



DOCUMENT CHANGE REQUEST

DCR number 160 Changes required for: General

Date: 2005/03/08

Date sent: 2005/03/08

Originator: Steve Thacker

Organisation: ESA/ESTEC

Status: IMPLEMENTED

Title: CMOS Dual 1-of-4 Decoder/Demultiplexer, based on type 4555B

Number: 9408/011

Issue: 2

Other documents affected:

9408/025-1

Page:

a) Page 35 Figure 4(n) note 1

b) Page 38 Table 5(c) No.7

See attached mark-up sheets (new & original) for details

Paragraph:

a) Page 35 Figure 4(n) note 1

b) Page 38 Table 5(c) No.7

See attached mark-up sheets (new & original) for details

Original wording:

Proposed wording:

a) Amend input conditions for propagation delay tests as per mark-up attached:

tr & tf < or = 20ns;

delete RI=50ohm & tp=1us

b) Amend fGEN2 input condition for burn-in to be 25kHz

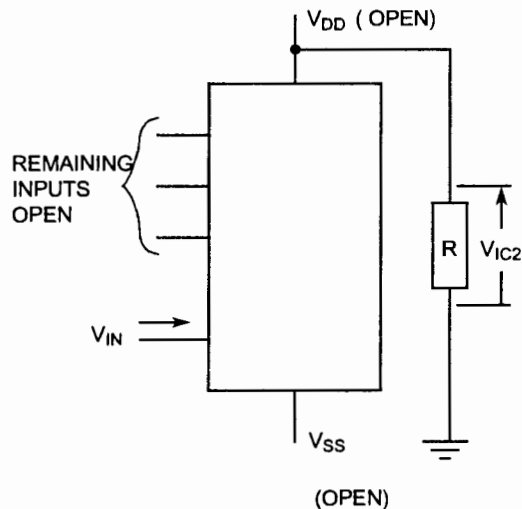
Justification:

Error in original specifications.

Note - Both devices (4555B & 4556B) are from the same sub-family within the 4000B series and should have the same test conditions.

Attachments:
DCR_Attachment_8_March_2005.pdf, null
Modifications:
N/A
Approval signature:

Date signed:
2005-03-08



6. Guaranteed but not tested.
7. 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} ; $f = 500\text{kHz}$; t_r and $t_f \leq 15 \text{ ns}$ (10% to 90%); duty cycle = 50%. Output load capacitance $C_L = 50\text{pF} \pm 5\%$ including scope probe, wiring and stray capacitance without component in the test fixture. Output load resistance $R_L = 200\text{k}\Omega$.

Propagation delay shall be measured referenced to the 50% input and output voltages.

Transition time shall be measured referenced to the 10% and 90% output voltage.

2.4

PARAMETER DRIFT VALUES

Unless otherwise specified, the measurements shall be performed at $T_{amb} = +22 \pm 3^\circ\text{C}$.

The test methods and test conditions shall be as per the corresponding test defined in Room Temperature Electrical Measurements.

The drift values (Δ) shall not be exceeded for each characteristic specified. The corresponding absolute limit values for each characteristic shall not be exceeded.



2.7

POWER BURN-IN CONDITIONS

Characteristics	Symbols	Test Conditions	Units
Ambient Temperature	T_{amb}	+125 (+0 -5)	°C
Outputs $\bar{Q}$ (all gates)	V_{OUT}	$V_{DD}/2$	V
Inputs $\bar{E}$ (all gates)	V_{IN}	V_{SS}	V
Inputs A (all gates)	V_{IN}	V_{GEN1}	V
Inputs B (all gates)	V_{IN}	V_{GEN2}	V
Pulse Voltage	V_{GEN}	0V to V_{DD}	V
Pulse Frequency Square Wave	f_{GEN1} f_{GEN2}	50k 25k 50% Duty Cycle	Hz
Positive Supply Voltage	V_{DD}	15 (+0 -0.5)	V
Negative Supply Voltage	V_{SS}	0	V

