

High Isolation Switches GAA's

Coaxial

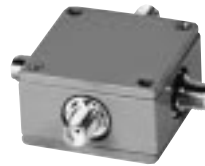
SPST/SPDT With/ Without TTL Drivers DC to 5 GHz



*KSWHA



RSW



ZFSWHA



ZASW

MODEL NO.	FREQ. GHz $f_l - f_u$	SPST	SPDT	TTL DRIVER	ABSORPTIVE	REFLECTIVE	INSERTION LOSS (dB)										1 dB COMPR. (dBm)				IN-OUT ISOLATION (dB)										CASE STYLE	CONNECTION	PRICE \$ Qty. (1-9)
							frequency band										frequency band				frequency band												
							A		B		C		D		E		A	B	C	D	A	B	C	D	E								
							Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.			
◆ KSWHA-1-20*	DC-2.0	●		●			0.8	1.2	1.3	1.7	1.3	1.7	—	—	—	—	19	19	26	—	75	60	65	58	65	58	—	—	—	—	XX112	ek	34.95
▲ ZFSWHA-1-20	DC-2.0	●		●			0.8	1.2	1.3	1.7	1.3	1.7	—	—	—	—	19	19	26	—	75	60	65	58	65	58	—	—	—	—	J17	em	74.95
◆ RSW-2-25P	DC-2.5	●		●			0.5	0.9	0.7	1.1	1.0	1.5	1.2	1.8	—	—	26 [†]	27	29	28	75	55	49	44	48	43	42	30	—	—	CL620	ke	3.95***
ZASW-2-50DR	DC-5	●	●	●			1.3	2.0	1.7	2.5	1.8	3.0	—	—	3.0	4.5	17	20	20	19	100	80	90	75	82	65	—	—	68	46	CY353	lw	89.95
ZASWA-2-50DR	DC-5	●	●	●			1.3	2.0	1.7	2.5	1.8	3.0	—	—	3.0	4.5	17	20	20	19	100	80	90	75	82	65	—	—	68	46	CY353	lw	89.95
A=D to 100 MHz B=100 to 1000 MHz C=1000 to 2000 MHz D=2000 to 2500MHz E= 2000 to 5000MHz																																	

A=DC to 100 MHz B=100 to 1000 MHz C=1000 to 2000 MHz D=2000 to 2500MHz E= 2000 to 5000MHz

additional specifications, all models

Model Series	KSWHA	ZFSWHA	RSW	ZASW, ZASWA	M3SW, M3SWA	SWM, SWMA
Control Voltage, V Low Threshold, V High Threshold, V	-8/0 for compression -8 to -5/0 other specs		0±0.2 (Vs-0.2) min., 7 max. ^(f)	0 min., 0.8 max. 2 min., 5 max.		
Control Current, mA	0.2 max. to -8V 0.5 max. at -9V to -12V typ.		165 µA typ.	High V, 5 max. Low V, 0.2 max.		
Positive Supply V. (Vs, for RSW)	n/a		5 to 7 ^(f)	+5±0.5/-0.1	5±0.2 ^(e)	5±0.2 ^(c)
Negative Supply V.	n/a		n/a	-5-0.5/+0.1	-5±0.2	-5±0.2
Positive Supply Current, mA	n/a		50-100 µA typ.	22 typ., 60 max.	5 typ., 9 max.	5 typ., 9 max.
Negative Supply Current, mA	n/a		n/a	22 typ., 60 max.	5 typ., 9 max.	5 typ., 9 max.
VSWR:(1) ON, all ports OFF, Input OFF, Output	DC-0.2GHz 1.25 max 1.25 max. 1.4 max.	0.2-2GHz 1.5 max 1.5 max. 1.5 max.	1.3 typ. 1.7 max. —	1.3 typ. 1.3 typ. 3.3 typ.	1.1 typ. to 2 GHz ^(d) 1.25 typ. to 4.5 GHz	1.15 typ. to 2 GHz ^(d) 1.3 typ. to 4.5 GHz
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.		10 typ. 20 typ. 20 typ.	5 typ., 15 max. 10 typ., 20 max. 10 typ., 20 max.	5 typ., 10 max. 10 typ., 15 max. 10 typ., 15 max.	5 typ., 15 max. 10 typ., 20 max. 10 typ., 20 max.
Video Leakage ^(c) , mVp-p	30 typ., 50 max.		50 typ.	140 typ.	30 typ.	30 typ.
Operating Temperature, °C Storage Temperature, °C	-55 to 100 -55 to 150		-40 to 85 -65 to 150	-20 to 85 -55 to 150	-40 to 85 -55 to 100	-40 to 85 -55 to 100
^(a) RF Power Input Max.	Steady state DC:02 .02-5 .5-2 GHz 0/-8V control, +23 +30 +33 dBm As modulator ^(b) +14.5 +20 +27 dBm		1W (>500 MHz)	250 mW		

^(a) Above 20°C derate power linearly to zero at 150°C.

