

Switches

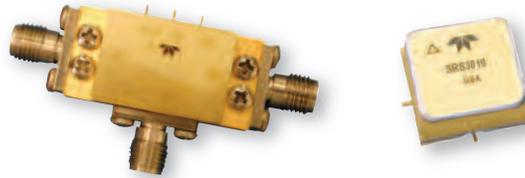
Catalog Products (EAR99/Non-ITAR)



TELEDYNE MICROWAVE SOLUTIONS
Everywhereyoulook™

High Performance Switches

Typical and Guaranteed Specifications—50 Ω System



Model	Frequency Range MHz	Insertion Loss dB			Isolation dB		SWR Input/Output dB			Power Output At 1dB Compression Min. dBm			Intercept Point dBm	Switching Time (Rise/Fall) (nsec)		D.C.	
		Typ.	Max. 0/50C	Max. -55/85C	Min. 0/50C	Min. -55/85C	Typ.	Max. 0/50C	Max. -55/85C	Typ.	Min. 0/50C	Min. -55/85C	3rd/2nd Typ.	Max. 0/50C	Max. -55/85C	Volts	mA Typ.
Available in TO-8B, SMT0-8B SMA or 10-pin Gullwing Packages																	
SJ1010	5-100	<0.7	1.0	1.2	45.0	43.0	<1.1	1.3	1.4	—	—	—	38/56	—	—	5	5
	100-500	<1.0	1.3	1.5	35.0	34.0	<1.1	1.3	1.4	>19.0	18.0	17.0	49/60	30	50		
	500-1000	<1.5	1.8	2.0	28.0	27.0	<1.3	1.5	1.6	>24.0	24.0	23.0	49/65	30	50		
SRS3019	5-500	<1.0	1.3	1.5	38.0	36.0	<1.15	1.3	1.4	28.0	25.0	24.0	42/66	1000	1200	±15	22
	500-2000	<1.2	1.5	1.6	30.0	28.0	<1.3	1.5	1.6	28.0	25.0	24.0	41/62	1000	1200		
	2000-3000	<1.5	1.9	2.1	28.0	26.0	<1.7	1.9	2.0	28.0	25.0	24.0	40/65	1000	1200		
S2CP20101 Non-Reflective	D.C.-500	0.9	1.5	1.8	65	62	1.3	1.4	1.5	22	—	—	—	1250/50	1300/60	-5.0	5
	500-18000	1.8	3.0	3.2	70	68	1.3	1.8	2.0	24	—	—	—				
	18000-21000	2.6	3.3	3.5	70	68	1.4	1.7	2.0	22	—	—	—				
S2CP20201 Non-Reflective	D.C.-500	1.5	1.8	2.0	63	60	1.3	1.5	1.7	22	—	—	—	1250/50	1300/60	-5.0	5
	500-18000	2.2	3.5	3.7	45	42	1.3	1.8	2.0	24	—	—	—				
	18000-21000	3.0	3.8	4.0	45	42	1.4	1.8	2.0	22	—	—	—				

Current data sheets available on website.

SJ1010

5 TO 1000 MHz 10-PIN GULLWING SPDT SWITCH

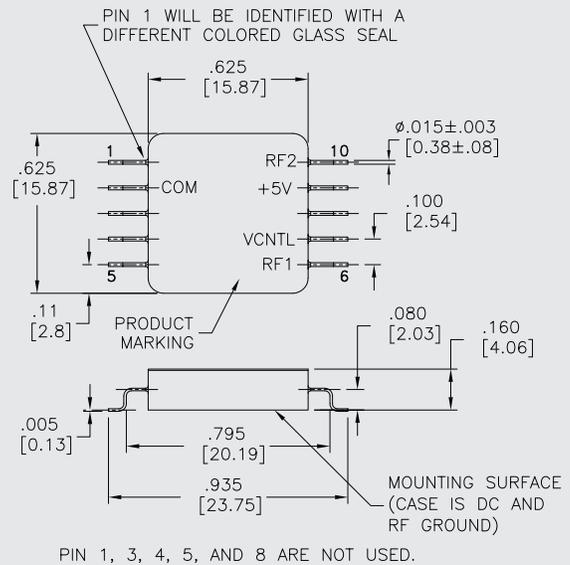
Typical Values

Low Insertion Loss	<1.5 dB
High Isolation	>30 dB
High Output Power	+24.0 dBm
High Third Order I.P.	+49 dBm
Low Voltage	+5 Vdc
TTL Compatible	
10-pin Gullwing Package	

