

**TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - a.c. PARAMETERS**

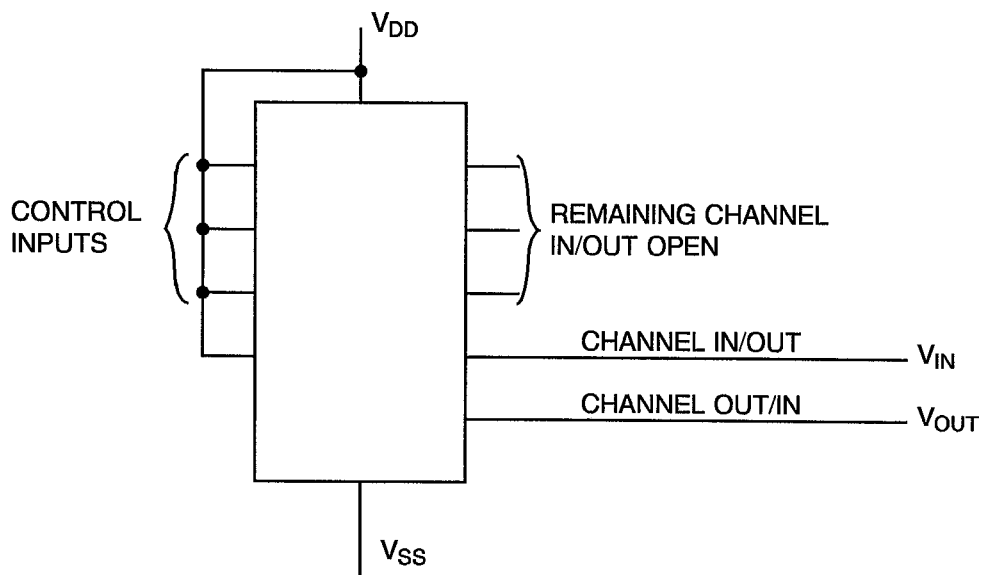
NO.	CHARACTERISTICS	SYMBOL	TEST METHOD MIL-STD 883	TEST FIG.	TEST CONDITIONS (PINS UNDER TEST D/F = DIP AND FP C = CCP)	LIMITS		UNIT
						MIN	MAX	
208 to 211	Input Capacitance (Control)	$C_{IN}$	3012	4(m)	$V_{IN}$ (Not Under Test) = 0Vdc $V_{DD} = V_{SS} = 0Vdc$ Note 5 (Pins D/F 5-6-12-13) (Pins C 7-9-17-19)	-	7.5	pF
212 to 215	Channel Capacitance (Input)	$C_{INC}$	3012	4(n)	$V_{DD} = V_{SS} = 0Vdc$ Note 5 (Pins D/F 1-4-8-11) (Pins C 2-6-12-16)	-	7.5	pF
216 to 219	Channel Capacitance (Output)	$C_{OC}$	3012	4(o)	$V_{DD} = V_{SS} = 0Vdc$ Note 5 (Pins D/F 2-3-9-10) (Pins C 4-5-14-15)	-	7.5	pF
220	Propagation Delay Signal IN to Signal OUT (Channel turned ON)	$t_{PLH1}$	3003	4(p)	$V_{IN}$ (Under Test) = Pulse Generator $V_{DD} = 5Vdc, V_{SS} = 0Vdc$ Note 6 <u>Pins D/F</u> <u>Pins C</u> 1 to 2        2 to 4	-	100	ns
221	Propagation Delay Signal IN to Signal OUT (Channel turned ON)	$t_{PHL}$	3003	4(p)	$V_{IN}$ (Under Test) = Pulse Generator $V_{DD} = 5Vdc, V_{SS} = 0Vdc$ Note 6 <u>Pins D/F</u> <u>Pins C</u> 1 to 2        2 to 4	-	100	ns
222	Propagation Delay Time Control to Switch ON	$t_{PLH2}$	3003	4(q)	$V_{IN}$ (Under Test) = Pulse Generator $V_{DD} = 5Vdc, V_{SS} = 0Vdc$ Note 6 <u>Pins D/F</u> <u>Pins C</u> 13 to 2       19 to 4	-	70	ns