^(b) In modulator service, unrestricted switching is permitted with RF applied.

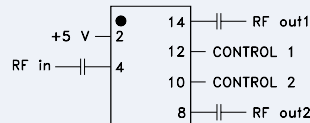
^(c) Video leakage or break through is defined as leakage of TTL switching signal to RF output ports.

^(d) For all states of absorptive switch, and for reflective switch in "ON" condition; for reflective switch "OFF" port, 5:1 VSWR typ.

^(e) Absolute max. supply voltage ±6V DC

^(f) Absolute max: Vs +8V DC, control voltage -0.2V & +8V DC.
Performance specified at Vs= 5V.

RSW-2-25P connection schematic showing external dc blocking capacitors

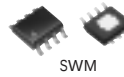


NOTE: impedance of the capacitor should be less than 5 ohms over the operating frequency range.

Surface Mount

SPDT With TTL Drivers DC to 4.5 GHz

NEW!



all specifications at 25°C

MODEL NO.	FREQ. (GHz) f _L - f _U	TTL DRIVER ABSORPTIVE REFLECTIVE	INSERTION LOSS (dB)								1 dB COMPRESSION (dBm)				IN-OUT ISOLATION (dB)								CASE STYLE	CONNECTION	PRICE \$ Qty. (10-49)				
			frequency band								frequency band				frequency band														
			A		B		C		D		A††		B		C		D		A		B					C		D	
			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.				Typ.	Min.	Typ.	Min.
◆ M3SW-2-50DR	DC-4.5	●	●	0.6	1.0	0.7	1.2	0.9	1.4	1.5	1.9	20	25	25	20	85	75	60	53	50	44	35	30	DL805	nr	4.95			
◆ M3SWA-2-50DR	DC-4.5	●	●	0.6	1.0	0.7	1.2	0.9	1.4	1.4	2.0	20	25	25	20	80	65	65	53	57	50	36	30	DL805	nr	4.95			
◆ SWM-2-50DR	DC-4.5	●	●	0.6	0.9	0.7	1.2	0.9	1.4	1.6	1.9	20	25	25	24	75	65	55	45	45	37	35	27	XX746	nr	5.30			
◆ SWMA-2-50DR	DC-4.5	●	●	0.6	0.9	0.7	1.1	0.9	1.4	1.4	1.9	20	25	25	24.7	80	65	65	55	55	45	38	27	XX746	nr	5.30			

A=DC to 100 MHz B=100 to 1000 MHz C=1000 to 2000 MHz D=2000 to 4500MHz

see suggested PCB layout (PL-120) for M3SW models
(PL-122) for SWM models

features

- high isolation, up to 100 dB typ. (ZASW)
- low insertion loss
- integral TTL driver, most models
- miniature surface mount case styles

applications

- transfer/receiver isolation
- automated switching networks

NOTES:

- ◆ Aqueous washable.
- * KSWHA model hermetically sealed.
- † Below 50 MHz, 1 dB compression gradually decreases to 6 dBm at 1 MHz
- †† Drops to 17 dBm at 10 MHz
- *** Prices for quantities 10-49
- ▲ Available with SMA connectors
- Non-hermetic
- A. Environmental specifications and re-flow soldering information available in General Information Section.
- B. Connector types and case mounted options, case finishes are given in section 0, see "Case styles & outline drawings".
- C. Prices and Specifications subject to change without notice.
- 1. For reflective M3SW & SWM models, OFF state of RF output is low impedance.
- 2. 100-ohm series resistor is recommended at each control input of non-connectorized switches, to protect against possible voltage spikes from the source.

control logic, all models

Model Series	Control Ports		RF-In to	
	1	2	RF-OUT1	RF-OUT2
KSWHA	0	-v	Off	—
ZFSWHA	-v	0	On	—
RSW	Low	High	On	Off
	High	Low	Off	On
ZASW/ ZASWA	TTL High		Off	On
M3SW/M3SWA	Low		On	Off
SWM/SWMA				

pin and coaxial connections

see case style outline drawings for pin locations

PORT	ek	em	ke	lw	nr
RF IN	1	1	4	1	6
RF OUT 1	5	2	14	3	1
RF OUT 2	—	—	8	6	4
TTL IN	—	—	—	4	2
+5V	—	—	2	2	5
-5V	—	—	—	5	7
CONTROL 1	2	4	12	—	—
CONTROL 2	3	3	10	—	—
GND EXT.	4,6,7,8	—	1,3,5,6 7,9,11,13	—	8 paddle
TTL GND	—	—	—	—	3
DEMO BOARD	TB-206	—	TB-23	—	TB-159 (M3SW/A) TB-161 (SWM/A)



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