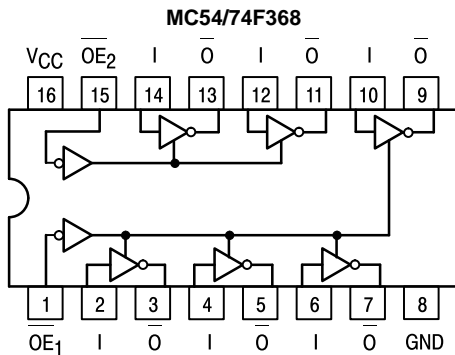
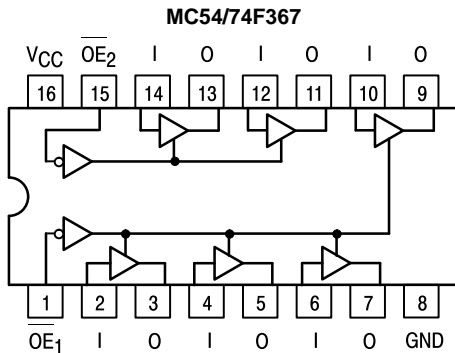




# HEX BUFFER/DRIVER 4-BIT PLUS 2-BIT, NONINVERTING AND INVERTING, 3-STATE

## CONNECTION DIAGRAMS



## FUNCTION TABLE

Inputs		Outputs	
OE	I	O	0
L	L	L	H
L	H	H	L
H	X	Z	Z

H = HIGH Voltage Level  
L = LOW Voltage Level  
X = Don't Care  
Z = High Impedance

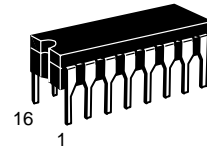
## GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V <sub>CC</sub>	Supply Voltage	54, 74	4.5	5.0	5.5	V
T <sub>A</sub>	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
I <sub>OH</sub>	Output Current — High	54			-12	mA
		74			-15	
I <sub>OL</sub>	Output Current — Low	54			48	mA
		74			64	

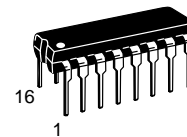
**MC54/74F367  
MC54/74F368**

**F367  
HEX BUFFER/DRIVER  
4-BIT PLUS 2-BIT,  
NONINVERTING 3-STATE**

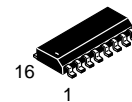
**F368  
HEX BUFFER/DRIVER  
4-BIT PLUS 2-BIT,  
INVERTING 3-STATE  
FAST™ SCHOTTKY TTL**



**J SUFFIX  
CERAMIC  
CASE 620-09**



**N SUFFIX  
PLASTIC  
CASE 648-08**



**D SUFFIX  
SOIC  
CASE 751B-03**

## ORDERING INFORMATION

MC54FXXXJ Ceramic  
MC74FXXXN Plastic  
MC74FXXXD SOIC

# MC54/74F367 • MC54/74F368

## DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions		
		Min	Typ	Max				
V <sub>IH</sub>	Input HIGH Voltage	2.0			V	Guaranteed Input HIGH Voltage		
V <sub>IL</sub>	Input LOW Voltage			0.8	V	Guaranteed Input LOW Voltage		
V <sub>IK</sub>	Input Clamp Diode Voltage			-1.2	V	I <sub>IN</sub> = -18 mA	V <sub>CC</sub> = MIN	
V <sub>OH</sub>	Output HIGH Voltage	54, 74	2.4	3.4		V	I <sub>OH</sub> = -3.0 mA	V <sub>CC</sub> = 4.5 V
		74	2.7	3.4		V	I <sub>OH</sub> = -3.0 mA	V <sub>CC</sub> = 4.75 V
		54	2.0			V	I <sub>OH</sub> = -12 mA	V <sub>CC</sub> = 4.5 V
		74	2.0			V	I <sub>OH</sub> = -15 mA	V <sub>CC</sub> = 4.5 V
V <sub>OL</sub>	Output LOW Voltage	54		0.35	0.55	V	I <sub>OL</sub> = 48 mA	V <sub>CC</sub> = MAX
		74		0.4	0.55	V	I <sub>OL</sub> = 64 mA	
I <sub>OZH</sub>	Output Off Current HIGH				50	μA	V <sub>OUT</sub> = 2.7 V	V <sub>CC</sub> = MAX
I <sub>OZL</sub>	Output Off Current LOW				-50	μA	V <sub>OUT</sub> = 0.5 V	V <sub>CC</sub> = MAX
I <sub>IH</sub>	Input HIGH Current				20	μA	V <sub>IN</sub> = 2.7 V	V <sub>CC</sub> = MAX
					100		V <sub>IN</sub> = 7.0 V	V <sub>CC</sub> = 0 V
I <sub>IL</sub>	Input LOW Current				-20	μA	V <sub>IN</sub> = 0.5 V	V <sub>CC</sub> = MAX
I <sub>OS</sub>	Output Short Circuit Current (Note 2)	-100			-225	mA	V <sub>OUT</sub> = GND	V <sub>CC</sub> = MAX
I <sub>CC</sub>	F367	I <sub>CC</sub> H			35	mA	V <sub>CC</sub> = MAX	
		I <sub>CC</sub> L			62			
		I <sub>CC</sub> Z			48			
	F368	I <sub>CC</sub> H			25			
		I <sub>CC</sub> L			62			
		I <sub>CC</sub> Z			48			

