

MOTOROLA INTEGRATED CIRCUITS
TTL I 400 - 500 Series

Rating	Value	Unit
Supply Voltage - Continuous	+8.0	Vdc
Supply Operating Voltage Range	4.5 to 6.0	Vdc
Input Voltage - V_{in}	+5.5	Vdc
Output Voltage - V_{out}	+5.5	Vdc
Operating Temperature Range	-55 to +125	°C
Storage Temperature Range	-65 to +150	°C
Thermal Resistance - Junction to Case (q_{JC})	0.09	°C/mW
Thermal Resistance - Junction to Ambient (q_{JA})	0.26	°C/mW

Function	Type/Pkg	Loading Factor Each Output	Propagation Delay ns typ	Power Dissipation mW typ/pkg
Dual 4-Input NAND Gate	500/C,A	15	10	30
	550/C,A	7		
Expandable 4-wide 2-2-2-3-Input AND-OR-INVERT Gate	501/C,A	15	12	30
	551/C,A	7		
8-Input NAND Gate	502/C,A	15	12	15
	552/C,A	7		
2-Wide 3-Input AND-OR-INVERT Gate with Gated Complement	503/C,A	15	11	35
	553/C,A	7		
Expandable 3-Wide 3-Input AND-OR-INVERT Gate	504/C,A	15	12	25
	554/C,A	7		
Expandable 2-Wide 4-Input AND-OR-INVERT Gate	505/C,A	15	12	20
	555/C,A	7		
Expandable 8-Input NAND Gate	506/C,A	15	18	15
	556/C,A	7		
Line Driver	507/C,A	15	25@ 1000 pF Load	60
	557/C,A	7		
Quad 2-Input NAND Gate	508/C,A	15	10	60
	558/C,A	7		
4-Wide 3-2-2-3-Input Expander for AND-OR-INVERT Gates	509/C,A	15	-	-
	559/C,A	7		
Dual 4-Input Expander for AND-OR-INVERT Gates	510/C,A	15	-	-
	560/C,A	7		
Dual 4-Input Expander for NAND Gates	511/C,A	15	-	-
	561/C,A	7		
Triple 3-Input NAND Gate	512/C,A	15	10	45
	562/C,A	7		

Function	Type/Pkg	Loading Factor Each Output	Propagation Delay ns typ	Power Dissipation mW typ/pkg
R-S Flip-Flop	513/C,A	15	$t_{on} = 15$	30
	563/C,A	7	$t_{off} = 20$	
Gated R-S Flip-Flop	514/C,A	15	$t_{on} = 7.5$	30
	564/C,A	7	$t_{off} = 20$	
AND J-K Flip-Flop	515/C,A	15	$t_{on} = 25$	40
	565/C,A	7	$t_{off} = 13$	
OR J-K Flip-Flop	516/C,A	15	$t_{on} = 25$	50
	566/C,A	7	$t_{off} = 13$	
Triple 2-Input Bus Driver	519/C,A	-	50/15	54
	569/C,A			
Expandable Dual 2-Wide 2-Input AND-OR-INVERT Gate	520/C,A	15	12	40
	570/C,A	7		
AC Coupled R-S Flip-Flop	521/C,A	15	18	30
	571/C,A	7		
Dual Type D Flip-Flop	522/C,A	15	16	84
	572/C,A	7		
Dual J-K Flip-Flop (Separate Clock)	523/C,A	16	$t_{on} = 12$	110
	573/C,A	8	$t_{off} = 10$	
Dual J-K Flip-Flop (Common Clock)	524/C,A	16	$t_{on} = 12$	110
	574/C,A	8	$t_{off} = 10$	
Hex Inverter	525/C,A	15	10	90
	575/C,A	7		
Dual 3-Input Pulse Shaper/Delay AND Gate	526/C,A	16	15	60
	576/C,A	8		
Expandable Dual 4-Input AND Gate	527/C,A	15	10	38
	577/C,A	7		
Dual 2-Wide 2-3-Input OR Expander	528/C,A	-	-	15
	578/C,A			
Hex Inverter	529/C,A	15	10	90
	579/C,A	7		