

GaAs DPDT Switch

DC-4 GHz

SW-281

V 2.00

Features

- Low Insertion Loss, 0.5 dB Typical
- Miniature Relay Replacement, 0.250" Sq. Pkg.
- Fast Switching Speed, 4 ns Typical
- Ultra Low DC Power Consumption

Guaranteed Specifications *

(From -55°C to +85°C)

Frequency Range		DC - 4 GHz
Insertion Loss	DC-4 GHz	1.2 dB Max
	DC-2 GHz	0.8 dB Max
	DC-1 GHz	0.7 dB Max
	DC-0.5 GHz	0.6 dB Max
VSWR	DC-4 GHz	1.8:1 Max
	DC-2 GHz	1.5:1 Max
	DC-1 GHz	1.2:1 Max
	DC-0.5 GHz	1.2:1 Max
Isolation	DC-4 GHz	20 dB Min
	DC-2 GHz	30 dB Min
	DC-1 GHz	40 dB Min
	DC-0.5 GHz	50 dB Min

Operating Characteristics

Impedance	50 Ohms Nominal
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Switching Characteristics†

Trise, Tfall (10/90% or 90/10% RF)	2 ns Typ
Ton, Toff (50% Control to 90/10% RF)	4 ns Typ
Transients (In-Band)	15 mV Typ

Input Power for 1 dB Compression

Control Voltages (Vdc)	0/-5	0/-8	
0.5 to 4 GHz	+27	+33	dBm Typ
0.05 GHz	+21	+26	dBm Typ

Intermodulation Intercept Point

(for two-tone input power up to +5 dBm)

Intercept Points	IP ₂	IP ₃	
0.5 to 4 GHz	+68	+48	dBm Typ
0.05 GHz	+62	+45	dBm Typ

Control Voltages (Complementary Logic)

V _{IN} Low	0 to -0.2 V @ 5 µA Max
V _{IN} Hi	-5V @ 10 µA Typ to -8V @ 100 µA Max

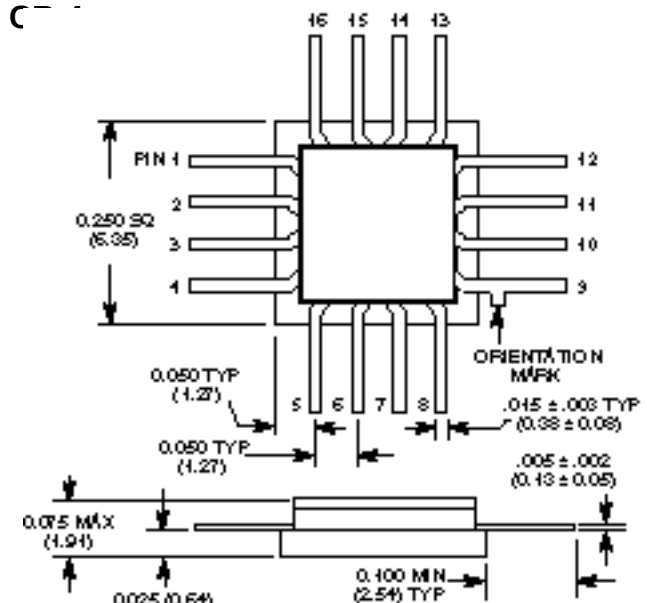
Environmental

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.

** When an RF output is 'off' it is shorted to ground through an 'on' shunt MESFET.



Bottom of Case is AC Ground.

Dimensions in () are in mm.

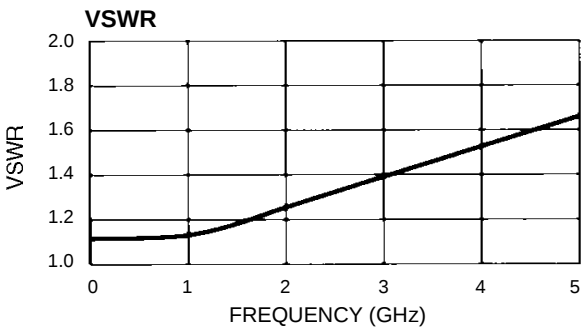
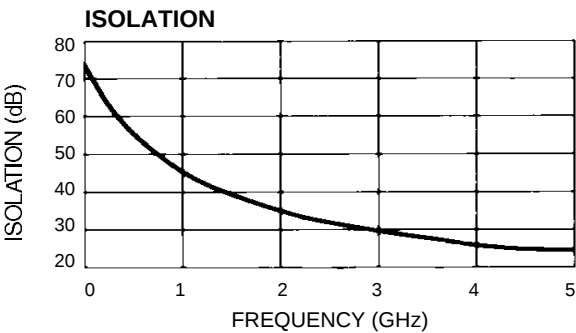
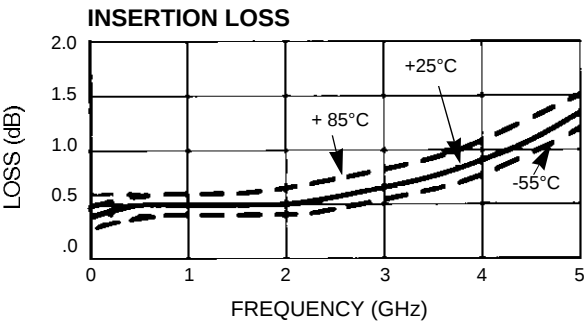
Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)

.xx = ±0.02 (.x = ±0.5)

Ordering Information

Model No.	Package
SW-281 PIN	Ceramic

Typical Performance



Truth Table**

Control Input		Condition of Switch			
A	B	RF1 to RF2	RF3	RF6 to RF4	RF5
Hi	Low	ON	OFF	ON	OFF
Low	Hi	OFF	ON	OFF	ON

Schematic

