SPDT PIN Diode Switch Operating
From 1 GHz to 18 GHz
With Low Insertion Loss And High speed switching time

ADSW2T 01/18-R-FS

Features

Frequency range : 1 to 18GHz
Low VSWR and Insertion loss
High Isolation
Low DC power consumption
Positive voltage control

Typical Applications

- Military
- TDD

General Description

The ADSWSSNO2 is PIN Diode SPDT RF switch designed for wire or wireless applications, covering a broad frequency range from 1 to 18 GHz with low insertion loss. Operating -12V and +5V power supplies, this switch provide high performance characteristics at relatively high speeds over multi-octave frequency ranges. The design is based on an integrated circuit assembly of PIN diodes mounted in a microstrip transmission line. The currents required to switch the ports ON or OFF are provided by the integrated driver, which is controlled by external TTL logic signals

ADSW2T 01/18-R-FS

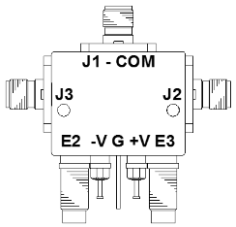
RF Electrical Specifications

Parameter	Specifications		Remarks
Frequency Range	1 ~ 18 GHz		
Max. Insertion Loss	1 - 4 GHz	1.3 dB	
	4 - 8 GHz	1.7 dB	
	8 - 12.4 GHz	2.2 dB	
	12.4 - 18 GHz	2.8 dB	
Max. VSWR	1 GHz - 12.4 GHz : 1.75 12.4 GHz - 18 GHz : 2.0		
Min. Isolation	1 GHz - 12.4 GHz : 55 dB 12.4 GHz - 18 GHz : 45 dB		
Switching Time	Rise/Fall Time : 10 nS Max.		
	ON/OFF Time : 25 nS Max.		
	Repetition Rate : 20 MHz Max.		
Control Logic	Logic “0” (-0.3 to +0.8 V) for Port ON		
	Logic “1” (+2.0 to +5.0 V) for Port OFF		
DC Bias Voltage	+5 V±5%(60mA)		
	-12 to -15 V(50mA)		
In/ Out Impedance	50 Ω		
Handling Power (Max.)	1W (CW)		
Operating Temperature	-55 ~ +115 ℃		
Dimensions	21.6 * 27.9 * 9.7 mm		Excluding Connectors

Truth Table

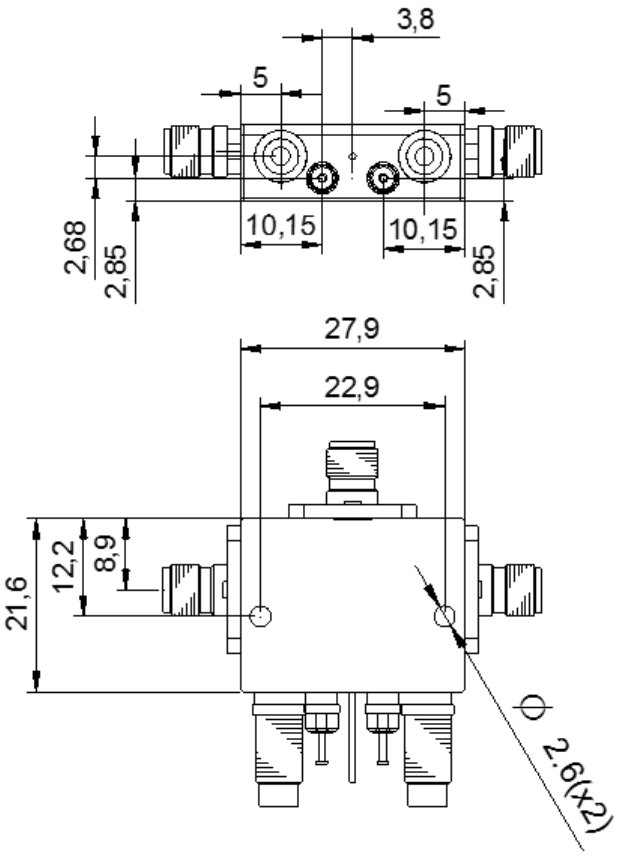
E2	E3	J1-COM - J2	J1-COM - J3
0	V_{HIGH}	Insertion loss	Isolation
V_{HIGH}	0	Isolation	Insertion loss

V_{HIGH} = 2 V to 5 V.