**NOTES:** See Page 24.

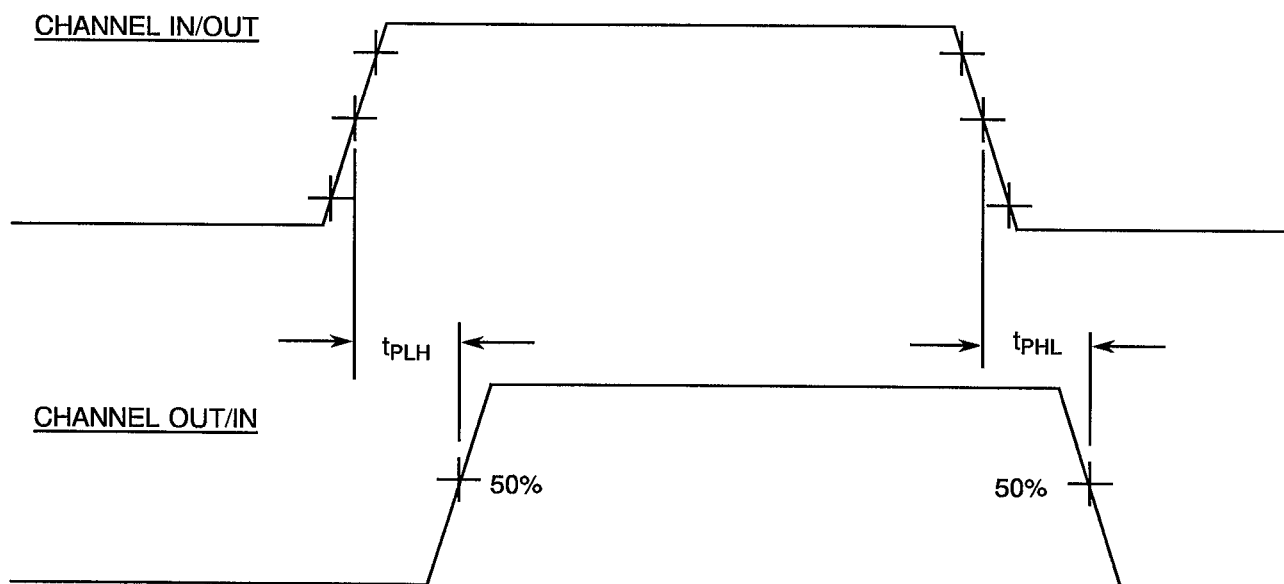


**FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS (CONTINUED)**

**FIGURE 4(p) - PROPAGATION DELAY, SIGNAL IN TO SIGNAL OUT**



VOLTAGE WAVEFORMS

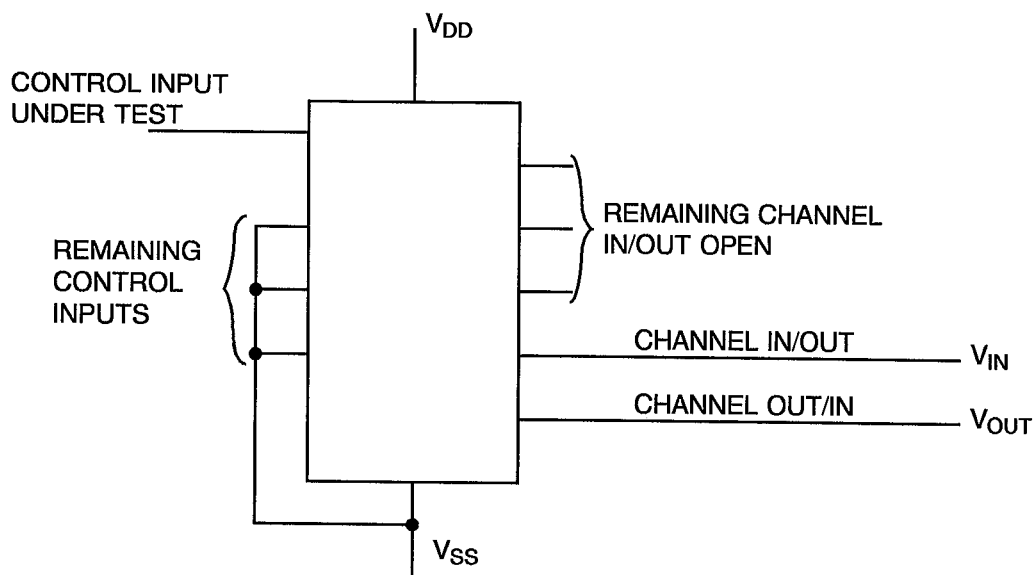


**NOTES** 1. Pulse Generator -  $V_P = 0$  to  $V_{DD}$ ,  $t_r$  and  $t_f \leq 15\text{ns}$ ,  $f = 500\text{KHz}$ .

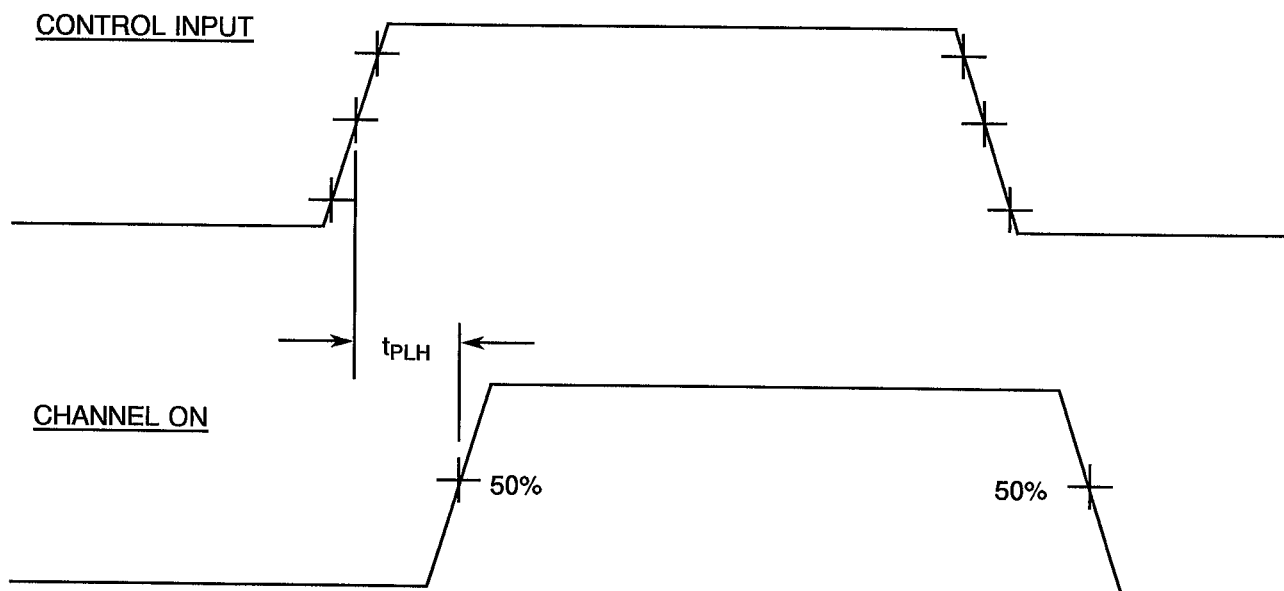


**FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS (CONTINUED)**

**FIGURE 4(q) - PROPAGATION DELAY, CONTROL TO SWITCH ON**



VOLTAGE WAVEFORMS



**NOTES** 1. Pulse Generator -  $V_P = 0$  to  $V_{DD}$ ,  $t_r$  and  $t_f \leq 15\text{ns}$ ,  $f = 500\text{KHz}$ .

Characteristics	Symbols	MIL-STD-883 Test Method	Test Conditions Note 1	Limits		Units
				Min	Max	
Channel Capacitance, B Outputs/Inputs	C <sub>CHB</sub>	3012	V <sub>IN</sub> (Not Under Test)=0V V <sub>DD</sub> =V <sub>SS</sub> =0V f = 100 kHz to 1 MHz Note 7	-	7.5	pF