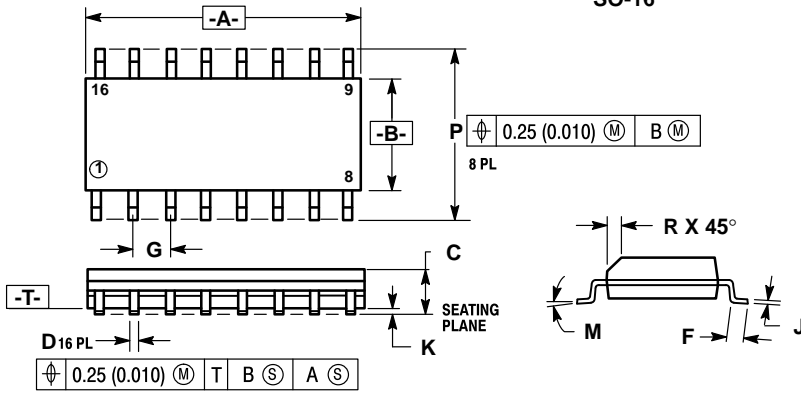
**NOTES:**

- For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
- Not more than one output should be shorted at a time, nor for more than 1 second.

## AC CHARACTERISTICS

Symbol	Parameter	54/74F			54F		74F		Unit		
		T <sub>A</sub> = +25°C			T <sub>A</sub> = -55°C to +125°C		T <sub>A</sub> = 0°C to +70°C				
		V <sub>CC</sub> = +5.0 V			V <sub>CC</sub> = 5.0 V ± 10%		V <sub>CC</sub> = 5.0 V ± 10%				
		C <sub>L</sub> = 50 pF			C <sub>L</sub> = 50 pF		C <sub>L</sub> = 50 pF				
		Min	Typ	Max	Min	Max	Min	Max			
t <sub>PLH</sub>	Propagation Delay	F367		2.0	4.5	6.5	2.0	8.0	2.0	7.0	ns
t <sub>PHL</sub>	I <sub>n</sub> to O <sub>n</sub>	3.0	5.5	7.0	3.0	8.5	3.0	7.5			
t <sub>PLH</sub>	Propagation Delay	F368		2.0	5.0	6.5	2.0	8.5	2.0	7.5	ns
t <sub>PHL</sub>	I <sub>n</sub> to $\bar{O}_n$	1.0	3.0	5.0	1.0	6.5	1.0	5.5			
t <sub>PZH</sub>	Output Enable Time	2.5	5.5	7.5	2.5	9.5	2.5	8.5	ns		
t <sub>PZL</sub>	to HIGH and LOW Level	3.0	6.5	8.5	3.0	10	3.0	9.0			
t <sub>PHZ</sub>	Output Disable Time	2.5	4.5	6.5	2.5	8.0	2.5	7.0	ns		
t <sub>PLZ</sub>	from HIGH and LOW Level	1.5	4.0	6.0	1.5	7.5	1.5	6.5			