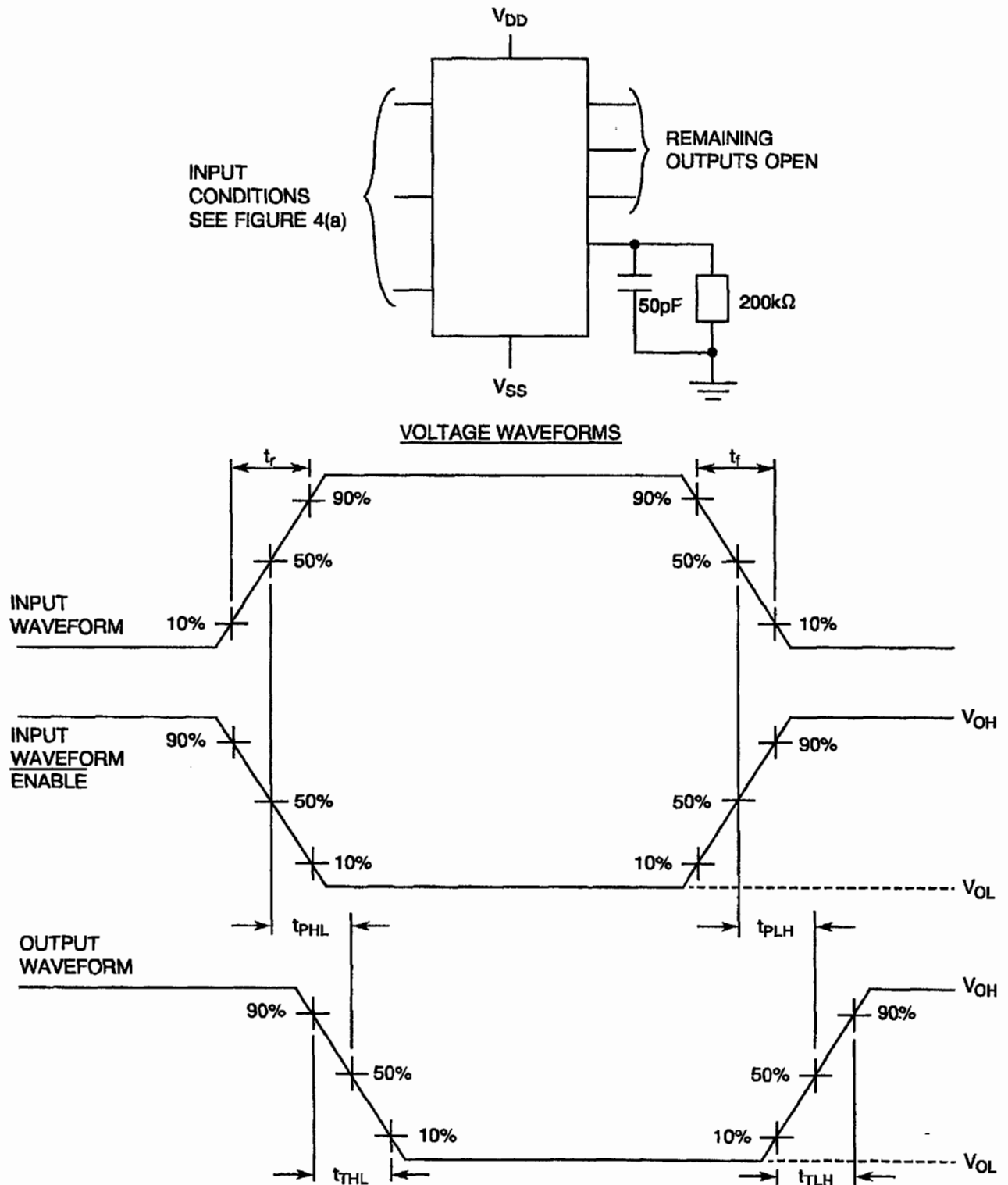
NOTES:

1. Input Protection Resistor = Output Load = 2k Ω min to 47k Ω max.

2.8

OPERATING LIFE CONDITIONS

The conditions shall be as specified for Power Burn-in.

**FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS (CONTINUED)****FIGURE 4(n) - PROPAGATION DELAY AND TRANSITION TIME****NOTES**

1. Pulse Generator - $V_P = 0$ to V_{DD} , t_r and $t_f \leq 20\text{ns}$, $f = 500\text{kHz}$, $R_I = 50\Omega$, $t_p = 1\mu\text{s}$

deleted

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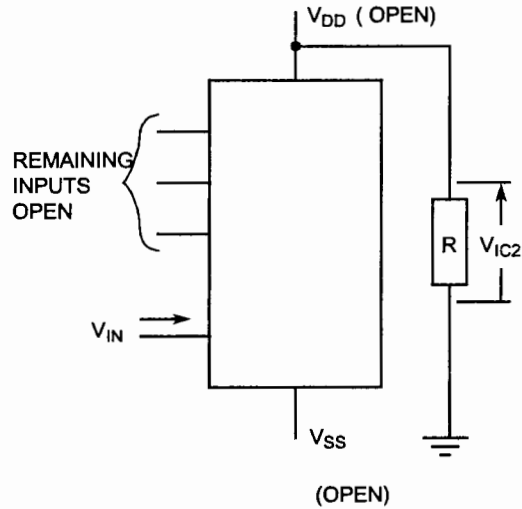
TABLE 5(c) - CONDITIONS FOR BURN-IN DYNAMIC

No.	CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT
1	Ambient Temperature	T_{amb}	+ 125 (+ 0 – 5)	°C
2	Outputs - (Pins D/F 4-5-6-7-9-10-11-12) (Pins C 5-6-7-9-11-12-14-15)	V_{OUT}	$V_{DD}/2$	Vdc
3	Inputs - (Pins D/F 2-14) (Pins C 2-17)	V_{IN}	V_{GEN1}	Vac
4	Inputs - (Pins D/F 3-13) (Pins C 4-16)	V_{IN}	V_{GEN2}	Vac
5	Inputs - (Pins D/F 1-15) (Pins C 1-19)	V_{IN}	Ground	Vdc
6	Pulse Voltage	V_{GEN}	0 to V_{DD}	Vac
7	Pulse Frequency Square Wave	f	GEN1 50k, 50% Duty Cycle	Hz
			GEN2 20k, 50% Duty Cycle	
8	Positive Supply Voltage (Pin D/F 16) (Pin C 20)	V_{DD}	15	Vdc
9	Negative Supply Voltage (Pin D/F 8) (Pin C 10)	V_{SS}	Ground	Vdc

NOTES

1. Input Load = Output Load = 2k Ω minimum to 47k Ω maximum.

25k



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$V_{GEN} = 0$ to V_{DD} ; $f = 500\text{kHz}$; t_r and $t_f \leq 15 \text{ ns}$ (10% to 90%); duty cycle = 50%. Output load capacitance $C_L = 50\text{pF} \pm 5\%$ including scope probe, wiring and stray capacitance without component in the test fixture. Output load resistance $R_L = 200\text{k}\Omega$.

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