

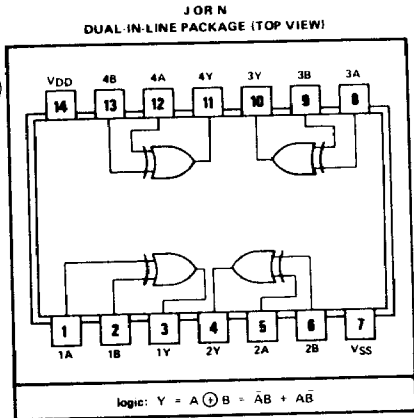
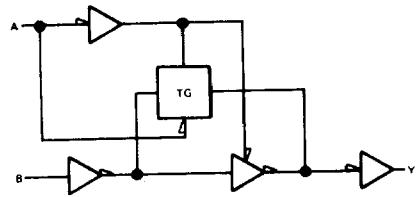
**CMOS
LOGIC CIRCUITS**

**TYPES TF4507A, TP4507A
QUAD EXCLUSIVE-OR GATES**

SEPTEMBER 1975

Designed to be Interchangeable with Motorola MC14507 and RCA CD4030A

functional block diagram (each gate)

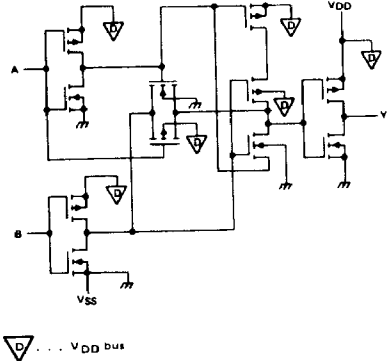


FUNCTION TABLE

INPUTS		OUTPUT
A	B	Y
L	L	L
H	L	H
L	H	H
H	H	L

H = high level, L = low level

schematic (each gate)



specifications

MAXIMUM RATINGS	RECOMMENDED OPERATING CONDITIONS	ELECTRICAL CHARACTERISTICS
Page 62	Page 62	Page 63, group 2, and on following page

TYPES TF4507A, TP4507A QUAD EXCLUSIVE-OR GATES

electrical characteristics

V_{DD} = 5 V and 10 V

PARAMETER	TEST CONDITIONS†	TF4507A				TP4507A				UNIT
		V _{DD} = 5 V		V _{DD} = 10 V		V _{DD} = 5 V		V _{DD} = 10 V		
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
I _{OH} High-level output current	V _{IH} = V _{DD} , V _{IL} = 0, V _O = V _{OH} min	T _A = MIN	-0.95	-0.95	-0.45	-0.45	-0.32	-0.32	mA	
		T _A = 25°C	-0.65	-0.65	-0.25	-0.25	-0.25	-0.25		
		T _A = MAX	-0.45	-0.45	-0.25	-0.25	-0.25	-0.25		
I _{OL} Low-level output current	V _{IH} = V _{DD} , V _{IL} = 0, V _O = V _{OL} max	T _A = MIN	0.75	1.5	0.35	0.7	0.6	0.6	mA	
		T _A = 25°C	0.6	1.2	0.3	0.6	0.5	0.5		
		T _A = MAX	0.45	0.9	0.25	0.5	0.5	0.5		
I _{DD} or -I _{SS} Quiescent supply current	V _I = V _{DD} or 0, No load	T _A = MIN or 25°C	0.5	1	5	10			μA	
		T _A = MAX	30	60	70	140				

V_{DD} = 15 V

PARAMETER	TEST CONDITIONS†	TF4507A		TP4507A		UNIT
		MIN	MAX	MIN	MAX	
I _{DD} or -I _{SS} Quiescent supply current	V _I = V _{DD} or 0, T _A = MIN or 25°C		3		30	μA
	No load T _A = MAX		180		420	

† T_A = MIN or MAX refers to the respective values of temperature specified under recommended operating conditions.

switching characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	TF4507A		TP4507A		UNIT
		V _{DD} = 5 V		V _{DD} = 10 V		
		MIN	MAX	MIN	MAX	
t _{PLH} Propagation delay time, low-to-high-level output	C _L = 50 pF §, R _L = 200 kΩ, See Note 1	350	175	475	250	ns
		t _{PHL} Propagation delay time, high-to-low-level output	350	175	475	250
t _{TLH} Transition time, low-to-high-level output			300	150	450	225
		t _{THL} Transition time, high-to-low-level output	300	150	450	225

§ With a 15-pF load, these devices switch with times similar to those of the Motorola MC14507 and RCA CD4030A.
NOTE 1: See load circuit and voltage waveforms on page 170.