



DOCUMENT CHANGE REQUEST

DCR number 126 Changes required for: General
Date: 2004/06/15 Date sent: 2004/06/15
Status: IMPLEMENTED

Originator: S Thacker
Organisation: ESA/ESTEC

Title: CMOS Analogue Multiplexer/Demultiplexer, based on type 4051B

Number: 9202/047 Issue: 2

Other documents affected:

Page:

Para 2.3.1 Room Temperature Electrical Measurements - page 17, 18
Para 2.3.3 Notes to Electrical Measurement Tables - page 23

Paragraph:

Para 2.3.1 Room Temperature Electrical Measurements - page 17, 18
Para 2.3.3 Notes to Electrical Measurement Tables - page 23

Original wording:

Proposed wording:

tPLH2 & tPHL2 amended as per attached mark-up sheets.
Other timing parameters renamed as per mark-up sheets

Justification:

tPLH2 & tPHL2 were incorrctly specified

Attachments:

DCR_9202047_markup.pdf, null

Modifications:

N/A

Approval signature:

Date signed:

2004-06-15

MARK-UP FOR DCR,
S.T.
15.6.2004



Pages 1 to 28

INTEGRATED CIRCUITS, SILICON MONOLITHIC, CMOS
ANALOGUE MULTIPLEXER/DEMULTIPLEXER
(SINGLE 8-CHANNEL)

BASED ON TYPE 4051B

ESCC Detail Specification No. 9202/047

3 Issue 7	June April 2004
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Document Custodian: European Space Agency - see <https://escies.org>

Characteristics	Symbols	MIL-STD-883 Test Method	Test Conditions Note 1	Limits		Units
				Min	Max	
Input Clamp Voltage 2, to V _{DD} , Control Inputs	V _{IC2}	-	V _{IN} (Under Test)=6V R=30kΩ, V _{SS} =Open All Other Pins Open Note 6	3	-	V
Input Capacitance, Control Inputs	C _{IN}	3012	V _{IN} (Not Under Test)=0V V _{DD} =V _{SS} =V _{EE} =0V f = 100 kHz to 1 MHz Note 7	-	7.5	pF
Channel Capacitance, CHn	C _{CH}	3012	V _{IN} (Not Under Test)=0V V _{DD} =V _{SS} =V _{EE} =0V f = 100 kHz to 1 MHz Note 7	-	7.5	pF
Channel Capacitance, COM	C _{COM}	3012	V _{IN} (Not Under Test)=0V V _{DD} =V _{SS} =V _{EE} =0V f = 100 kHz to 1 MHz Note 7	-	7.5	pF
Propagation Delay Low to High X COM to CH0	t _{PLH} X	3003	V _{IN} (COM)=Pulse Generator V _{IN} (Remaining Inputs)=Truth Table V _{IL} =0V, V _{IH} =5V, R _L =200kΩ V _{DD} =5V, V _{SS} =V _{EE} =0V Note 8	-	40	ns
Propagation Delay High to Low X COM to CH0	t _{PHL} X	3003	V _{IN} (COM)=Pulse Generator V _{IN} (Remaining Inputs)=Truth Table V _{IL} =0V, V _{IH} =5V, R _L =200kΩ V _{DD} =5V, V _{SS} =V _{EE} =0V Note 8	-	40	ns
Propagation Delay Low to High 2, A to COM (Channel ON)	t_{PLH2} t _{PZH1}	3003	V _{IN} (A)=Pulse Generator V _{IN} (Remaining Inputs)=Truth Table V _{IL} =0V, V _{IH} =5V, V _{IN} (CH)=0V and 5V and Open R _L =10kΩ V _{DD} =5V, V _{SS} =V _{EE} =0V Note 8	-	670	ns

