

# Low-Voltage, CMOS Analog Multiplexers/Switches

## ELECTRICAL CHARACTERISTICS—Dual Supplies (continued)

(V+ = +4.5V to +5.5V, V- = -4.5V to -5.5V, TA = TMIN to TMAX, unless otherwise noted. Typical values are at TA = +25°C.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP (Note 2)	MAX	UNITS	
<b>DIGITAL I/O</b>							
ADD, INH Input Logic Threshold High	V <sub>IH</sub>		C, E, M	2.4		V	
ADD, INH Input Logic Threshold Low	V <sub>IL</sub>		C, E, M		0.8	V	
ADD, INH Input Current Logic High or Low	I <sub>IH</sub> , I <sub>IL</sub>	V <sub>ADD</sub> , V <sub>INH</sub> = V+, 0V	C, E, M	-1	0.03	1	μA
<b>SWITCH DYNAMIC CHARACTERISTICS</b>							
Turn-On Time (Note 6)	t <sub>ON</sub>	Figure 3	TA = +25°C	50	175	ns	
			C, E, M		225		
Turn-Off Time (Note 6)	t <sub>OFF</sub>	Figure 3	TA = +25°C	40	150	ns	
			C, E, M		200		
Transition Time	t <sub>TRANS</sub>	Figure 2	TA = +25°C	75	250	ns	
Break-Before-Make Delay	t <sub>OPEN</sub>	Figure 4	TA = +25°C	2	10	ns	
Charge Injection (Note 6)	Q	C <sub>L</sub> = 1nF, R <sub>S</sub> = 0Ω, V <sub>NO</sub> = 0V, Figure 5	TA = +25°C	2	10	pC	
NO Off-Capacitance	C <sub>NO(OFF)</sub>	V <sub>NO</sub> = GND, f = 1MHz, Figure 7	TA = +25°C	2		pF	
COM Off-Capacitance	C <sub>COM(OFF)</sub>	V <sub>COM</sub> = GND, f = 1MHz, Figure 7	TA = +25°C	2		pF	
Switch On-Capacitance	C <sub>(ON)</sub>	V <sub>COM</sub> = V <sub>NO</sub> = GND, f = 1MHz, Figure 7	TA = +25°C	8		pF	
Off-Isolation	V <sub>ISO</sub>	C <sub>L</sub> = 15pF, R <sub>L</sub> = 50Ω, f = 100kHz, V <sub>NO</sub> = 1V <sub>RMS</sub> , Figure 6	TA = +25°C	<-90		dB	
Channel-to-Channel Crosstalk	V <sub>CT</sub>	C <sub>L</sub> = 15pF, R <sub>L</sub> = 50Ω, f = 100kHz, V <sub>NO</sub> = 1V <sub>RMS</sub> , Figure 6	TA = +25°C	<-90		dB	
<b>POWER SUPPLY</b>							
Power-Supply Range	V+, V-		C, E, M	±2.7	±8	V	
V+ Supply Current	I+	INH = ADD = 0V or V+	TA = +25°C	-1	0.1	1	μA
			C, E, M			10	
V- Supply Current	I-	INH = ADD = 0V or V+	TA = +25°C	-1	0.1	1	μA
			C, E, M			-10	

**Note 2:** The algebraic convention is used in this data sheet; the most negative value is shown in the minimum column.

**Note 3:**  $\Delta R_{ON} = R_{ON(MAX)} - R_{ON(MIN)}$ .

**Note 4:** Flatness is defined as the difference between the maximum and minimum value of on-resistance as measured over the specified analog signal ranges; i.e., V<sub>NO</sub> = 3V to 0V and 0V to -3V.

**Note 5:** Leakage parameters are 100% tested at maximum-rated hot operating temperature, and guaranteed by correlation at TA = +25°C.

**Note 6:** Guaranteed by design, not production tested.