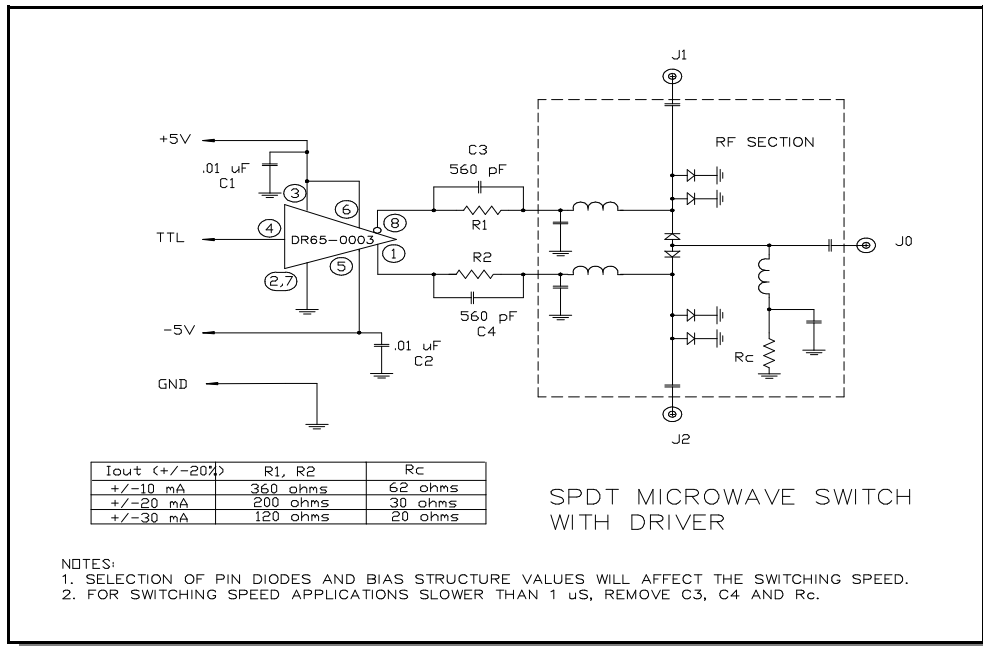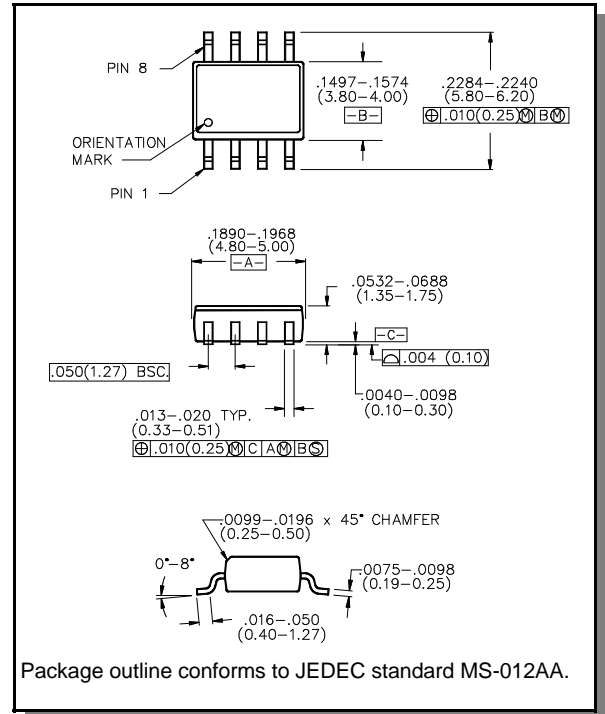# M/A-COM SPDT PIN Diode Driver

V 5.00

Features

- Moderate Speed, CMOS Technology (25 nS)
- Complementary Outputs
- High Drive Current Capability (± 50 mA)
- Low Current Consumption
- Plastic SOIC Body for SMT Applications
- Tape and Reel Packaging Available

Description

M/A-COM's DR65-0003 is a SPDT driver used to interface between TTL logic signals and PIN diode based microwave switches. High-speed analog CMOS technology is used to achieve low power consumption at moderate speeds. Low output resistances allow it to develop high output current spikes to ensure fast switching speeds. The complementary output stages are structured so it can be used as an inverting or non-inverting driver for SPST switches, or as a single input, complementary driver for SPDT switches. The monolithic die is packaged in a SO-8, plastic surface mount package and is available in tape and reel packaging for high volume applications. The DR65-0003 is ideally suited for driving M/A-COM's line of HMIC switches.

