

Top View

MAXIM IH5341

14 Lead DIP

Pin 1: V+
Pin 2: NC
Pin 3: D1
Pin 4: GND
Pin 5: D2
Pin 6: V-
Pin 7: NC
Pin 8: NC
Pin 9: S2
Pin 10: IN2
Pin 11: VL
Pin 12: IN1
Pin 13: NC
Pin 14: S1

MAXIM IH5341

10 Lead TO-100

Pin 1: IN1
Pin 2: S1
Pin 3: V+
Pin 4: D1
Pin 5: GND
Pin 6: D2
Pin 7: V-
Pin 8: S2
Pin 9: IN2
Pin 10: VL

MAXIM IH5352

16 Lead DIP

Pin 1: IN1
Pin 2: S1
Pin 3: IN2
Pin 4: S2
Pin 5: IN3
Pin 6: S3
Pin 7: IN4
Pin 8: S4
Pin 9: VL
Pin 10: D4
Pin 11: V-
Pin 12: D3
Pin 13: GND
Pin 14: D2
Pin 15: V+
Pin 16: D1

IH5341/IH5352

T-51-11

Dual/Quad RF/Video Switches**ABSOLUTE MAXIMUM RATINGS**

Supply Voltages V^+ and V^- $\pm 17V$
 Current in any Terminal 50mA
 Analog Input Voltage V^+ to V^-
 Operating Temperature Range
 (M Version) $-55^\circ C$ to $+125^\circ C$
 (I Version) $-20^\circ C$ to $+85^\circ C$
 (C Version) $0^\circ C$ to $+70^\circ C$

Power Dissipation 250mW
 (Derate 7.5mW/ $^\circ C$ above $25^\circ C$)
 Storage Temperature Range $-65^\circ C$ to $+150^\circ C$
 Logic Control Voltage V^+ to V^-
 Voltage on V_L Pin V^+ to V^-
 Lead Temperature (Soldering, 10 sec.) $+300^\circ C$

Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

($V^+ = +15V$, $V_L = +5V$, $V^- = -15V$, $T_A = 25^\circ C$ unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	TYP (Note 1)	M GRADE DEVICE			I/C GRADE DEVICE			UNITS
				$-55^\circ C$	$+25^\circ C$	$+125^\circ C$	$-20/0^\circ C$	$+25^\circ C$	$+85/+70^\circ C$	
Supply Voltage Ranges										
Positive Supply	V^+	(Note 3)	4.5 > 16 4.5 > V^+ -4 > -16		5 to 15			5 to 15		V
Logic Supply	V_L				5 to V^+			5 to V^+		
Negative Supply	V^-				-5 to -15			-5 to -15		
Switch "ON" Resistance (Note 4)	$r_{ds(ON)}$	$V_D = -5V$ to $+5V$ $I_S = 10$ mA, $V_{IN} = 2.4V$ $V_D = -10V$ to $+10V$		75	75	100	75	75	100	Ω
				125	125	175	150	150	175	
Switch "ON" Resistance	$r_{ds(ON)}$	$V = V_L = 5V$, $V_{IN} = 3V$ $V^- = -5V$, $V_D = \pm 3V$		250	250	350	300	300	350	
On Resistance Match		$I_S = 10$ mA, $V_D = \pm 5V$	5							
Switch "OFF" Leakage (Notes 2 and 4)	$I_{D(OFF)}$ or $I_{S(OFF)}$	$V_{S/D} = +5V$ to $-5V$ $V_{IN} = 0.8V$ $V_{S/D} = +14V$ to $-14V$			± 1	50		± 2	100	nA
					± 1	50		± 2	100	
Switch "ON" Leakage	$I_{D(ON)}$ + $I_{S(ON)}$	$V_D = +5V$ or $-5V$ $V_{IN} = 2.4V$ $V_D = +14V$ to $-14V$			± 1	100		± 2	100	
					± 1	100		± 2	100	
Input Logic Current	I_{IN}	$V_{IN} > 2.4V$ or < 0	0.001	1	1	10	1	1	10	μA
Positive Supply Quiescent Current	I^+	$V_{IN} = 0V$ or $+5V$ (Note 5)	0.01	1	1	10	1	1	10	
Negative Supply Quiescent Current	I^-	$V_{IN} = 0V$ or $+5V$ (Note 5)	0.01	1	1	10	1	1	10	
Logic Supply Quiescent Current	I_L	$V_{IN} = 0V$ or $+5V$ (Note 5)	0.01	1	1	10	1	1	10	

AC ELECTRICAL CHARACTERISTICS

$V^+ = +15V$, $V_L = +5V$, $V^- = 0V$, $T_A = +25^\circ C$

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Switch "ON" Time	t_{ON}	See Figure 1		160	300	ns
Switch "OFF" Time	t_{OFF}	See Figure 1		70	150	
"OFF" Isolation Rejection Ratio	OIRR	See Figure 2 (Note 6)	70	80		dB
Cross Coupling Rejection Ratio	CCRR	Figure 3 (Note 6) IH5341 IH5352	70 66	80 72		
Frequency where $r_{ds(ON)} = 0.7 \times DC$		(Note 6)	100			MHz

Note 1: Typical values are not tested in production. They are given as a design aid only.

