DOCUMENT CHANGE REQUEST

DCR number 160	Changes required for: General	Originator: Steve Thacker
Date: 2005/03/08	Date sent: 2005/03/08	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:

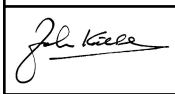
Proposed wording:

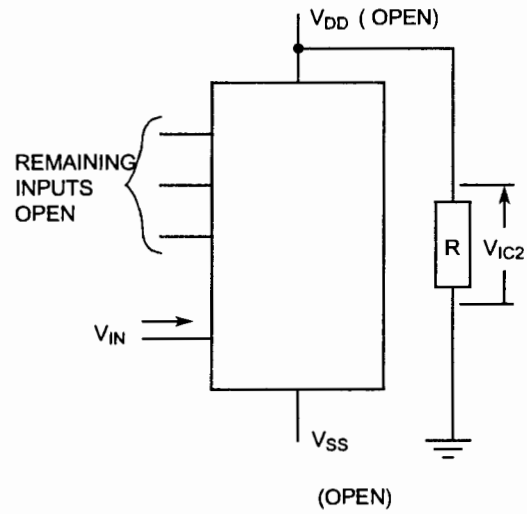
a) Amend input conditions for propagation delay tests as per mark-up attached:
tr & tf < or = 20ns;
delete RI=50ohm & tp=1us

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 = 500kHz; tr and t_f ≤~~15~~ 20ns ns (10% to ~~90~~%); duty cycle = 50%. Output load capacitance C_L = 50pF ±5% including scope probe, wiring and stray capacitance without component in the test fixture. Output load resistance R_L = ~~200kΩ~~.

   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 ±3°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.

New version per DCR

2.7 POWER BURN-IN CONDITIONS

Characteristics	Symbols	Test Conditions	Units
Ambient Temperature	T_{amb}	+125 (+0 -5)	°C
Outputs $\overline{Q}$ (all gates)	V_{OUT}	$V_{DD}/2$	V
Inputs $\overline{E}$ (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 = 2kΩ min to 47kΩ max.