Propagation Delay Low to High, 1A to 1B	t <sub>PLH</sub>	3003	V <sub>IN</sub> (Under Test)=Pulse Generator V <sub>IN</sub> (Remaining Inputs)=Truth Table V <sub>IL</sub> =0V, V <sub>IH</sub> =5V, R <sub>L</sub> =200kΩ V <sub>DD</sub> =5V, V <sub>SS</sub> =0V Note 8	-	100	ns
Propagation Delay High to Low, 1A to 1B	t <sub>PHL</sub>	3003	V <sub>IN</sub> (Under Test)=Pulse Generator V <sub>IN</sub> (Remaining Inputs)=Truth Table V <sub>IL</sub> =0V, V <sub>IH</sub> =5V, R <sub>L</sub> =200kΩ V <sub>DD</sub> =5V, V <sub>SS</sub> =0V Note 8	-	100	ns
Output Enable Time High Impedance to High Output, 1C to 1B	t <sub>PZH</sub>	3003	V <sub>IN</sub> (Under Test)=Pulse Generator V <sub>IN</sub> (Remaining Inputs)=Truth Table V <sub>IL</sub> =0V, V <sub>IH</sub> =5V, V <sub>IN</sub> (1A)=5V, R <sub>L</sub> =1kΩ V <sub>DD</sub> =5V, V <sub>SS</sub> =0V Note 8	-	70	ns

2.3.2 High and Low Temperatures Electrical Measurements

The measurements shall be performed at T<sub>amb</sub>=+125 (+0 -5) °C and T<sub>amb</sub>=- 55(+5-0)°C.

