

Surface Mount Switch

50Ω SPDT, Reflective DC⁴ to 4.6 GHz

KSW-2-46+



CASE STYLE: XX112

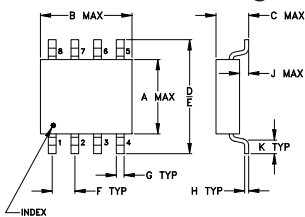
Maximum Ratings

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.	

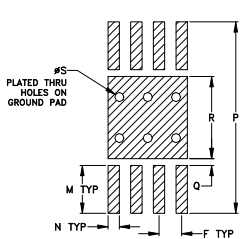
Pin Connections

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

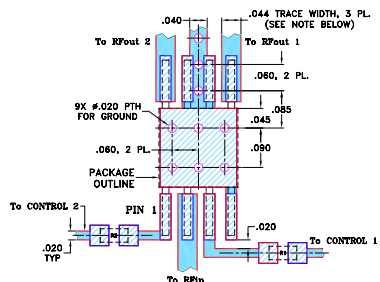


Suggested Layout, Tolerance to be within ±.002

Outline Dimensions (inch)

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
.005	.070	.105	.025	.420	.015	.180	.020
0.13	1.78	2.67	0.64	10.67	0.38	4.57	0.51
							wt.
							grams
							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.
- aqueous washable
- low video leakage, 30 mVp-p typ.

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	Typ.	Min.					
f _L	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Typ.	Typ.	Min.					
DC	0.9	1.1	1.0	1.3	1.3	1.8	2.0	2.8	10	17	27	60	50	50	40	40	28

Additional Specifications

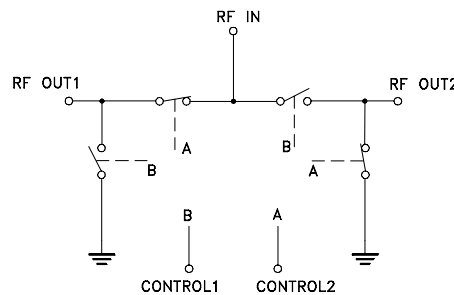
Control Voltage, volts	
Low State	-0.2 to 0
High State (negative)	
for compression specs	-8
for other specs	-5 to -8
Control Current, mA	2.5 typ. at -8V
VSWR(:1)	1.3 typ.
Rise/Fall time (10%-90%), ns	2 typ.
Switching time, 50% of Control to	
90% RF(Turn-on), ns	4 typ.
10% RF(Turn-off), ns	2.5 typ.
**Video Leakage, mVp-p 0/-5V Control	30 typ.
MTBF, hrs @ 100°C case	7X10 ⁶

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.

CONTROL LOGIC

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

Electrical Schematic



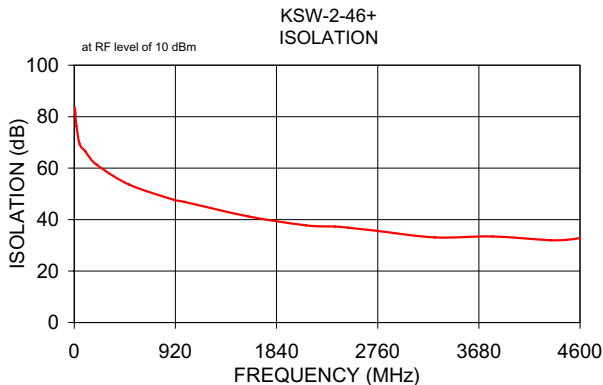
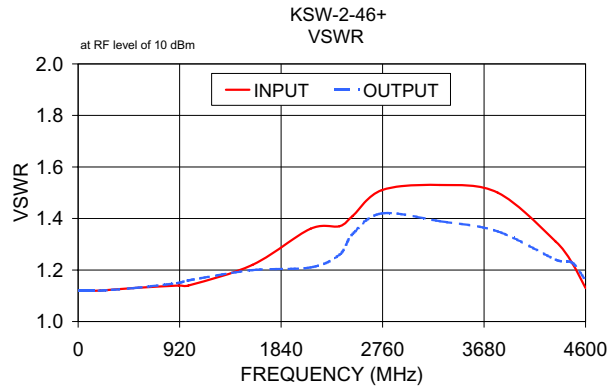
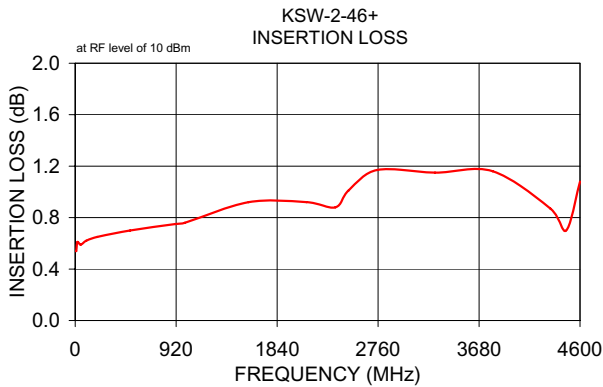
Notes

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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		
	\bar{x}	σ	\bar{x}	σ	IN \bar{x}	ON \bar{x}	OUT \bar{x}
3.00	0.54	0.04	83.44	4.68	1.12	1.12	16.46
5.00	0.54	0.04	83.46	2.97	1.12	1.12	16.21
10.00	0.54	0.04	81.44	2.66	1.12	1.12	16.21
20.00	0.61	0.06	76.29	2.13	1.12	1.12	16.04
50.00	0.59	0.04	69.27	0.92	1.12	1.12	15.37
100.00	0.62	0.04	66.59	1.42	1.12	1.12	14.63
200.00	0.65	0.04	61.43	0.74	1.12	1.12	14.00
500.00	0.70	0.04	53.61	0.93	1.13	1.13	12.83
911.55	0.75	0.04	47.64	0.59	1.14	1.15	11.86
1000.00	0.76	0.04	46.91	0.61	1.14	1.16	11.79
1581.00	0.92	0.05	41.27	0.47	1.22	1.20	11.85
2107.00	0.92	0.06	37.77	0.41	1.36	1.21	11.91
2370.00	0.88	0.06	37.33	0.42	1.37	1.26	9.64
2489.55	1.01	0.07	36.86	0.43	1.41	1.34	9.98
2752.55	1.17	0.09	35.65	0.39	1.51	1.42	9.70
3278.55	1.15	0.11	33.10	0.42	1.53	1.39	13.14
3804.55	1.16	0.08	33.46	0.37	1.50	1.35	13.37
4330.55	0.87	0.05	31.99	0.42	1.31	1.24	15.41
4474.00	0.70	0.04	32.16	0.40	1.23	1.23	17.84
4600.00	1.08	0.04	32.78	0.42	1.13	1.16	14.40



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