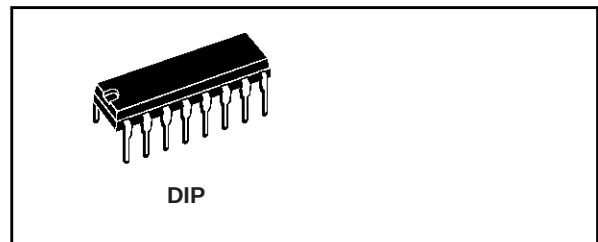




QUAD AND/OR SELECT GATE

- MEDIUM-SPEED OPERATION
 $t_{PD} = 60\text{ns}$ (Typ.) at $V_{DD} = 10\text{V}$
- QUIESCENT CURRENT SPECIFIED UP TO 20V
- STANDARDIZED SYMMETRICAL OUTPUT CHARACTERISTICS
- 5V, 10V AND 15V PARAMETRIC RATINGS
- INPUT LEAKAGE CURRENT
 $I_I = 100\text{nA}$ (MAX) AT $V_{DD} = 18\text{V}$ $T_A = 25^\circ\text{C}$
- 100% TESTED FOR QUIESCENT CURRENT
- MEETS ALL REQUIREMENTS OF JEDEC JESD13B "STANDARD SPECIFICATIONS FOR DESCRIPTION OF B SERIES CMOS DEVICES"



ORDER CODES

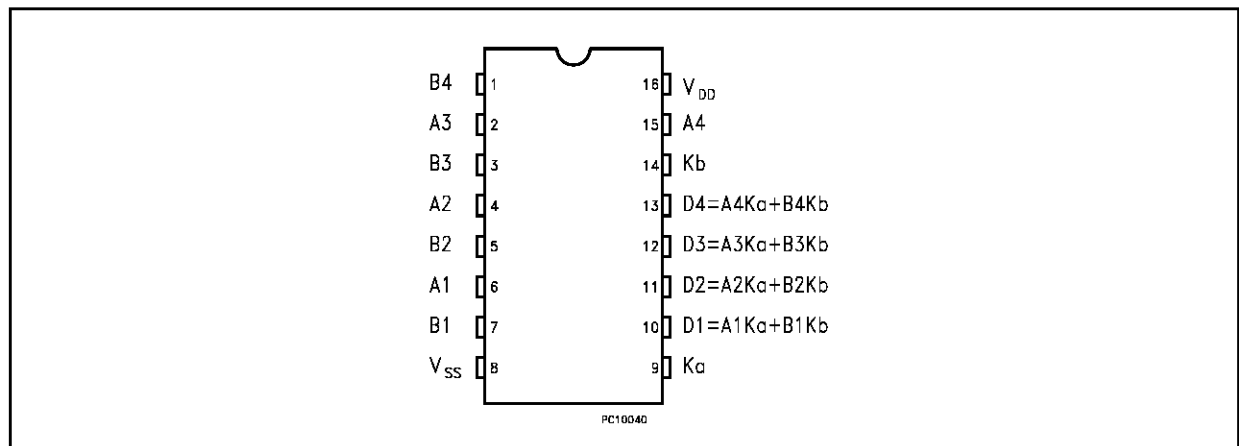
PACKAGE	TUBE	T & R
DIP	CC4019	

DESCRIPTION

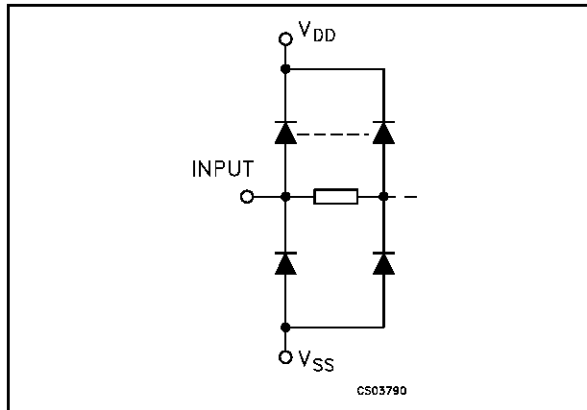
The CC4019 is a monolithic integrated circuit fabricated in Metal Oxide Semiconductor technology available in DIP and SOP packages. The CC4019 types are comprised of four AND/OR select gate configurations, each consisting of two 2 input AND gates driving a single 2-input OR

gate. Selection is accomplished by control bits K_a and K_b . In addition to selection of either channel A or channel B information, the control bits can be applied simultaneously to accomplish the logical A+B function.

