Surface Mount

High Isolation Switch

SWM-2-50DR+

50Ω SPDT, Reflective DC to 4500 MHz

CASE STYLE: DL1020
PRICE: $5.30 ea. QTY (10-49)

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

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Maximum Ratings

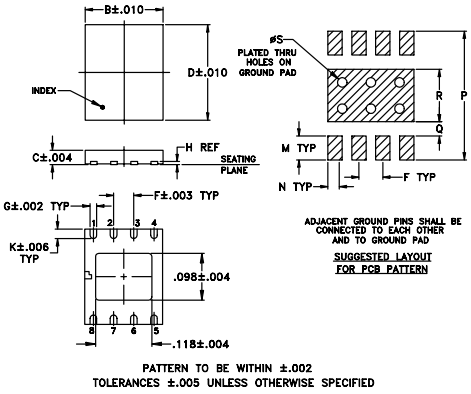
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power and Voltage	see note 1

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

Pin Connections

RF IN	6
RF OUT 1	1
RF OUT 2	4
TTL IN	2
+5V	5
-5V	7
TTL GND	3
GND	8
GND	PADDLE

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
--	.193	.035	.236	--	.050	.017	.008	--	.024
--	4.90	0.90	6.00	--	1.27	0.43	0.20	--	0.60

L	M	N	P	Q	R	S	T	
--	.050	.030	.270	.030	.110	.020	--	wt
--	1.27	0.76	6.86	0.76	2.79	0.51	--	grams
								0.08

Features

- high isolation, 55 dB typ. at 1 GHz
- low insertion loss, 0.7 dB typ.
- integral TTL driver
- aqueous washable

Applications

- automated switching networks
- transmitters/receiver isolation

Electrical Specifications (T_{AMB}=25°C)

FREQ. (MHz)		INSERTION LOSS (dB)								1dB COMPR. (dBm)				IN-OUT ISOLATION (dB)							
		DC-100 MHz		100-1000 MHz		1000-2000 MHz		2000-4500 MHz		DC-100 MHz	100-1000 MHz	1000-2000 MHz	2000-4500 MHz	DC-100 MHz		100-1000 MHz		1000-2000 MHz		2000-4500 MHz	
f_L	f_U	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.
DC	4500	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

†drops to 17.0 dBm at 10 MHz

Switching Specifications		
Power Suppply Voltage +5V ±.20 -5V ± .20	Current, mA 9 max. 9 max.	
TTL Control low threshold high threshold	Voltage, V 0 min., 0.8 max. 2 min., 5 max.	Current, mA 0.2 max. 5 max.
VSWR* (:1)	1.15 typ. to 2GHz, 1.3 typ. to 4.5 GHz	
Rise/Fall Time, ns Switching Time, ns turn on/off	5 typ., 15 max. 10 typ., 20 max.	
Video leakage**, mV p-p	30 typ.	

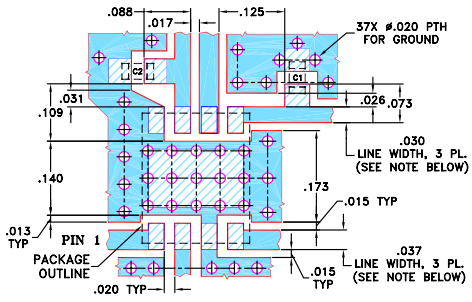
TTL	CONTROL LOGIC	
	RF1	RF2
LOW	ON	OFF
HIGH	OFF	ON

* For all states of reflective switch in "ON" condition, "OFF port" 5:1 VSWR typ.

** Video leakage or break through is defined as leakage of TTL switching signal to RF output ports

1. Absolute maximum power and voltage rating:
   RF input power, 250mW
   Supply voltage: ±6V DC
2. OFF state of RF output is low impedance.
3. All RF inputs must be DC blocked or held at 0V DC

Demo Board MCL P/N: TB-161-1+
Suggested PCB Layout (PL-122)

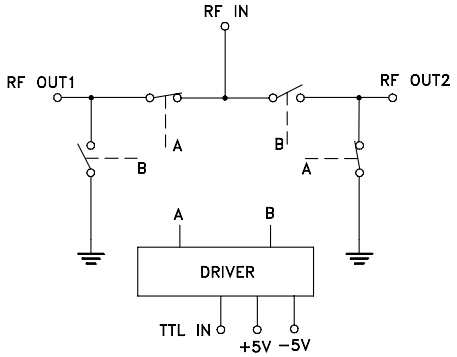


NOTE:
CAPACITORS C1 & C2: 10 ± 2% pF, 0603 SIZE

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .020" ± .002". 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
DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Electrical Schematic



REV. E
M125593
SWM-2-50DR+
ED-10679
RS/YB/CP
091203

Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) Control @ -5V IN-OUT		OFF ISOLATION (dB) Control @ 0V IN-OUT		VSWR IN	VSWR OUT	
	$\overline{x}$	σ	$\overline{x}$	σ	$\overline{x}$	ON $\overline{x}$	OFF $\overline{x}$
0.30	0.52	0.00	113.18	10.77	1.12	1.12	5.30
0.50	0.51	0.00	113.06	3.58	1.12	1.12	5.33
0.80	0.51	0.00	109.96	6.86	1.12	1.12	5.34
1.00	0.51	0.00	107.70	6.84	1.12	1.12	5.34
4.00	0.52	0.00	97.85	1.38	1.12	1.12	5.33
8.00	0.53	0.00	93.45	0.78	1.12	1.12	5.32
20.00	0.55	0.00	87.22	1.53	1.11	1.11	5.31
60.00	0.58	0.01	77.63	1.27	1.11	1.11	5.27
100.00	0.59	0.01	73.10	1.40	1.11	1.11	5.23
400.00	0.66	0.01	60.63	1.23	1.13	1.13	5.10
600.00	0.69	0.01	56.70	1.15	1.14	1.15	5.11
1000.00	0.75	0.01	51.22	1.02	1.15	1.17	5.14
1500.00	0.82	0.01	45.93	0.87	1.18	1.22	5.05
2000.00	0.90	0.01	42.42	0.87	1.26	1.32	5.02
2500.00	1.08	0.02	39.36	0.87	1.39	1.44	5.35
3000.00	1.25	0.03	36.68	0.73	1.53	1.52	6.02
3500.00	1.43	0.02	35.06	0.72	1.50	1.49	6.75
4000.00	1.68	0.02	32.67	0.53	1.39	1.29	6.55
4250.00	1.67	0.01	33.95	0.58	1.28	1.15	6.07
4500.00	1.54	0.01	32.31	0.44	1.12	1.10	6.34