

SIGNETICS DIGITAL 54/74 TTL SERIES – S54157 • N74157 • S54158 • N74158

RECOMMENDED OPERATING CONDITIONS

	S54157/58			N74157/58			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
Supply Voltage V_{CC}	4.5	5	5.5	4.75	5	5.25	V
Normalized Fan-Out from each Output, N			20			20	
High Logic Level			10			10	
Low Logic Level			10			10	
Operating Free-Air Temperature, T_A	-55	25	125	0	25	70	°C

ELECTRICAL CHARACTERISTICS (over operating free-air temperature range unless otherwise noted)

PARAMETER	TEST CONDITIONS*	S54157/58			N74157/58			UNIT
		MIN	TYP**	MAX	MIN	TYP**	MAX	
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage			0.8			0.8	V
V_I	Input clamp voltage			-1.5			-1.5	V
V_{OH}	High-level output voltage	2.4			2.4			V
V_{OL}	Low-level output voltage			0.4			0.4	V
I_I	Input current at maximum input voltage			1			1	mA
I_{IH}	High-level input current			40			40	μA
I_{IL}	Low-level input current			-1.6			-1.6	mA
I_{OS}	Short-circuit output current†	-20		-55	-18		-55	mA
I_{CC}	Supply current		30	48		30	48	mA

SWITCHING CHARACTERISTICS, $V_{CC} = 5V$, $T_A = 25^\circ C$, $N = 10$

PARAMETER	FROM	TO	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PHL}	Data	Output	$C_L = 15pF$, $R_L = 400$		9	14	ns
t_{PLH}	Data	Output			9	14	ns
t_{PHL}	Enable	Any Output			14	21	ns
t_{PLH}	Enable	Any Output			13	20	ns
t_{PHL}	Select	Any Output			18	27	ns
t_{PLH}	Select	Any Output			15	23	ns

* For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.

** All typical values are at $V_{CC} = 5V$, $T_A = 25^\circ C$.

† Not more than one output should be shorted at a time.