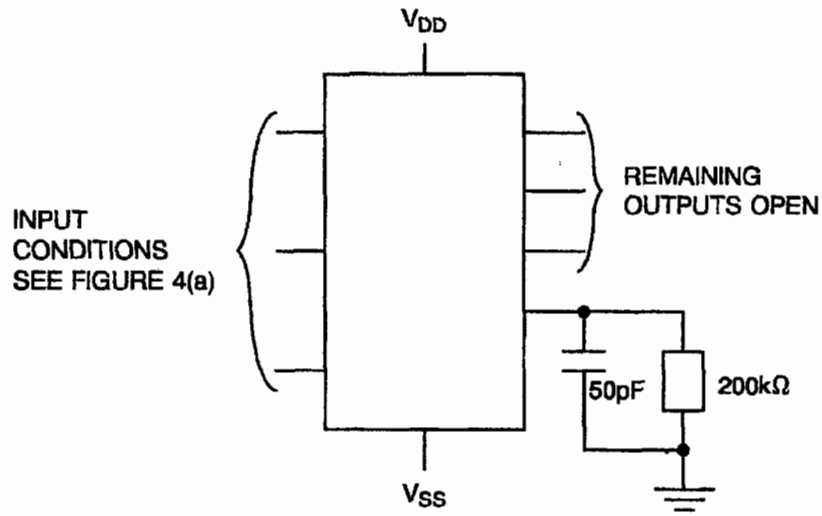
2.8 OPERATING LIFE CONDITIONS

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

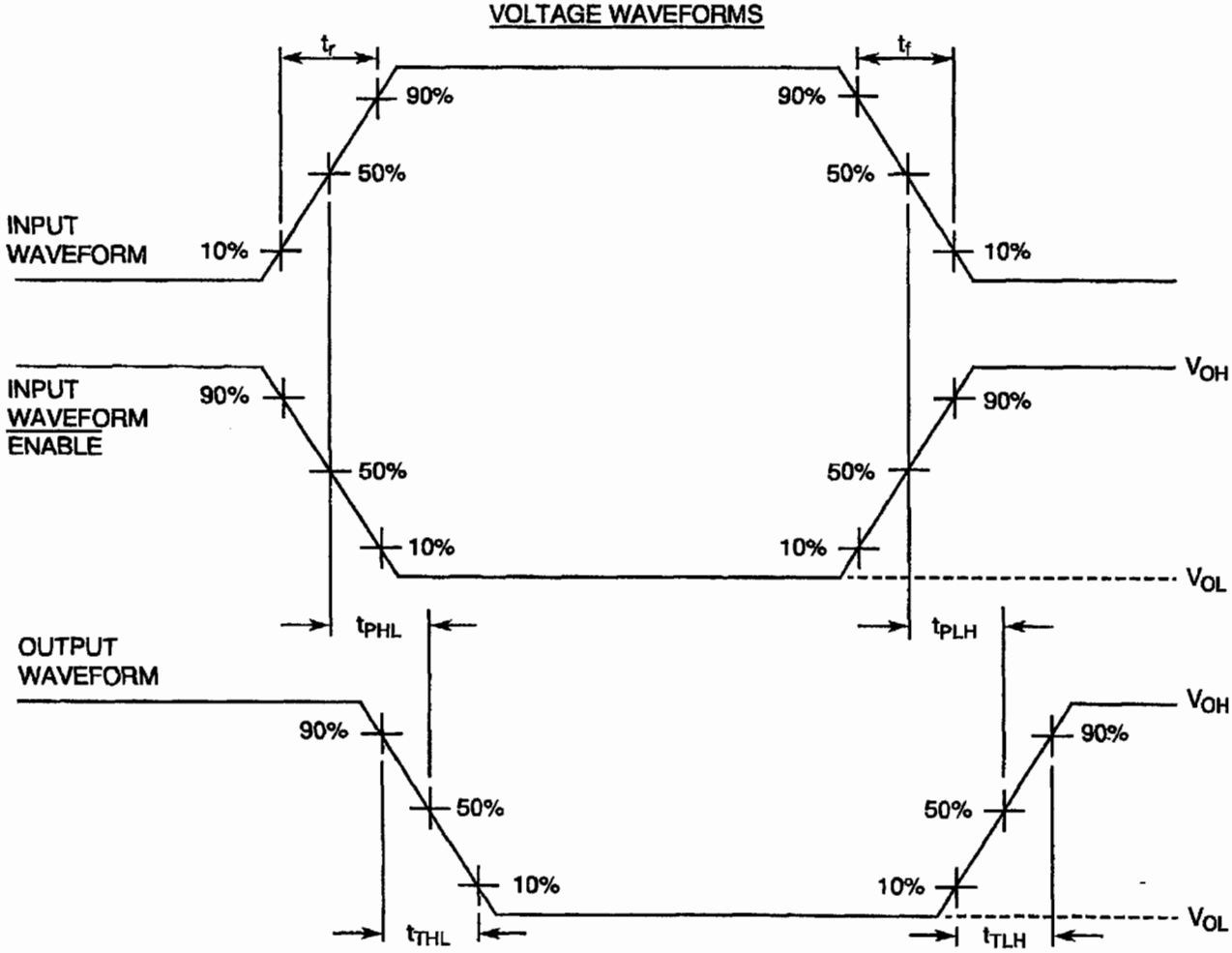
original spec

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS (CONTINUED)

FIGURE 4(n) - PROPAGATION DELAY AND TRANSITION TIME



VOLTAGE WAVEFORMS



NOTES

1. Pulse Generator - V_P = 0 to V_{DD}, t_r and $t_f \leq$ 20ns, f = 500kHz, R_l = 50Ω, t_p = 1µs.

deleted

orginal spec

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

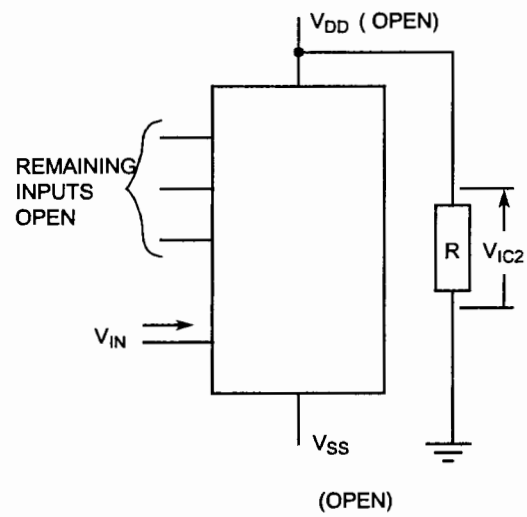
No.	CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT
1	Ambient Temperature	T_{amb}	+125 (+0−5)	°C
2	Outputs - (Pins D/F 4-5-6-7-9-10-11-12) (Pins C 5-6-7-9-11-12-14-15)	V_{OUT}	$V_{DD/2}$	Vdc
3	Inputs - (Pins D/F 2-14) (Pins C 2-17)	V_{IN}	V_{GEN1}	Vac
4	Inputs - (Pins D/F 3-13) (Pins C 4-16)	V_{IN}	V_{GEN2}	Vac
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
		f GEN2	20k, 50% Duty Cycle	Hz
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 = 2kΩ minimum to 47kΩ maximum.

25k

MARK-UP S.Thakker 8.3.2005.



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