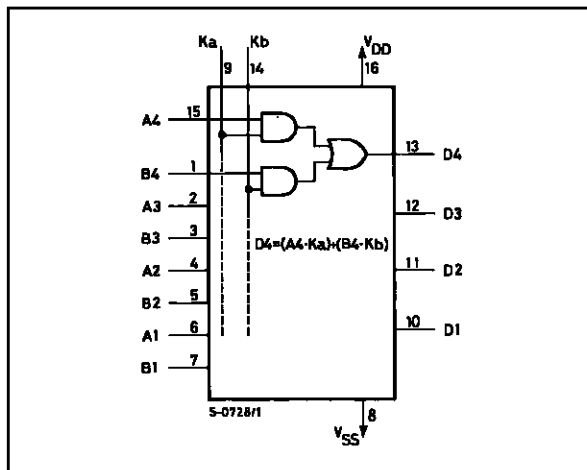
PIN CONNECTION



INPUT EQUIVALENT CIRCUIT



LOGIC DIAGRAM



PIN DESCRIPTION

PIN No	SYMBOL	NAME AND FUNCTION
6, 4, 2, 15	A1 to A4	Data Inputs
7, 5, 3, 1	B1 to B4	Data inputs
10, 11, 12, 13	D1 to D4	Data Outputs
9, 14	K _a , K _b	Control bits
8	V _{SS}	Negative Supply Voltage
16	V _{DD}	Positive Supply Voltage

TRUTH TABLE

CONTROL		INPUTS		OUTPUT
K _a	K _b	A1 to A4	B1 to B4	D1 to D4
H	X	H	X	H
H	X	L	X	L
X	H	X	H	H
X	H	X	L	L
L	L	X	X	L

X : Don't Care

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{DD}	Supply Voltage	-0.5 to +20	V
V _I	DC Input Voltage	-0.5 to V _{DD} + 0.5	V
I _I	DC Input Current	± 10	mA
P _D	Power Dissipation per Package	200	mW
	Power Dissipation per Output Transistor	100	mW
T _{op}	Operating Temperature	-55 to +125	°C
T _{stg}	Storage Temperature	-65 to +150	°C

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these conditions is not implied.
All voltage values are referred to V_{SS} pin voltage.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Value	Unit
V _{DD}	Supply Voltage	3 to 18	V
V _I	Input Voltage	0 to V _{DD}	V
T _{op}	Operating Temperature	-55 to 125	°C

DC SPECIFICATIONS

Symbol	Parameter	Test Condition				Value								Unit
		V _I (V)	V _O (V)	I _O (μA)	V _{DD} (V)	T _A = 25°C			-40 to 85°C		-55 to 125°C			
						Min.	Typ.	Max.	Min.	Max.	Min.	Max.		
I _L	Quiescent Current	0/5			5		0.02	1		30		30	μA	
		0/10			10		0.02	2		60		60		
		0/15			15		0.02	4		120		120		
		0/18			18		0.04	20		600		600		
V _{OH}	High Level Output Voltage	0/5		<1	5	4.95			4.95		4.95		V	
		0/10		<1	10	9.95			9.95		9.95			
		0/15		<1	15	14.95			14.95		14.95			
V _{OL}	Low Level Output Voltage	5/0		<1	5		0.05			0.05		0.05	V	
		10/0		<1	10		0.05			0.05		0.05		
		15/0		<1	15		0.05			0.05		0.05		
V _{IH}	High Level Input Voltage		0.5/4.5	<1	5	3.5			3.5		3.5		V	
			1/9	<1	10	7			7		7			
			1.5/13.5	<1	15	11			11		11			
V _{IL}	Low Level Input Voltage		4.5/0.5	<1	5			1.5		1.5		1.5	V	
			9/1	<1	10			3		3		3		
			13.5/1.5	<1	15			4		4		4		
I _{OH}	Output Drive Current	0/5	2.5	<1	5	-1.36	-3.2		-1.15		-1.1		mA	
		0/5	4.6	<1	5	-0.44	-1		-0.36		-0.36			
		0/10	9.5	<1	10	-1.1	-2.6		-0.9		-0.9			
		0/15	13.5	<1	15	-3.0	-6.8		-2.4		-2.4			
I _{OL}	Output Sink Current	0/5	0.4	<1	5	0.44	1		0.36		0.36		mA	
		0/10	0.5	<1	10	1.1	2.6		0.9		0.9			
		0/15	1.5	<1	15	3.0	6.8		2.4		2.4			
I _I	Input Leakage Current	0/18	Any Input		18		±10 ⁻⁵	±0.1		±1		±1	μA	
C _I	Input Capacitance		Any Input				5	7.5					pF	

The Noise Margin for both "1" and "0" level is: 1V min. with V_{DD}=5V, 2V min. with V_{DD}=10V, 2.5V min. with V_{DD}=15V

DYNAMIC ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C, C_L = 50pF, R_L = 200K Ω , t_r = t_f = 20 ns)

Symbol	Parameter	Test Condition		Value (*)			Unit
		V _{DD} (V)		Min.	Typ.	Max.	
t _{PLH} t _{PHL}	Propagation Delay Time	5			150	300	ns
		10			60	120	
		15			50	100	
t _{TLH} t _{THL}	Output Transition Time	5			100	200	ns
		10			50	100	
		15			40	80	

(*) Typical temperature coefficient for all V_{DD} value is 0.3 %/°C.