SJ1010

SJ1010

10-pin Gullwing SPDT Switch Package



PIN 1, 3, 4, 5, AND 8 ARE NOT USED.

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-1100 MHz	5-1000 MHz	5-1000 MHz
Insertion Loss (Max.)			
5-100 MHz	<0.7 dB	1.0 dB	1.2 dB
100-500 MHz	<1.0 dB	1.3 dB	1.5 dB
500-1000 MHz	<1.5 dB	1.8 dB	2.0 dB
Isolation (Min.)			
5-100 MHz	47 dB	45.0 dB	43.0 dB
100-500 MHz	37 dB	35.0 dB	34.0 dB
500-1000 MHz	30 dB	28.0 dB	27.0 dB
SWR (Max.)			
Input/Output			
5-100 MHz	1.1:1 [^]	1.3:1	1.4:1
100-500 MHz	1.1:1 [^]	1.3:1	1.4:1
500-1000 MHz	1.3:1 [^]	1.5:1	1.6:1
Power Output (Min.)			
@ 1dB comp.			
100-500 MHz	>+19.0 dBm	+18.0 dBm	+17.0 dBm
500-1000 MHz	>+24.0 dBm	+24.0 dBm	+23.0 dBm
Switching Time†			
100-1000 MHz	20† ηsec	30 ηsec	50 ηsec
DC Current (Max.)	5 mA	8 mA	10 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.
[^] Insertion loss state. † 50% TTL control to 10% or 90% RF.

INTERMODULATION PERFORMANCE

Typical @ 25 °C, +5 Volts, and 400 MHz

Second Order Two Tone Intercept Point	+65 dBm
Third Order Two Tone Intercept Point	+49 dBm

SJ1010

LOGIC TABLE

TTL CONTROL	COM-RF1	COM-RF2
LOW	ISOLATION	INSERTION LOSS
HI	INSERTION LOSS	ISOLATION

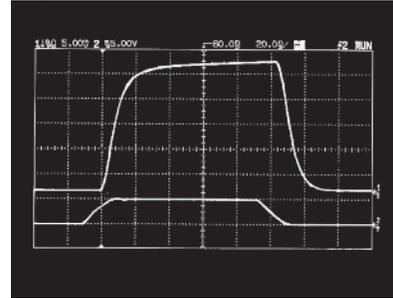
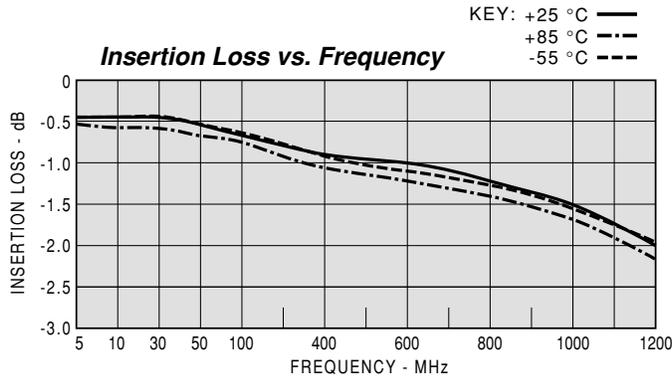
LOW is defined as 0 to +0.8V @ 20 μA MAX
 HI is defined as +2.0 V @ 50 μA typical to +5.5 V @ 300 μA MAX