SO-8

Package outline conforms to JEDEC standard MS-012AA.

Iout (+/-20%)	R1, R2	Rc
+/-10 mA	360 ohms	62 ohms
+/-20 mA	200 ohms	30 ohms
+/-30 mA	120 ohms	20 ohms

SPDT MICROWAVE SWITCH WITH DRIVER

NOTES:
1. SELECTION OF PIN DIODES AND BIAS STRUCTURE VALUES WILL AFFECT THE SWITCHING SPEED.
2. FOR SWITCHING SPEED APPLICATIONS SLOWER THAN 1 uS, REMOVE C3, C4 AND Rc.

Electrical Specifications, T_A = +25°C, +Vcc = + Vdd = + 5.0V ± 5%, -Vee = - 5.0V ±5%

Parameter	Test Conditions	Units	Min	Typical	Max
Switching Speed [1] Delay Rt/Ft	Spike current into 10 ohm load 50 % TTL to 90% 10%-90%; 90%-10%	nS nS	— —	25 2	35 5
PRF	50% duty cycle	MHz	DC	—	5
Output Voltage Drop, No Load	With reference to supply voltage	V	—	—	.25
DC Output Current Peak Spike Output Current	Load Dependant Spiking Capacitor in Circuit	mA mA	— —	±30 ±150	±50 ±200
Output Stage on Resistance	Positive Output FET, Qp Negative Output FET, Qn	Ω Ω	— —	15 20	20 25
Quiescent Supply Currents	+5V -5V	mA mA	— —	— —	1.0 .2
TTL Levels	Logic "0" @ 20 µA sink current Logic "1" @ 20 µA source current	V V	0 2.0	— —	.8 5.0
Package Dissipation	—	mW	—	—	200

1. Decoupling capacitors (.01 µF) are required on power supply lines.

Absolute Maximum Ratings [2]

Parameter	Absolute Maximum
+V_{CC}	5.5V
+Vdd must be = or < +Vcc	+Vcc
+Vee	-5.5V
TTL Input Voltage	-0.5 V to Vcc +0.5V
Operating Temperature	-40ºC to +85ºC
Storage Temperature	-65ºC to +125ºC

2. Operation of this device above any one of these parameters may cause permanent damage.

Truth Table

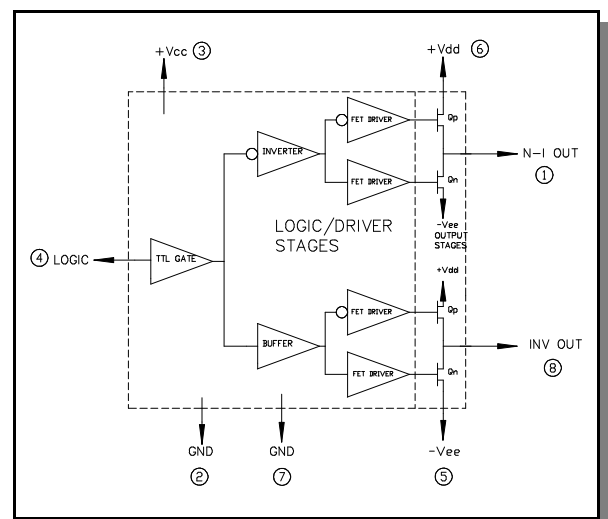| Logic Input (Pin 4)	N-I Out (Pin 1)	INV Out (Pin 8)
"0"	L	H
"1"	H	L

H: Iout is +Current
L: Iout is -Current

Ordering Information

Part Number	Package
DR65-0003	Bulk Packaging
DR65-0003TR	Tape & Reel (1K Reel)

Pin Function Table

Pin #	Function	Pin #	Function
1	N-I OUT	5	+Vee
2	GND	6	+Vdd
3	+Vcc	7	GND
4	LOGIC	8	INV OUT

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