Surface Mount

Switch

KSWA-2-46+

50Ω SPDT, Absorptive DC[4] to 4.6 GHz



Generic photo used for illustration purposes only

CASE STYLE: XX112

+RoHS Compliant

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

Maximum Ratings

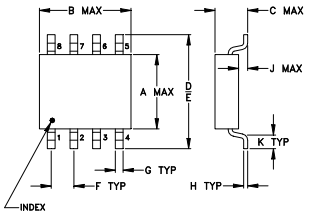
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 150°C
Input Power	see Note 1
Control V	see Note 2

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

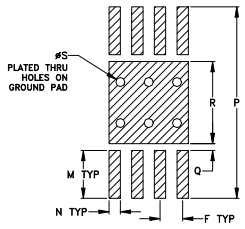
Pin Connections

RF IN	2
RF OUT 1	5
RF OUT 2	8
CONTROL 1	3
CONTROL 2	1
GROUND	4,6,7

Outline Drawing



PCB Land Pattern



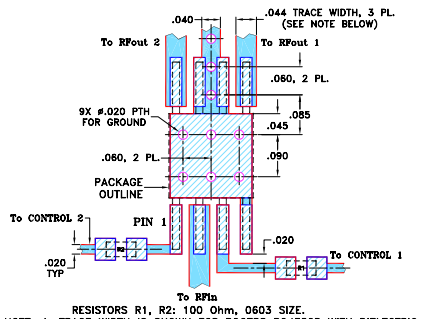
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
.180	.180	.070	.400	.350	.050	.015	.005
4.57	4.57	1.78	10.16	8.89	1.27	0.38	0.13

J	K	M	N	P	Q	R	S	wt.
.005	.070	.105	.025	.420	.015	.180	.020	grams
0.13	1.78	2.67	0.64	10.67	0.38	4.57	0.51	0.15

Demo Board MCL P/N: TB-204
Suggested PCB Layout (PL-217)



RESISTORS R1, R2: 100 Ohm, 0603 SIZE.
NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- wideband, DC to 4.6 GHz
- low insertion loss, 1.3 dB typ.
- hermetically sealed
- aqueous washable

Applications

- PCN
- cellular
- 2-way radio
- receiver antenna switching

Electrical Specifications

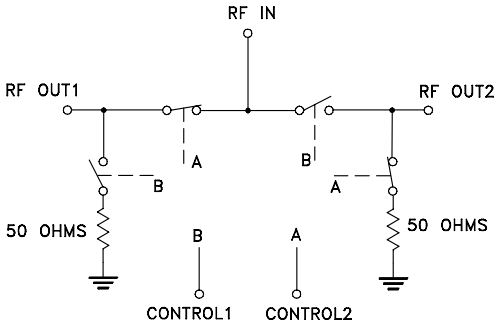
FREQ.[4] (GHz)		INSERTION LOSS (dB)								1dB COMPR. (dBm)			IN-OUT ISOLATION (dB)					
		DC-200 MHz		200-1000 MHz		1000-3000 MHz		3000-4600 MHz		DC-200 MHz	200-1000 MHz	1000-4600 MHz	DC-200 MHz		200-1000 MHz		1000-4600 MHz	
f_L	f_U	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.
DC	4.6	0.8	1.1	0.9	1.3	1.5	2.6	1.5	2.6	10	17	27	60	45	50	40	30	25

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	2.5 typ. at -8V
VSWR(:1)	1.3 typ.
Rise/Fall time (10%-90%), ns Switching time, 50% of Control to 90% RF(Turn-on), ns 10% RF(Turn-off), ns	2 typ. 4 typ. 2.5 typ.
Video Leakage, mVp-p 0/-5V Control	30 typ.
MTBF, hrs @ 100°C case	$11X10^6$

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

1. Max. Input RF power, +27 dBm except below 500 MHz +24 dBm
2. Control voltage (-10V) maximum.
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.