ADSW2T 01/18-R-FS

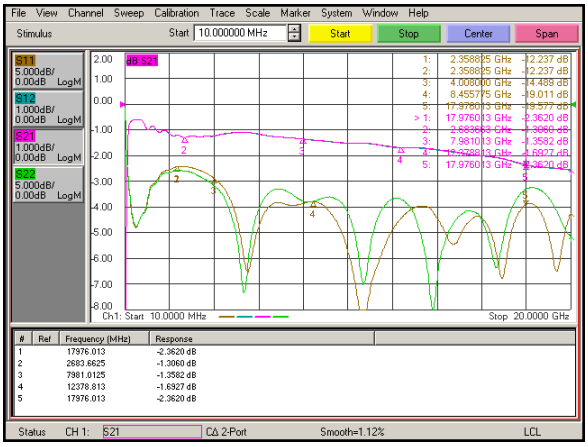
Outline Dimensions



Unit : mm

ADSW2T 01/18-R-FS

Typical Performance Characteristics



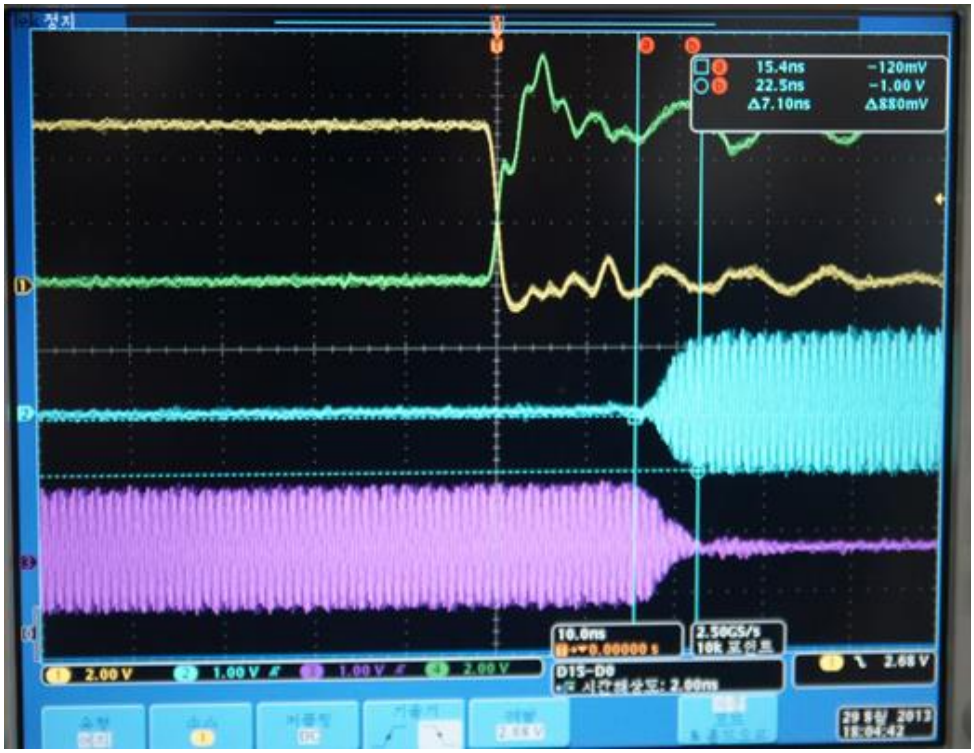
J2 path Insertion Loss vs. Frequency

J2 path Isolation vs. Frequency

J3 path Insertion Loss vs. Frequency

J3 path Isolation vs. Frequency

ADSW2T 01/18-R-FS

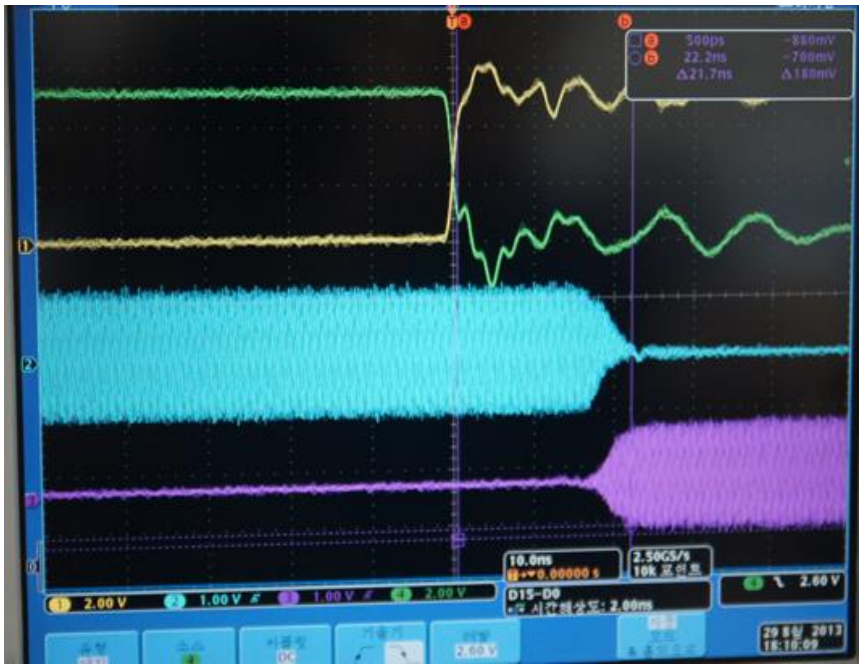


J1-J2 path Rising Time(measured = 7.1 nS)

J1-J2 path Falling Time(measured = 6.1 nS)

