

High Isolation

# Switches

**NEW!**

**M3SW-2-50DR**  
**M3SWA-2-50DR**

SPDT, DC to 4.5 GHz

**Features**

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

**Applications**

- transfer/receiver isolation
- automated switching networks



CASE STYLE: DL805  
PRICE: \$4.95 ea. QTY. (10-49)

**Electrical Specifications (T<sub>AMB</sub>= 25°C)**

MODEL NO.	FREQ. (GHz)	REFLECTIVE	ABSORPTIVE	INSERTION LOSS (dB)				IN-OUT ISOLATION (dB)				1 dB COMPRESSION (dBm)											
				FREQUENCY BAND				FREQUENCY BAND				FREQUENCY BAND											
				A1	A	B	C	A1	A	B	C	A1*	A	B	C								
M3SW-2-50DR	DC-4.5	•	•	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.				
M3SWA-2-50DR	DC-4.5	•	•	0.6	1.0	0.7	1.2	0.9	1.4	1.5	1.9	85	75	60	53	50	44	35	30	20	25	25	20
				0.6	1.0	0.7	1.2	0.9	1.4	1.4	2.0	80	65	65	53	57	50	36	30	20	25	25	20

A1= DC-100 MHz, A= 0.1-1 GHz, B= 1-2 GHz, C= 2-4.5 GHz  
\* Drops to 17.0 dBm at 10 MHz.

**Switching Specifications**

Power Supply			
Voltage @ -40°C to 85°C	@ -55°C to 100°C	Current, mA	
+4.80 to +5.25V	+4.90 to +5.25V	9 max.	
-5.25 to -4.80V	-5.25 to -4.90V	9 max.	
TTL Control			
	Voltage, V	Current, mA	Control Logic
low threshold	0 min., 0.8 max.	max. 0.2	RF1 ON RF2 OFF
high threshold	2 min., 5 max.	5	OFF ON
VSWR* (:1)			
	1.1 typ. to 2 GHz, 1.25 typ. to 4.5 GHz		
Rise/Fall Time, ns	5 typ., 10 max.		
Switching Time, ns turn on/off	10 typ., 15 max.		
Video leakage**, mv p-p	30 typ.		

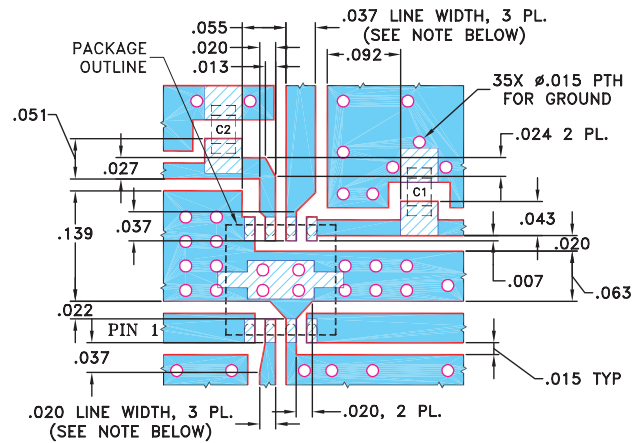
**NOTES:**

- Operating Temperature, -55°C to 100°C
- Storage Temperature, -55°C to 100°C
- \* For all states of absorptive switch, and for reflective switch in "ON" condition; for reflective switch "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 ratings:  
RF input power, 250 mW,  
Supply voltage: ±6 V DC
- 2. OFF state of RF output is low impedance.
- 3. Prices and specifications subject to change without notice.

**Pin Configuration**

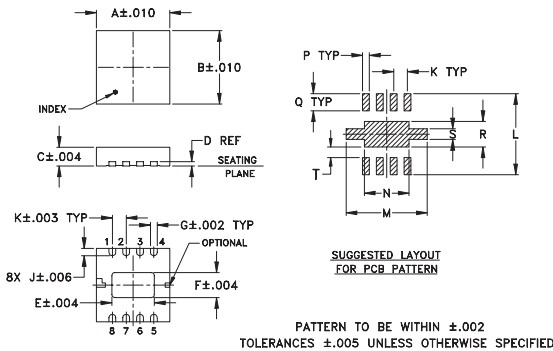
RF IN	6
RF OUT 1	1
RF OUT 2	4
TTL IN	2
+5V	5
-5V	7
TTL GND	3
GND	8
GND	PADDLE

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



- CAPACITORS C1 & C2: 10 ± 2% pF, 0603 SIZE.
- NOTE:**
1. TRACE WIDTH IS SHOWN FOR ROGERS R04350 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
  - DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

**Outline Drawing**



**Outline Dimensions (inch / mm)**

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
.128	.128	.035	.008	.080	.047	.013	—	.014	.026	.158	.158	.084	.013	.030	.048	.020	.025	grams
3.25	3.25	0.90	0.20	2.03	1.19	0.33	—	0.36	0.66	4.01	4.01	2.13	0.33	0.76	1.22	0.51	0.64	.02



Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

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INTERNET <http://www.minicircuits.com>

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

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M93585  
ED-9656A  
M3SW-2-50DR  
RS/TD/CP  
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