Electrical Schematic

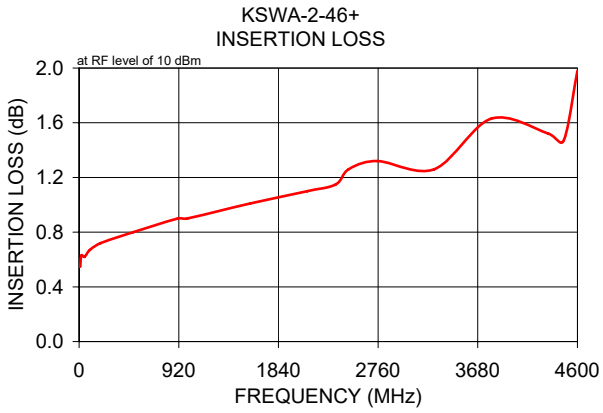


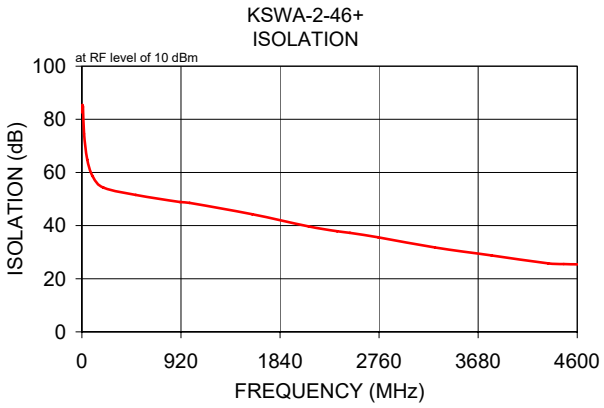
Notes

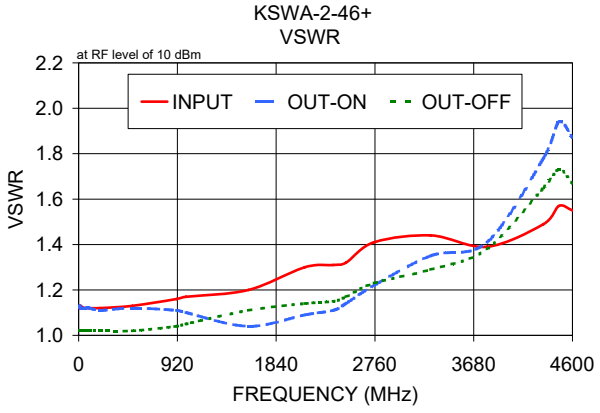
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Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) Control @ 0V/-5V IN-OUT		OFF ISOLATION (dB) Control @ 0V/-5V IN-OUT		VSWR IN	VSWR OUT ON	VSWR OUT OFF
	x̄	σ	x̄	σ	x̄	x̄	x̄
3.00	0.55	0.01	82.53	2.67	1.12	1.12	1.02
5.00	0.55	0.02	85.42	4.39	1.12	1.12	1.02
10.00	0.55	0.02	84.71	7.84	1.13	1.13	1.02
20.00	0.63	0.04	74.57	2.52	1.13	1.12	1.02
50.00	0.62	0.02	64.87	0.76	1.12	1.12	1.02
100.00	0.67	0.02	58.56	0.45	1.12	1.12	1.02
200.00	0.72	0.02	54.29	0.36	1.12	1.11	1.02
500.00	0.80	0.02	51.52	0.42	1.13	1.12	1.02
911.55	0.90	0.02	48.87	1.18	1.16	1.11	1.04
1000.00	0.90	0.03	48.56	1.23	1.17	1.10	1.05
1581.00	1.01	0.04	44.26	1.63	1.20	1.04	1.11
2107.00	1.10	0.03	39.70	1.28	1.30	1.09	1.14
2370.00	1.15	0.05	37.89	1.12	1.31	1.11	1.15
2489.55	1.26	0.06	37.25	0.97	1.32	1.14	1.17
2752.55	1.32	0.07	35.59	0.62	1.41	1.22	1.23
3278.55	1.26	0.04	31.74	1.06	1.44	1.35	1.29
3804.55	1.63	0.09	28.75	0.72	1.39	1.41	1.38
4330.55	1.52	0.06	25.75	0.41	1.49	1.78	1.65
4474.00	1.47	0.09	25.51	0.36	1.57	1.94	1.73
4600.00	1.98	0.06	25.42	0.32	1.55	1.87	1.67







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