Coaxial

High Isolation Switch

50Ω SPST, Absorptive DC to 2000 MHz

ZFSWHA-1-20+
ZFSWHA-1-20

CASE STYLE: J17

Connectors	Model	Price	Qty.
SMA	ZFSWHA-1-20(+)	$74.95	(1-9)
BRACKET (OPTION "B")		$2.50	(1+)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 150°C
Input Power	see Table & Note 1
Control Current	see Table

Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

RF IN	2
RF OUT	3
CONTROL 1	1
CONTROL 2	S

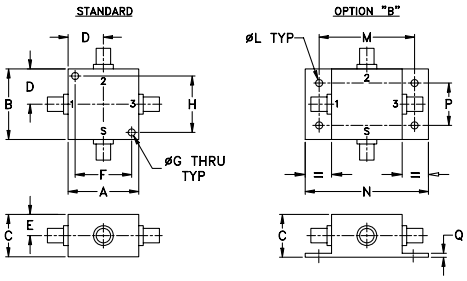
Features

- wideband, DC to 2000 MHz
- low insertion loss, 1.3 dB typ.
- low video leakage 30 mVp-p typ.
- very fast switching

Applications

- PCN
- cellular
- antenna switching

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.000	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40

J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.75	.07	grams
--	--	3.18	42.88	55.37	19.05	1.78	75.0

High Isolation Switch Electrical Specifications

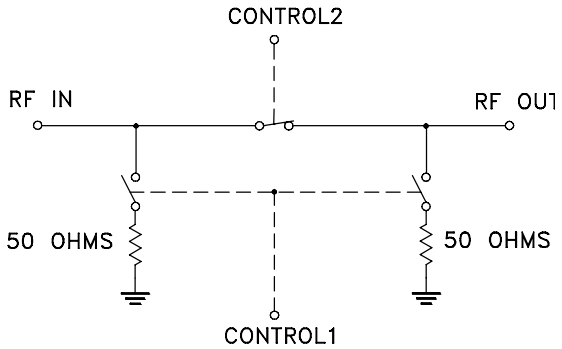
FREQ. (MHz)		INSERTION LOSS (dB)						1dB COMPR. (dBm)			IN-OUT ISOLATION (dB)					
		DC-100 MHz		100-1000 MHz		1000-2000 MHz		DC-100 MHz	100-1000 MHz	1000-2000 MHz	DC-100 MHz		100-1000 MHz		1000-2000 MHz	
f_L	f_U	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.
DC	2000	0.8	1.2	1.3	1.7	1.3	1.7	19	19	26	75	60	65	58	65	58

