Surface Mount

High Isolation Switch

M3SW-2-50DR+

50Ω SPDT, Reflective DC[3] to 4500 MHz

CASE STYLE: DL805

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Supply V, Input Power	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

Features

- high isolation, 65 dB typ. at 1 GHz
- low insertion loss, 0.7 dB typ.
- integral TTL driver
- miniature case style DL805

+RoHS Compliant

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500,1000

Applications

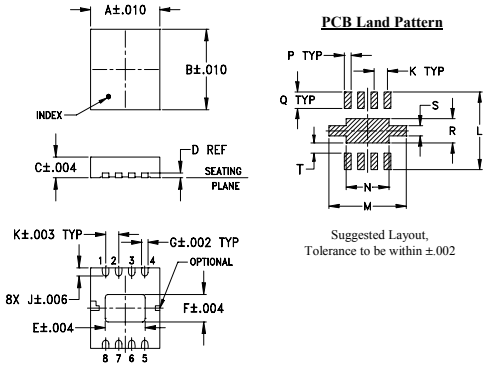
- automated switching networks
- transmitters/receivers

Electrical Specifications (T_{AMB}=25ºC)

FREQ.[3] (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	1.0	0.7	1.2	0.9	1.4	1.5	1.9	20†	25	25	20	85	70	60	53	50	44	35	30

†drops to 17.0 dBm at 10 MHz

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
0.128	0.128	0.035	0.008	0.080	0.047	0.013	--	0.014	0.026
3.25	3.25	0.89	0.20	2.03	1.19	0.33	--	0.36	0.66

L	M	N	P	Q	R	S	T	wt
0.158	0.158	0.084	0.013	0.030	0.048	0.020	0.025	grams
4.01	4.01	2.13	0.33	0.76	1.22	0.51	0.64	0.02

Additional Specifications		
Power Suppply Voltage @-40ºC to 85ºC +4.80 to +5.25V -5.25 to -4.80V	@-55ºC to 100ºC +4.90 to +5.25V -5.25 to -4.90V	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)	1.1 Typ. to 2GHz, 1.25 Typ. to 4.5 GHz	
Rise/Fall Time, ns Switching Time, ns turn on/off	5 Typ., 10 Max. 10 Typ., 15 Max.	
Video Leakage**, mVp-p	30 Typ.	

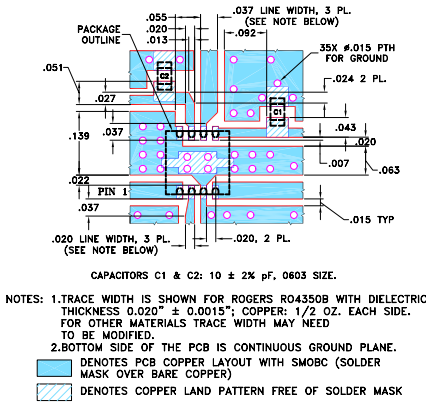
TTL	CONTROL LOGIC	
	RF1	RF2
LOW	ON	OFF
HIGH	OFF	ON

* 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 connections must be DC blocked or held at 0V DC.
4. ESD ratings
   Human Body Model (HBM): Class 1C(1000 to <2000V) in accordance with ESD STM5.1-2001
   Machine Model(MM): Class M1(<100V) in accordance with ESD STM5.2-1999

Demo Board MCL P/N: TB-159
Suggested PCB Layout (PL-120)



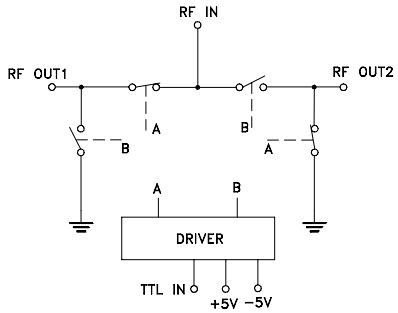
CAPACITORS C1 & C2: 10 ± 2% pF, 0603 SIZE.

NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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

Electrical Schematic



Notes
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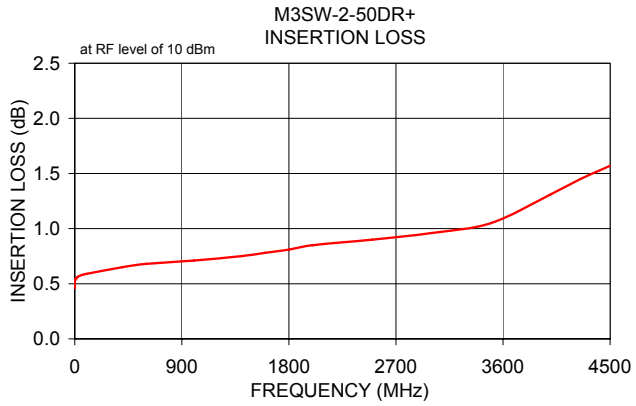
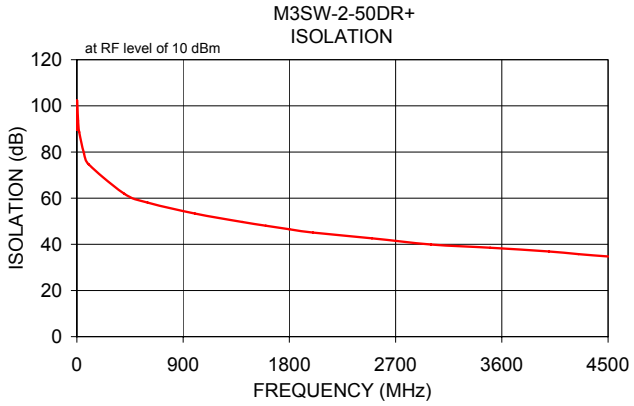
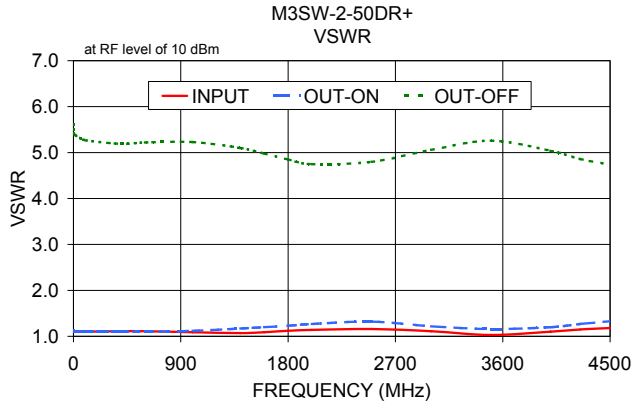
Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) IN-OUT $\bar{x}$	σ	OFF ISOLATION (dB) IN-OUT $\bar{x}$	σ	VSWR IN $\bar{x}$	OUT ON $\bar{x}$	OUT OFF $\bar{x}$
0.03	0.46	0.01	90.55	2.57	1.12	1.12	5.61
0.10	0.47	0.01	89.66	3.24	1.12	1.12	5.61
1.00	0.54	0.01	102.38	5.74	1.12	1.12	5.41
10.00	0.54	0.01	93.55	1.66	1.11	1.11	5.39
20.00	0.56	0.01	88.66	1.05	1.11	1.11	5.37
60.00	0.58	0.01	79.56	0.62	1.10	1.10	5.31
100.00	0.59	0.01	74.67	0.50	1.10	1.10	5.27
400.00	0.65	0.01	61.97	0.33	1.11	1.10	5.19
600.00	0.68	0.01	58.10	0.29	1.11	1.10	5.22
1000.00	0.71	0.01	53.36	0.28	1.09	1.12	5.23
1400.00	0.75	0.01	49.71	0.24	1.07	1.17	5.10
1600.00	0.78	0.01	48.08	0.24	1.09	1.20	4.98
1800.00	0.81	0.01	46.53	0.22	1.12	1.23	4.85
2000.00	0.85	0.01	45.10	0.21	1.14	1.27	4.75
2500.00	0.90	0.01	42.61	0.21	1.16	1.32	4.80
3000.00	0.96	0.01	39.91	0.19	1.11	1.22	5.06
3500.00	1.05	0.01	38.53	0.20	1.03	1.16	5.26
4000.00	1.31	0.02	36.88	0.20	1.10	1.20	5.04
4250.00	1.45	0.02	35.73	0.18	1.15	1.27	4.86
4500.00	1.57	0.02	34.73	0.14	1.18	1.33	4.74







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