

GaAs SP4T Reflective Switch

0.1 - 2 GHz

SW-128

V2.00

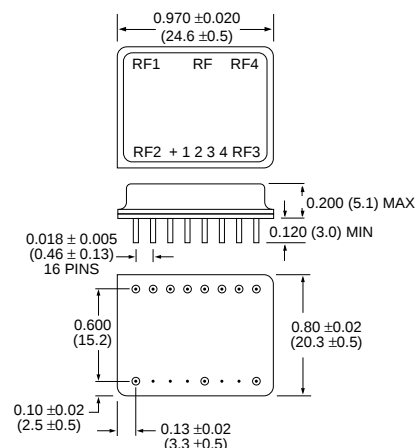
Features

- High Isolation: 65 dB Typ. at 1 GHz
- VSWR: 1.2:1 Typ.
- Trise, 5 nS Typ.
- DIP Package
- Integral TTL Driver
- 50 Ohm Nominal Impedance

Description

M/A-COM's SW-128 is a GaAs MMIC SP4T reflective switch with an integral silicon TTL driver. This device is in a 16-lead DIP package. This switch offers high isolation over a wide bandwidth of operation, while maintaining low DC power dissipation. These switches exhibit excellent performance and repeatability from 0.01 GHz to 2.0 GHz. The SW-128 is ideally suited for RF/IF communications applications. Contact the factory for information about environmental screening.

DI-5



Dimensions in () are in mm.
WEIGHT (APPROX.): 0.26 OUNCES 73 GRAMS

Part Number	Package
SW-128 PIN	Dual Inline

Electrical Specifications¹, T_A = +25°C

Parameter	Test Conditions	Unit	Min.	Typ.	Max
Insertion Loss	0.01 - 0.5 GHz	dB			1.3
	0.01 - 1.0 GHz	dB			1.7
	0.01 - 2.0 GHz	dB			2.2
Isolation	0.01 - 0.5 GHz	dB	65		
	0.01 - 1.0 GHz	dB	60		
	0.01 - 2.0 GHz	dB	52		
VSWR	0.01 - 0.5 GHz				1.3:1
	0.01 - 1.0 GHz				1:4:1
	0.01 - 2.0 GHz				1:6:1
Trise, Tfall Ton, Toff Transients	10% to 90% RF, 90% to 10% RF	nS	5, 20		
	50% Control to 90% RF, 50% Control to 10% RF	nS		18, 28	
	In Band	mV	60		
1 dB Compression	0.05 GHz	dBm		+18	
	0.5 - 2.0 GHz	dBm		+25	
IP ₃	For two-tone input power up to +5 dBm	dBm		+35	
	0.05 GHz	dBm		+44	
IP ₂	For two-tone input power up to +5 dBm	dBm		+62	
	0.05 GHz	dBm		+75	
V _{CC}		V	4.5	+5.0	+5.5
I _{CC}	V _{CC} = +5 V	mA			1
V _{ctl}	Low	V	0.0		0.8
	High	V	2.0		5.0
Input Leakage Current	Low	0 to 0.8 V	μA	1.0	
	High	2.0 to 5.0 V	μA	1.0	

1. All specifications apply when operated with bias voltages of +5 V for V_{CC} and 50-ohm impedance at all RF ports unless otherwise specified.

Specifications Subject to Change Without Notice.

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Absolute Maximum Ratings¹

Parameter	Absolute Maximum
Max. Input Power	
0.05 GHz	+27 dBm
0.5 – 2.0 GHz	+34 dBm
Supply Voltages	
V _{CC}	-0.5 V to +7.0 V
Control Voltage	-0.5 V to V _{CC} +0.5 V
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C

1. Operation of this device above any one of these parameters may cause permanent damage.

Truth Table

Control Inputs				Condition of Switch			
				RF Common to Each RF Port			
CTL1	CTL2	CTL3	CTL4	RF1	RF2	RF3	RF4
High	Low	Low	Low	On	Off	Off	Off
Low	High	Low	Low	Off	On	Off	Off
Low	Low	High	Low	Off	Off	On	Off
Low	Low	Low	High	Off	Off	Off	On

Typical Performance

