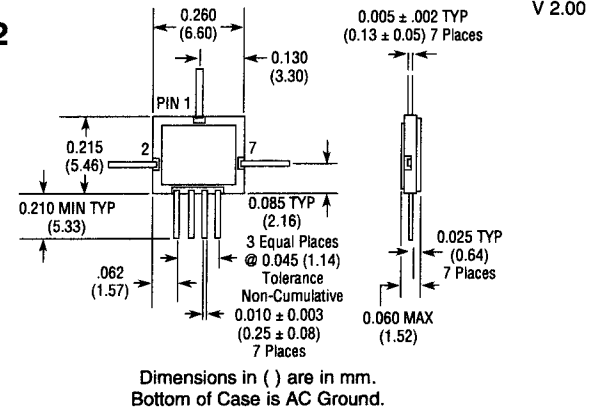
† Faster switching speed can be achieved with enhanced driver waveform.

** 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.

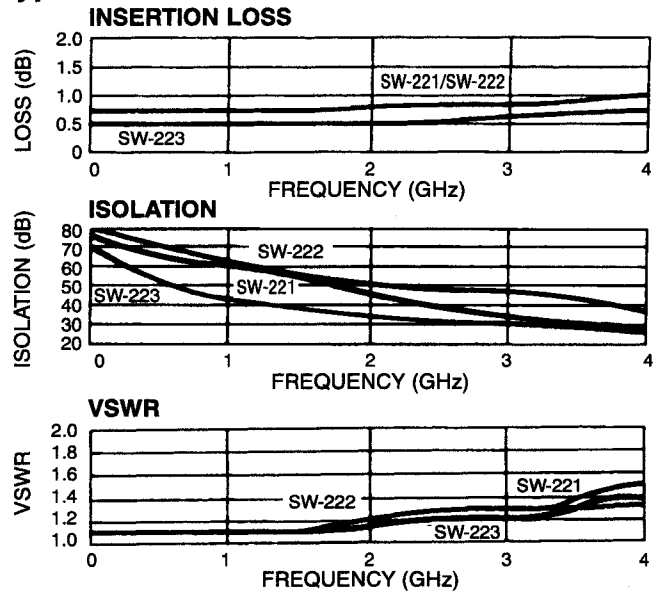
Ordering Information

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

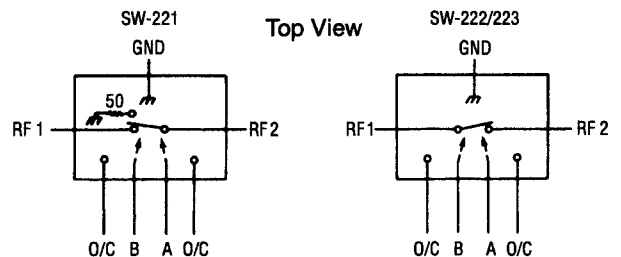
CR-2



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.