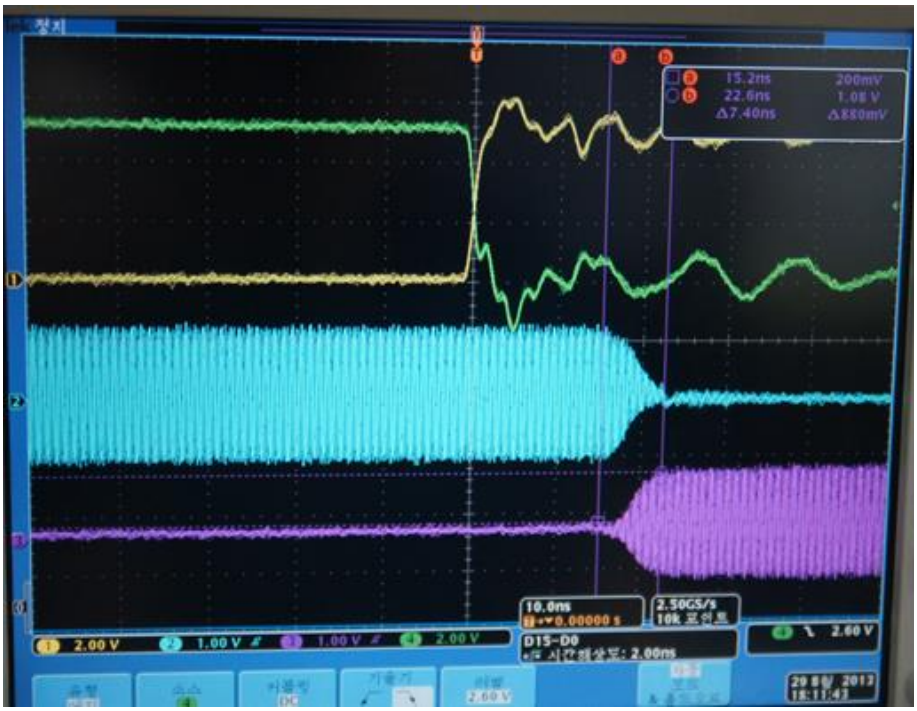
ADSW2T 01/18-R-FS

J1-J2 path ON Time(measured = 20.7 nS)



J1-J2 path OFF Time(measured = 21.7 nS)

ADSW2T 01/18-R-FS

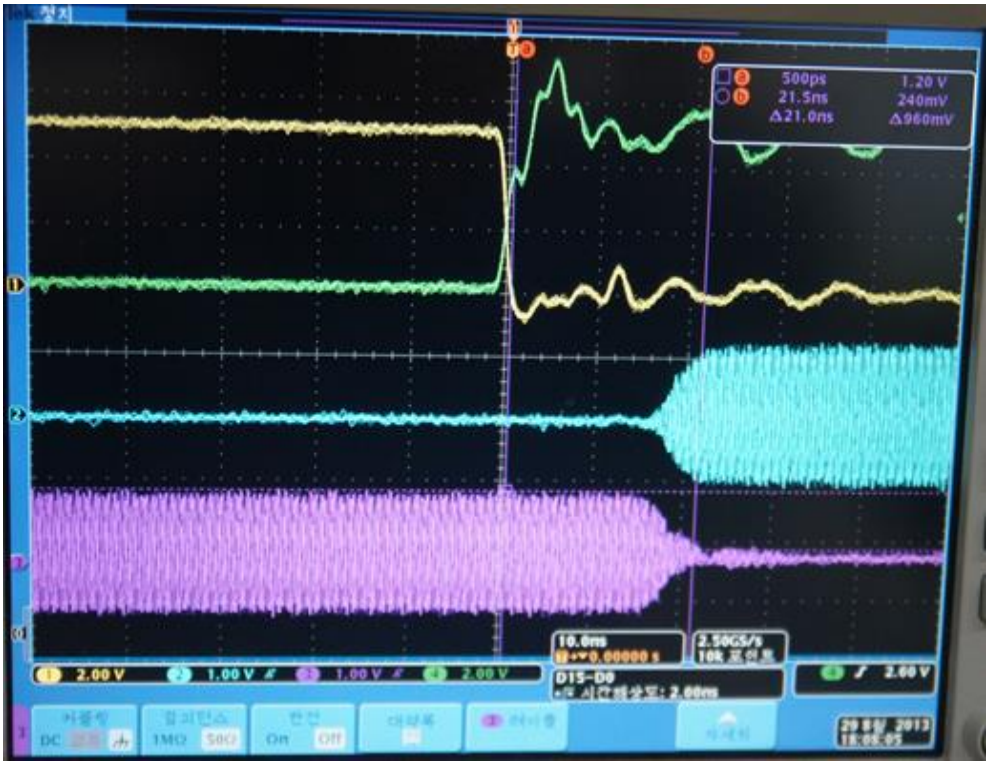


J1-J3 path Rising Time(measured = 7.4 nS)

J1-J3 path Falling Time(measured = 7.6 nS)

ADSW2T 01/18-R-FS

J1-J3 path ON Time(measured = 20.3 nS)



J1-J3 path OFF Time(measured = 21.0 nS)

ADSW2T 01/18-R-FS

J1-J3 path Repetition Rate(measured @20MHz)