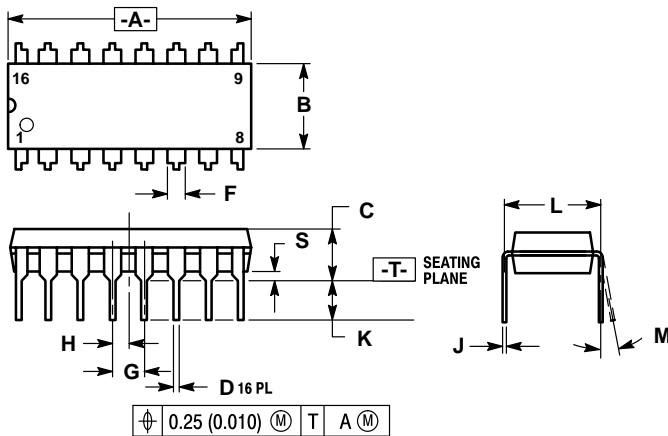
**Case 751B-03 D Suffix  
16-Pin Plastic  
SO-16**



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: MILLIMETER.
  3. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
  4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
  5. 751B-01 IS OBSOLETE, NEW STANDARD 751B-03.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.80	10.00	0.386	0.393
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

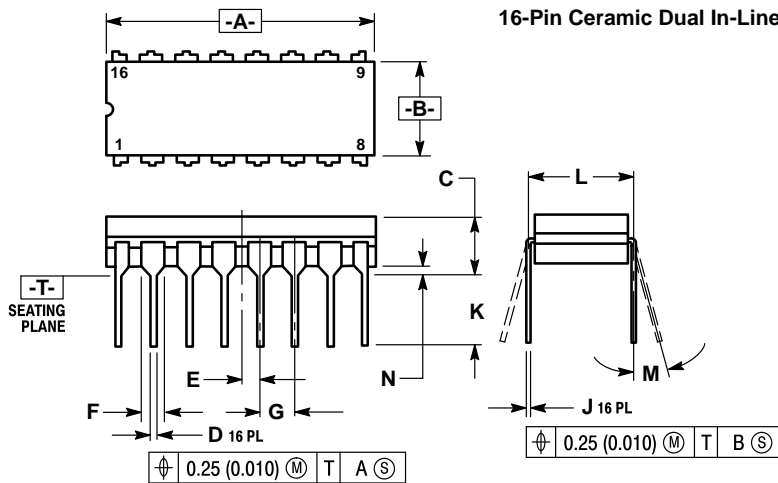
**Case 648-08 N Suffix  
16-Pin Plastic**



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: INCH.
  3. DIMENSION "L" TO CENTER OF LEADS WHEN FORMED PARALLEL.
  4. DIMENSION "B" DOES NOT INCLUDE MOLD FLASH.
  5. ROUNDED CORNERS OPTIONAL.
  6. 648-01 THRU -07 OBSOLETE, NEW STANDARD 648-08.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	18.80	19.55	0.740	0.770
B	6.35	6.85	0.250	0.270
C	3.69	4.44	0.145	0.175
D	0.39	0.53	0.015	0.021
F	1.02	1.77	0.040	0.070
G	2.54 BSC		0.100 BSC	
H	1.27 BSC		0.050 BSC	
J	0.21	0.38	0.008	0.015
K	2.80	3.30	0.110	0.130
L	7.50	7.74	0.295	0.305
M	0°	10°	0°	10°
S	0.51	1.01	0.020	0.040

**Case 620-09 J Suffix  
16-Pin Ceramic Dual In-Line**



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: INCH.
  3. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
  4. DIM F MAY NARROW TO 0.76 (0.030) WHERE THE LEAD ENTERS THE CERAMIC BODY.
  5. 620-01 THRU -08 OBSOLETE, NEW STANDARD 620-09.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	19.05	19.55	0.750	0.770
B	6.10	7.36	0.240	0.290
C	—	4.19	—	0.165
D	0.39	0.53	0.015	0.021
E	1.27 BSC		0.050 BSC	
F	1.40	1.77	0.055	0.070
G	2.54 BSC		0.100 BSC	
J	0.23	0.27	0.009	0.011
K	—	5.08	—	0.200
L	7.62 BSC		0.300 BSC	
M	0°	15°	0°	15°
N	0.39	0.88	0.015	0.035

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