Characteristics	Symbols	MIL-STD-883 Test Method	Test Conditions Note 1	Limits		Units
				Min	Max	
Functional Test 1	-	3014	Verify Truth Table V <sub>IL</sub> =0V, V <sub>IH</sub> =3V V <sub>DD</sub> =3V, V <sub>SS</sub> =0V Note 2	-	-	-
Functional Test 2	-	3014	Verify Truth Table V <sub>IL</sub> =0V, V <sub>IH</sub> =15V V <sub>DD</sub> =15V, V <sub>SS</sub> =0V Note 2	-	-	-

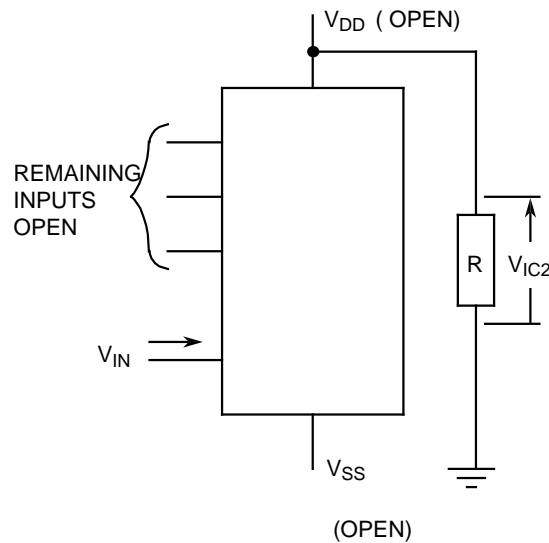
$R_{ON4}$  shall be tested with  $V_{IN}$  (A or B) = 1.5V, 3V, 7V, 7.5V, 8V, 8.5V, 9V, 10V

Channel ON Resistance shall be recorded for Channel 1A to 1B and 3A to 3B at each specified  $V_{IN}$ . Other channels may be tested go-no-go.

5. Performed as a functional test to verify for all channels  $V_{OUT}$  (B) meets the following limits with the specified input conditions  $V_{IN}$  (A):

Characteristic	Input Condi- tions	Limit	Remark
	$V_{IN}$ (A)	$V_{OUT}$ (B)	
$V_{IL1}$	5V	$\leq 0.1V$	Channel OFF
$V_{IL2}$	15V	$\leq 0.1V$	Channel OFF
$V_{IH1}$	5V	$\geq 4V$	Channel ON
$V_{IH2}$	15V	$\geq 12.5V$	Channel ON

6. Input Clamp Voltage 2 to  $V_{DD}$ ,  $V_{IC2}$ , shall be tested on each input as follows:

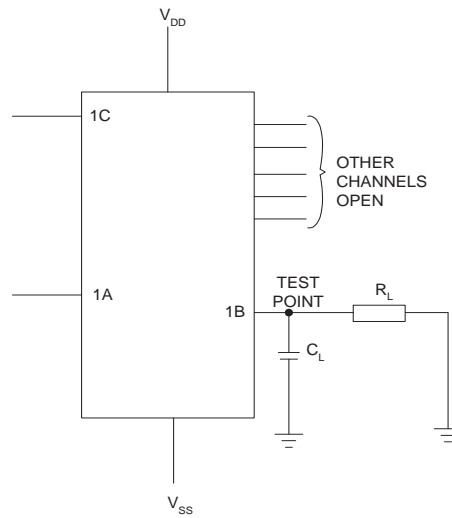


7. Guaranteed but not tested.
8. Read and record measurements shall be performed on a sample of 32 components with 0 failures permitted.

The pulse generator shall have the following characteristics:

$V_{GEN} = 0$  to  $V_{DD}$ ;  $f = 500kHz$ ;  $t_r$  and  $t_f \leq 15$  ns (10% to 90%); duty cycle = 50%. Output load capacitance  $C_L = 50pF \pm 5\%$  including scope probe, wiring and stray capacitance without component in the test fixture. Channel bias resistance  $R_L =$  as specified.

Propagation delay times shall be measured as follows:



**VOLTAGE WAVEFORMS**