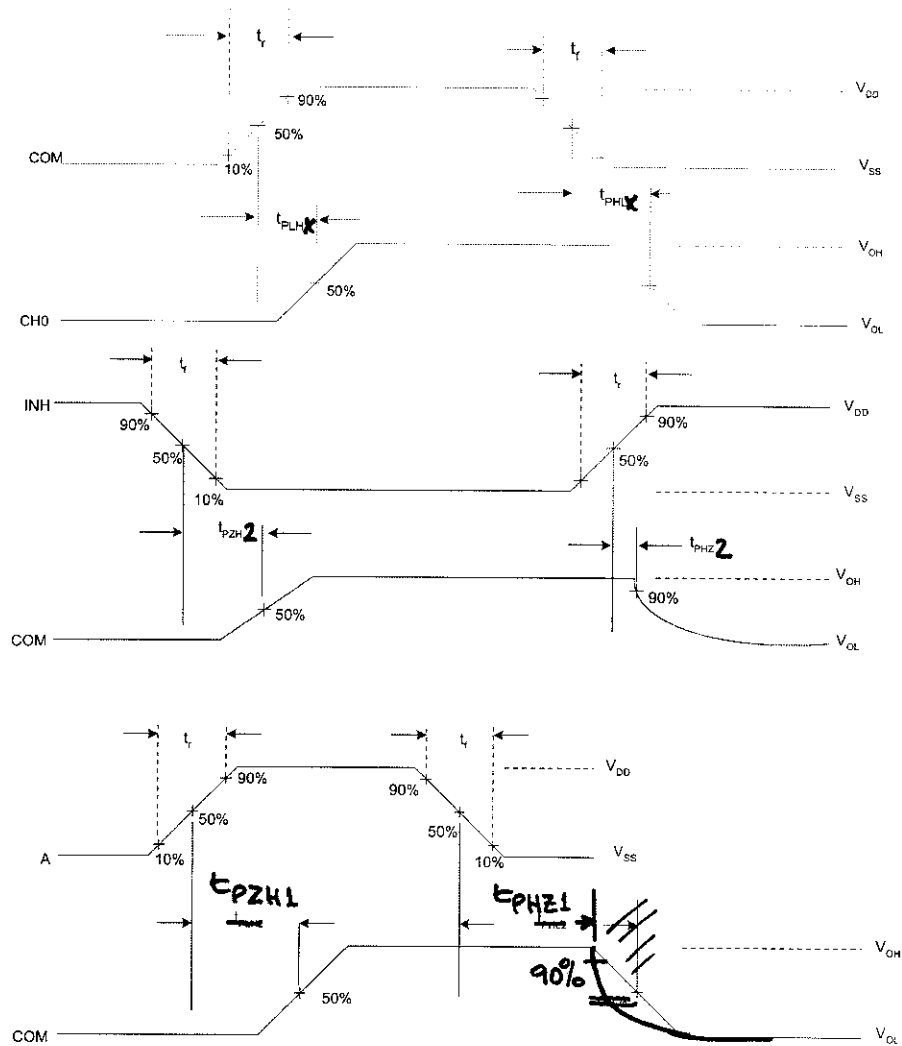
Output Enable Time High Impedance to High Output 1, A to COM

Characteristics	Symbols	MIL-STD-883 Test Method	Test Conditions Note 1	Limits		Units
				Min	Max	
<p><i>Output Disable Time High Output to High Impedance 1, A to COM</i></p> Propagation Delay High to Low 2, A to COM (Channel ON)	t_{PHL2} t_{PHZ1}	3003	$V_{IN}(A)=$ Pulse Generator V_{IN} (Remaining Inputs)=Truth Table $V_{IL}=0V, V_{IH}=5V,$ $V_{IN}(CH)=0V$ and $5V$ and Open $R_L=10k\Omega$ 300Ω $V_{DD}=5V, V_{SS}=V_{EE}=0V$ Note 8	-	670	ns
Output Enable Time High Impedance to High Output 2, INH to COM	t_{PZH2}	3003	$V_{IN}(INH)=$ Pulse Generator V_{IN} (Remaining Inputs)=Truth Table $V_{IL}=0V, V_{IH}=5V,$ $V_{IN}(CH)=5V, R_L=10k\Omega$ $V_{DD}=5V, V_{SS}=V_{EE}=0V$ Note 8	-	400	ns
Output Disable Time High Output to High Impedance 2, INH to COM	t_{PHZ2}	3003	$V_{IN}(INH)=$ Pulse Generator V_{IN} (Remaining Inputs)=Truth Table $V_{IL}=0V, V_{IH}=5V,$ $V_{IN}(CH)=5V, R_L=300\Omega$ $V_{DD}=5V, V_{SS}=V_{EE}=0V$ Note 8	-	400	ns

2.3.2 High and Low Temperatures Electrical Measurements

The measurements shall be performed at $T_{amb}=+125 (+0 -5) ^\circ C$ and $T_{amb}=- 55(+5-0)^\circ C$.

Characteristics	Symbols	MIL-STD-883 Test Method	Test Conditions Note 1	Limits		Units
				Min	Max	
Functional Test 1	-	3014	Verify Truth Table $V_{IL}=0V, V_{IH}=3V$ $V_{DD}=3V,$ $V_{SS}=V_{EE}=0V$ Note 2	-	-	-
Functional Test 2	-	3014	Verify Truth Table $V_{IL}=0V, V_{IH}=15V$ $V_{DD}=15V,$ $V_{SS}=V_{EE}=0V$ Note 2	-	-	-
Quiescent Current	I_{DD}	3005	$V_{IL}=0V, V_{IH}=15V$ $V_{DD}=15V,$ $V_{SS}=V_{EE}=0V$ Note 3 $T_{amb}=+125^\circ C$ $T_{amb}=- 55^\circ C$	-	15	μA
				-	0.5	



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.