Note 2: Positive and negative voltages applied to opposite sides of switch, in both directions successively.

Note 3: These are the operating voltages at which the other parameters are tested, and are not directly tested.

Note 4: The logic inputs are either greater than or equal to 2.4V or less than or equal to 0.8V, as required, for this test.

Note 5: Maximum values shown are for the dual (IH5341). They are doubled for the quad (IH5352).

Note 6: All AC parameters are sample tested only. Test circuits should be built on copper-clad ground plane board, with correctly terminated coax leads, etc.

Dual/Quad RF/Video Switches

Test Circuits

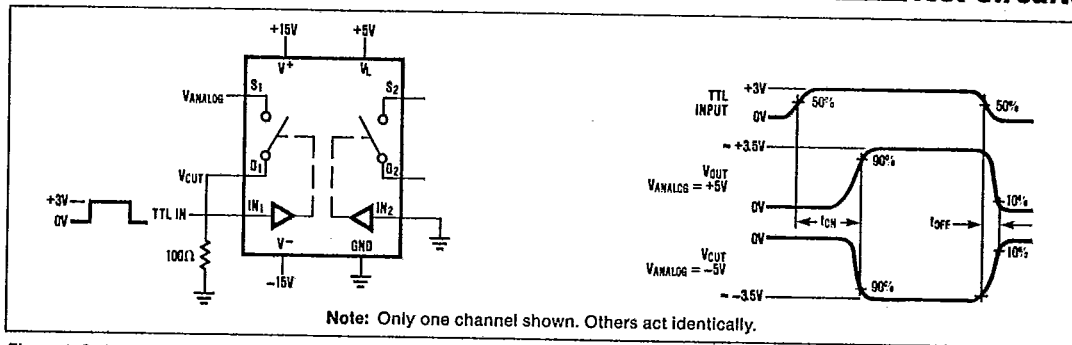


Figure 1. Switching Time Test Circuit and Waveforms

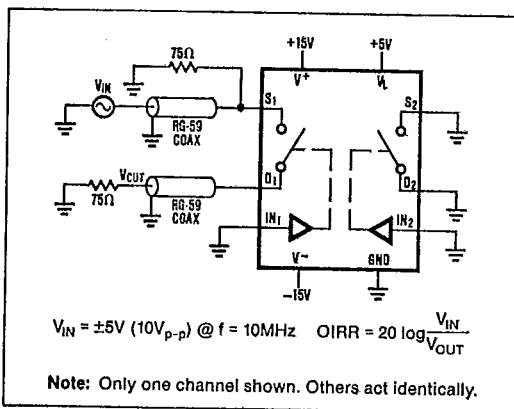


Figure 2. OFF Isolation Test Circuit

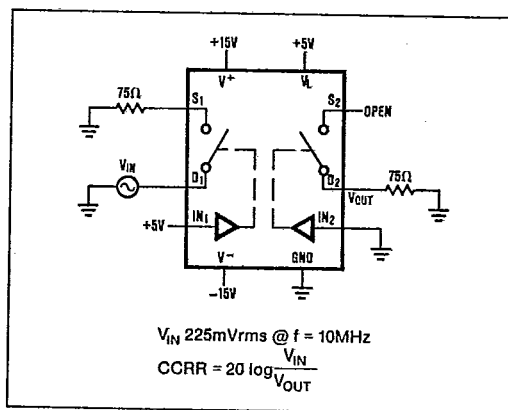
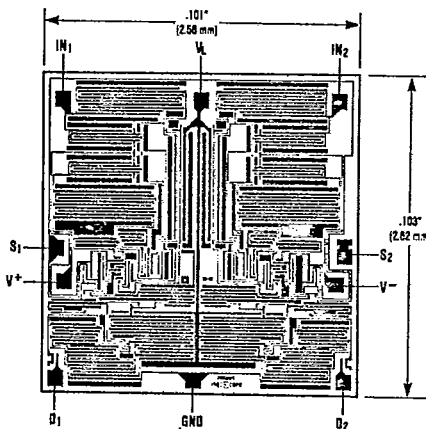
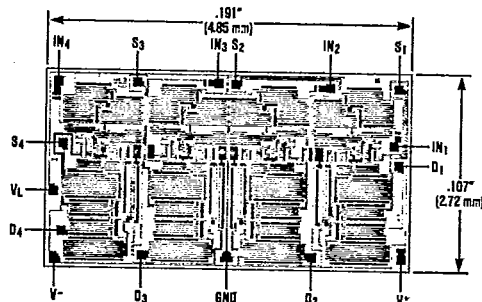


Figure 3. Cross-Coupling Rejection Test Circuit

Chip Topography



IH5341 (Dual SPST)



IH5352 (Quad SPST)

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