ABSOLUTE MAXIMUM RATINGS

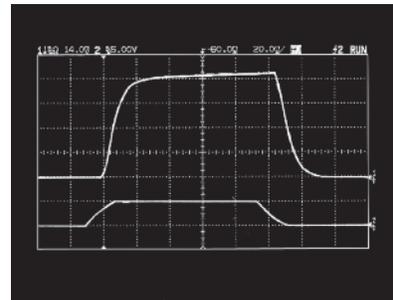
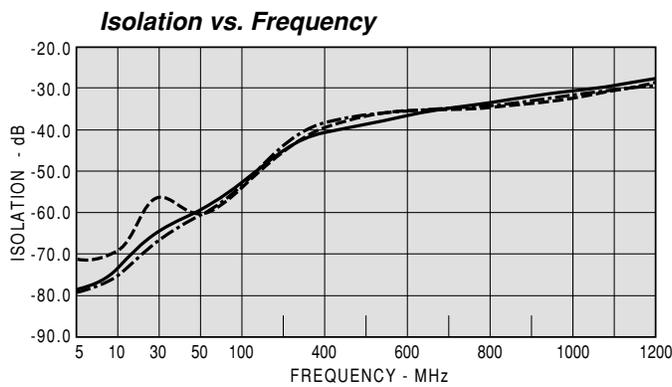
Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+150 °C
Maximum DC Voltage	+5 Volts
Maximum Continuous RF Input Power	+35 dBm
Maximum Short Term Input Power (1 Minute Max.)	+35 dBm
Maximum Peak Power (3 μsec Max.)	+37 dBm
Burn-in Temperature	+125°C

DIMENSIONS ARE IN INCHES [MILLIMETERS]

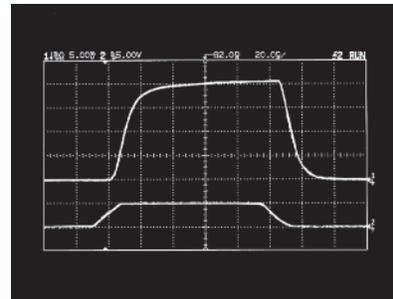
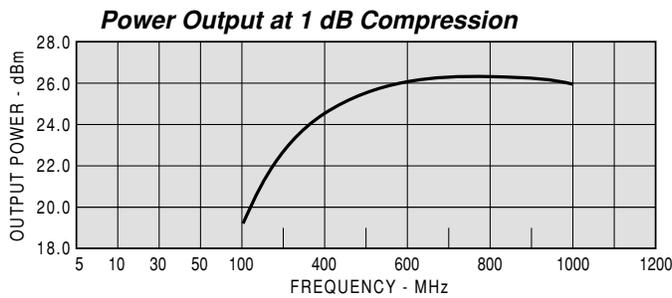
TYPICAL PERFORMANCE



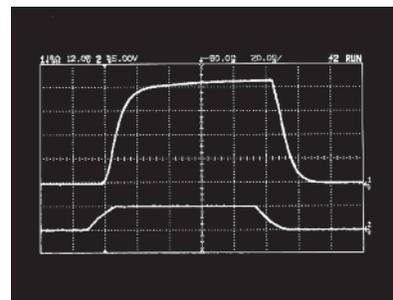
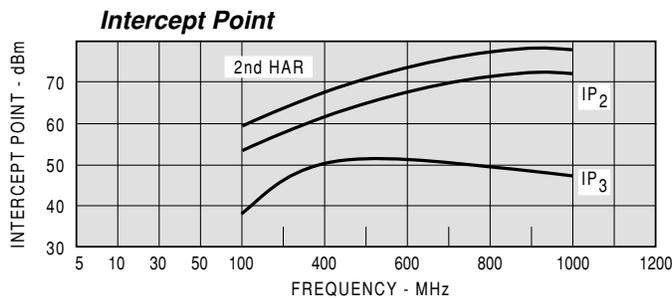
Switching speed @ 0.2 GHz, +6 dBm



Switching speed @ 0.2 GHz, +12 dBm



Switching speed @ 1 GHz, +6 dBm



Switching speed @ 1 GHz, +12 dBm

Top Trace: Switch Response
 Bottom Trace: TTL Control
 Time Base: 20 ns/div



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