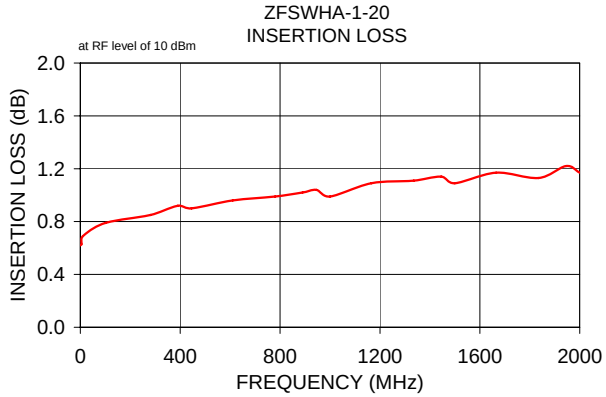
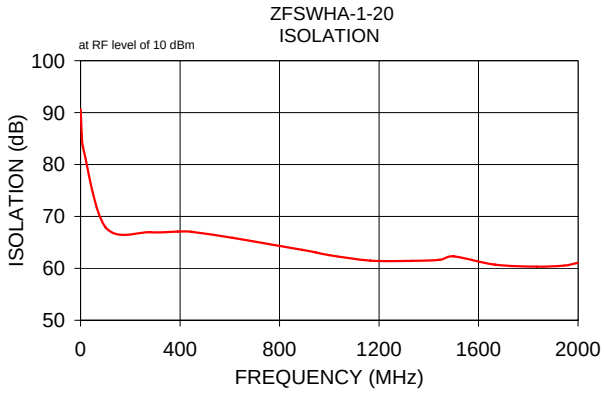
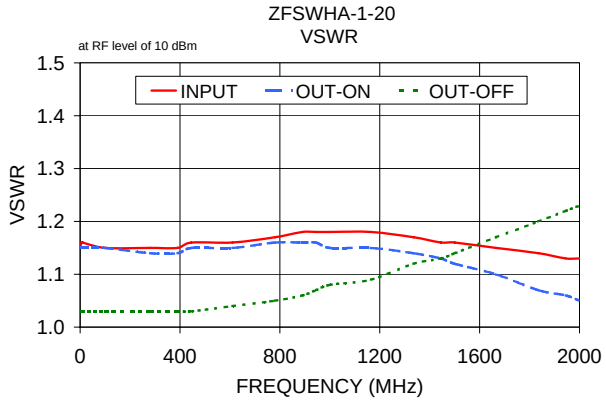
Additional Specifications			
Control Voltage, volts Low State High State(negative) for compression specs for other specs	-0.2 to 0 -8 -5 to -8		
Control Current, mA	0.2 Max. to -8V 0.5 Max. at -9V to -12V Typ.		
RF Power Input Max.[1] Steady State 0/-8V As Modulator[2]	DC-.02 +23 +14.5	.02-5 +30 +20	.5-2 +33 +27
Video Leakage[3], mVp-pmVp-p	30 Typ., 50 Max.		
VSWR (:1) ON, all ports OFF, Input OFF, Output	DC-0.2 GHz 1.25 Max. 1.25 Max. 1.4 Max.	0.2-2 GHz 1.5 Max. 1.5 Max. 1.5 Max.	
Rise/Fall Time (10%-90%), ns Switching Time, 50% of control to 90% RF (Turn-on), ns 10% RF (Turn-off), ns	3 Typ., 5 Max. 7 Typ., 10 Max. 3 Typ., 10 Max.		

1. Above 20° C derate power linearly to zero at 150°C
2. In modulator service, unrestricted switching is permitted with RF applied.
3. Video leakage or break through is defined as leakage of switching signal to RF output ports.
4. All RF connections must be DC blocked or held at 0V DC.

CONTROL LOGIC		
Control Ports		RF outputs
1	2	
-V	0	On
0	-V	Off

Electrical Schematic



Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) (ctrl1 @ -8V, ctrl 2 @ 0V) IN-OUT		OFF ISOLATION (dB) (ctrl 1 @ 0V, ctrl 2 @ -8V) IN-OUT		VSWR IN	VSWR OUT	
	$\overline{x}$	σ	$\overline{x}$	σ	$\overline{x}$	ON $\overline{x}$	OFF $\overline{x}$
0.30	0.62	0.01	90.61	3.68	1.15	1.15	1.03
5.30	0.63	0.01	85.48	6.29	1.16	1.15	1.03
10.30	0.69	0.01	83.23	4.25	1.16	1.15	1.03
100.29	0.79	0.01	67.92	1.22	1.15	1.15	1.03
280.26	0.85	0.01	66.96	1.83	1.15	1.14	1.03
390.24	0.92	0.00	67.09	1.35	1.15	1.14	1.03
445.23	0.90	0.01	67.05	1.41	1.16	1.15	1.03
610.21	0.96	0.01	65.89	1.85	1.16	1.15	1.04
780.18	0.99	0.01	64.48	1.97	1.17	1.16	1.05
890.17	1.02	0.01	63.58	2.32	1.18	1.16	1.06
945.16	1.04	0.01	63.07	2.05	1.18	1.16	1.07
1000.15	0.99	0.00	62.55	1.47	1.18	1.15	1.08
1165.13	1.09	0.02	61.49	2.35	1.18	1.15	1.09
1335.10	1.11	0.02	61.45	1.70	1.17	1.14	1.12
1445.08	1.14	0.02	61.66	1.64	1.16	1.13	1.13
1500.08	1.09	0.02	62.32	2.10	1.16	1.12	1.14
1665.05	1.17	0.01	60.72	1.78	1.15	1.10	1.17
1835.03	1.13	0.01	60.34	0.70	1.14	1.07	1.20
1945.01	1.22	0.03	60.54	1.60	1.13	1.06	1.22
2000.00	1.17	0.01	61.08	1.47	1.13	1.05	1.23