

STANDARD PRODUCTS

DESCRIPTION

The SN70-33x series of non-reflective single-pole septuple-throw (2.0-18.0 GHz) PIN diode switches employ a series/shunt configuration in a microstrip transmission line circuit. They are compact in size, light weight, featured with field replaceable connectors, integral TTL compatible drivers, and offered in medium (-332) and high (-333) isolation models. They are also available with video transient filtering.

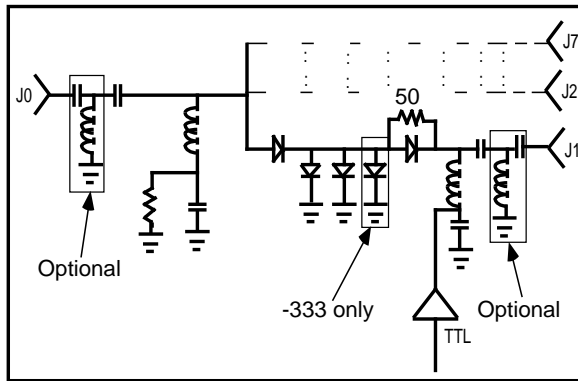
SP7T SWITCH

SERIES SN70-33x

Non-Reflective Series/Shunt

25 nsec. Switching Speed

SCHEMATIC



ELECTRICAL PERFORMANCE

CHARACTERISTIC	WITH DRIVER	
	MAX.	TYP.
Switching Speed (1)	25ns	20ns
Transition Time (2)	20ns	10ns
Power Handling (CW or peak)	+30 dBm	+33 dBm
Positive Supply	5V± 2% 210 mA max	
Negative Supply (3)	See Option 140 mA max	
Control Impedance	TTL (1 unit loads max)	
Control Logic (3)	see Options on back	
Video Transients (4)	see Options on back	

MODEL	CHARACTERISTIC		FREQUENCY (GHz)			
			S	C	X	P
		See Note (5)				
			2.0-4.0	4.0-8.0	8.0-12.4	12.4-18.0
SN70-332	INSERTION LOSS (dB max)	TYP.	1.3	1.9	2.5	3.7
		MAX	1.7	2.3	2.9	4.1
	VSWR {On/Off} (max)		1.7	2.2	2.2	2.4
	ISOLATION (dB min)		60	55	50	50
SN70-333	INSERTION LOSS (dB max)	TYP.	1.5	2.0	2.7	3.9
		MAX	1.9	2.4	3.1	4.3
	VSWR {On/Off} (max)		1.7	2.2	2.2	2.4
	ISOLATION (dB min)		75	70	65	65

- (1) Turn on time is the time interval between 50% of the control voltage and 90% of the detected RF. Turn off time is the time interval between 50% of the control voltage and 10% of the detected RF. Switching Speed is defined as the slower of the two times (usually the turn on time).
- (2) Rise time is the time required for the detected RF to transition between 10% and 90% of its final value. Fall time is the time required for the detected RF to transition between 90% and 10% of its initial value. Transition time is defined as the slower of the two times (usually the Rise time).
- (3) Setting more than one RF port at a time to the loss state causes excessive current in the common arm bias return.
- (4) Measured into a 50 ohms with a 150mHz B.W. oscilloscope. Typically 2V p-p max. unfiltered and 50mV p-p max. with filtering. Filtering will typically add 0.3dB insertion loss per filter in a transmission path.
- (5) Operating frequency range for narrower bandwidth unit(s) is specified by an option code that is composed of two letters. The first letter designates the starting frequency band and the second one designates the ending frequency band. Frequency code is not required for standard unit that covers 2.0 to 18.0 GHz ("SP").



