



**TACHONICS**  
CORPORATION

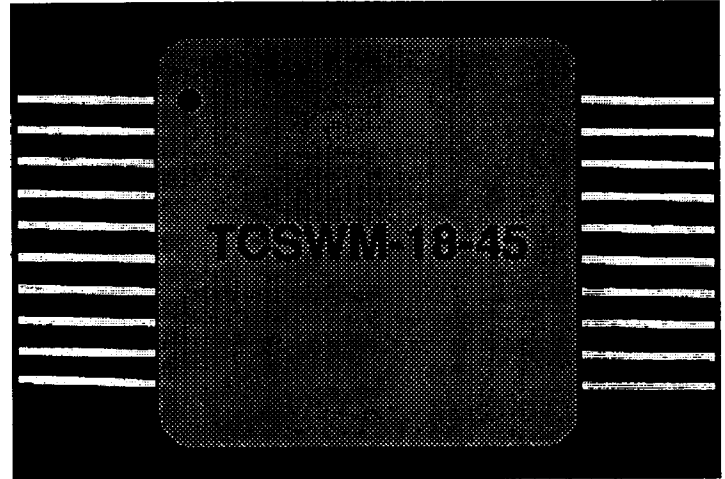
**Decoded TTL  
Multithrow Switches**

**TCSWM**  
-18-45  
-16-45

**Advance Information Data Sheet**

**Features**

- High Speed Decoded Series
- TCSWM-18-45 SP4T
- TCSWM-16-45 SP3T
- Broad Band DC to 3 GHz
- Integral TTL Decoder
- 45 dB Isolation Typ. @ 3 GHz
- 1.7 dB Typ. Insertion Loss @ 3 GHz
- 25 nsec Typ. Switching Speed
- Low DC Power Consumption



**Description**

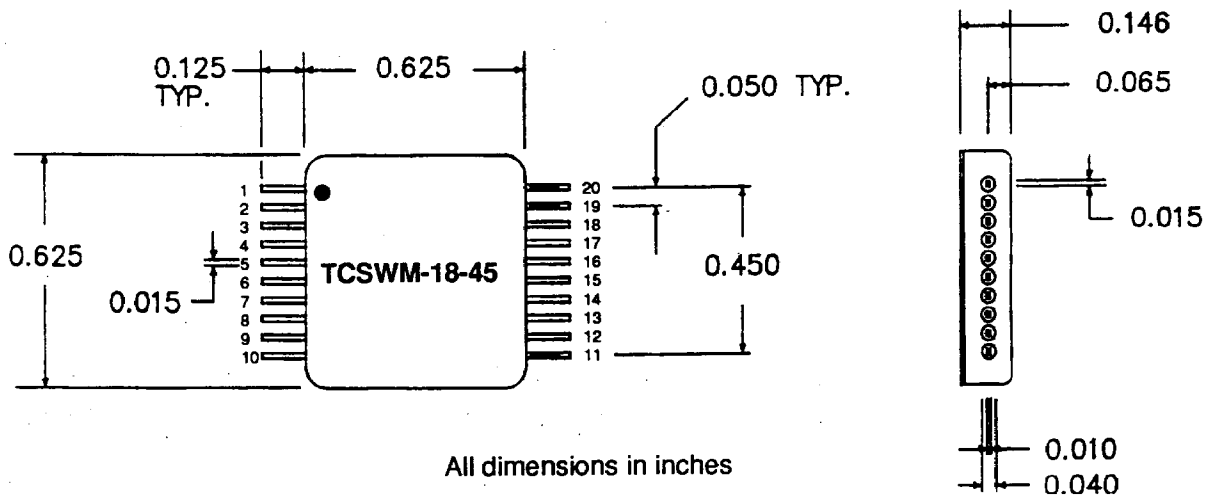
The TCSWM-18-45 is an **SP4T** driven switch, which forms part of Tachonics' **High Speed Decoded Series** of multithrow switches covering DC to 3.0 GHz. The TCSWM-16-45 is an **SP3T** derivative. The devices include integral TTL decoders which are addressable from just two TTL control pins. They are housed in the TC-45 20-lead glass beaded all-metal package, measuring 0.625 x 0.625 x 0.146 inches. This family of switches features faster switching speed than Tachonics' **High RF Power Driven Series** of switches. Further derivatives are planned.

**Electrical Specifications**

**T<sub>case</sub> = 25° C (All Variants)**

<b>Parameters and Test Conditions</b>	<b>Freq.</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Units</b>
Frequency Range		DC		3	GHz
Insertion Loss (RFin to any RFout, see Truth Table)	50 MHz 3 GHz		1.2 1.7		dB dB
Isolation (RFin to any RFout, see Truth Table)	50 MHz 3 GHz		65 45		dB dB
VSWR ('ON STATE') of all ports	50 MHz 3 GHz		1.3 1.3		
VSWR ('OFF STATE') of all ports	50 MHz 3 GHz		1.3 1.3		
Input Power @ 1.0 dB insertion loss compression	50 MHz 3 GHz		21 29		dBm dBm
Switching Speed (50% TTL to 90% RF)			25		nsec
RF Rise & Fall Times (10% to 90% RF)			10		nsec
Video Breakthrough to RF ports			25		mV p-p
Quiescent Supply Current @ -15V			2		mA
Maximum Toggle Rate			10		MHz

# Package Layout



All dimensions in inches

## PIN DESIGNATIONS

PIN No	SP4T	SP3T
	TCSWM-18-45	TCSWM-16-45
1	RFout4	RFin
2	GND	GND
3	GND	GND
4	GND	GND
5	GND	GND
6	RFin	GND
7	GND	GND
8	GND	GND
9	GND	GND
10	RFout1	RFout1
11	RFout2	RFout2
12	GND	GND
13	GND	GND
14	N/C	N/C
15	TTL2	TTL2
16	TTL1	TTL1
17	-15V	-15V
18	GND	GND
19	GND	GND
20	RFout3	RFout3

### Notes:

1. The standard devices are assembled as absorptive. They can be ordered as reflective on the output ports, in the 'OFF' state, by specifying an 'R' in the part number. e.g. TCSWM-18R-45 or TCSWM-16R-45.
2. All variants are assembled as standard with a -15V power supply requirement at pin 17. Three alternative voltages are available to special order. e.g. -8V, -12V and -5V. Specify 'A' for -8V, 'B' for -12V and 'C' for -5V e.g. TCSWM-18RA-45 is a 'reflective' switch with a -8V supply.
3. Supply current varies with toggle rate. 2 mA is typical @ 1kHz, 7mA is typical @ 5MHz and 13 mA @ 10MHz.
4. The TCSWM-16-45 allows an 'All Off' state to be selected by setting TTL1 and TTL2 high. The standard device provides a matched (absorptive) condition at the output ports only.

## TRUTH TABLES

TCSWM-16-45	RFout1	RFout2	RFout3	All Off
TTL1	0	1	0	1
TTL2	0	0	1	1

TCSWM-18-45	RFout1	RFout2	RFout3	RFout4
TTL1	0	1	0	1
TTL2	0	0	1	1

Devices and specifications are subject to change without notice

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