ENVIRONMENTAL RATINGS

Temperature:

Operating.....-55°C to +85°C
 Non-operating.....-65°C to +125°C

Humidity:

MIL-STD-202C, Method 103B,
 Cond. B (96 hrs. at 95%)

Vibration:

MIL-STD-202C, Method 204A,
 Cond. B (0.06" double amplitude
 or 15G, whichever is less)

Altitude:

MIL-STD-202C, Method 105C,
 Cond. B (50,000ft)

Temp Cycling:

MIL-STD-202C, Method 105C,
 Cond. D, 5 cycles

Shock:

MIL-STD-202C, Method 213,
 Cond. B (750G, 6ms)

OPTIONS

LOGIC:

OPTION NUMBER	LOGIC DESCRIPTION	1	0
(STD) (3)	INVERTING	ISO.	LOSS
L2 (3)	NON INVERTING	LOSS	ISO.

CONTROL CONNECTOR:

(STD).....Solder Pin
 C2.....SMC-M
 for detail.

FREQUENCY:

(STD).....2.0 to 18.0 GHz
 Two Letter Code, see note 5

VIDEO TRANSIENT:

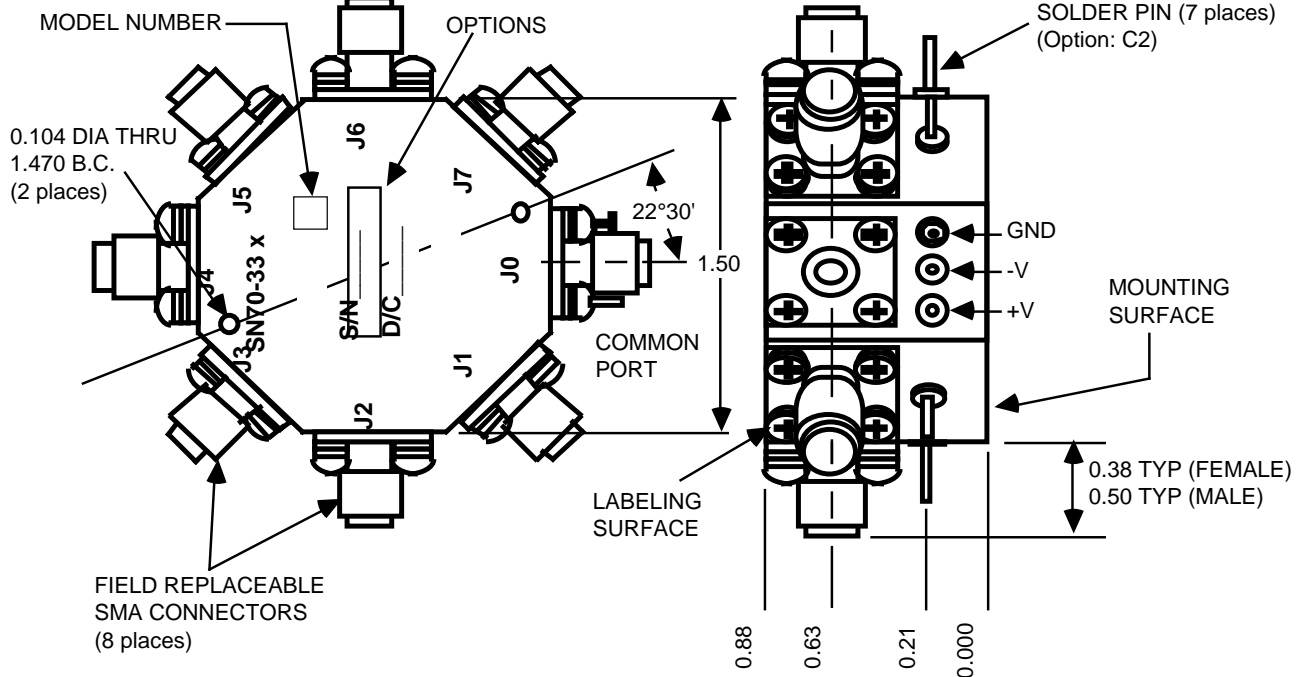
(STD).....None
 F2.....All Ports
 F3.....Common Port
 Only

NEGATIVE SUPPLY

(STD).....-12V
 N2.....-15V

F4.....Non-Common Ports
 Only

OUTLINE



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