

MCB5460F\*

## MCBC5400/MCB5400F series

# BEAM LEAD



This device consists of two 4-input OR expanders for use with the AND-OR-INVERT gates. A maximum of four expander gates can be added to the MCB5450 or MCB5453 expandable gates without seriously affecting their operation. Beam lead sealed junction technology is used to manufacture these devices. They are particularly useful in highly reliable systems using hybrid beam lead assembly techniques or standard flat package assembly techniques.



### SWITCHING TIME TEST CIRCUIT VOLTAGE WAVEFORMS AND DEFINITIONS vcc +5.0 Vdc MC5453/7453 OR 1/2 MC5450/7450 Coax ₹400 Coax 950 ±1.0% MMD6150 or Equiv TPout MMD7000 CT. 950 ±1.0% or Equiv PULSE GENERATOR t+ = 12 ns 3.0 V t- = 6.0 ns 90% TPin-TPin PRF = 1.0 MHz, 50% duty cycle 1.5 V VIH 10% Generator $Z_{out} \approx 50$ ohms - 0 V +2.4 Vdc -tpd+ tod-2.4 V min $C_T$ = 15 pF = total parasitic capacitance, which includes probe, wiring, and load TPout capacitances. 1.5 V 0.4 V max GND The coax delays from input to scope and output to scope must be matched. The scope must be terminated in 50-ohm impedance. The 950-ohm resistor and the scope termination impedance constitute a 20:1 attenuator probe. Coax shall be CT-070-50 or equivalent.

\*F suffix = 1/4" x 1/4" ceramic package (Case 651). MCBC-prefixed devices are unencapsulated. Beam numbers are the same as the pin numbers for flat-packaged devices. See General Information section for package and chip details.

# ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one expander. The other expander is tested in the same manner. Further, test procedures are shown for only one input of the expander being tested. To complete testing, sequence through remaining inputs.

Collector -Emitter Emitter œ nuor

pander being tested. To complete testing, sequence through remaining inputs.	complete te: 1g inputs.		60	Emitter	tter	14				TEST	VOLTA	GE VAL	TEST VOLTAGE VALUES (All Temperatures)	Temper	atures						
			<u>،5</u>	4	P13	ę	Ohms						Volts								
			4	Collector	12. 12. 13.	R <sub>EX 1</sub>	Rex 2	ν,	HIN N	V <sub>IHH</sub>	V <sub>R1</sub>	V <sub>R2</sub>	۲. ۴۳.	V <sub>th</sub> 0	Vo1 Vo2 Vo3	Vo2		Vcc 1	V <sub>ccl</sub>	V <sub>CCH</sub>	
	and a second	1. 28. 12	16 <sup>-1</sup> 14			1.2 k*	1.1 k‡	0.4	2.4	5.5	4.5	5.0	2.0	0.8	4.5	1.0 0	0.85 5	5.0	4.5	5.5	
		Pin L	<	Test Limits ACBC5460/MCB5460F —55 to +125°C	ts B5460F 15°C				Ë	ST VOL	TAGE	APPLIEC	test voltage applied to pins listed below	IS LIST	ED BEI	WO					
Characteristic	Symbol		Min	Max	Unit	R <sub>EX 1</sub>	R <sub>EX 2</sub>	<"	-H	V HHI	<pre></pre>	V <sub>R2</sub>	۲ <sup>44</sup> 1	V <sub>th 0</sub>	Vo1 Vo2 Vo3	Vo2	03	V <sub>cc</sub>	V <sub>ccl</sub>	V <sub>cch</sub>	Gnd
Input Forward Current	LF	2		-1.6	mAdc	1000 - 1000 1000 - 1000 1000 - 1000		a	1.925 1.935		3,6,7	1				1	· · · ·	n na sina si	1	4	11
Leakage Current	I <sub>R1</sub>	2		40	μAdc		•		5				1			1				4	3,6,7,11
	I <sub>R2</sub>	2		1.0	mAdc	Ĩ	1	2012 201 <sup>3</sup> - 1		2			1 or 1 1 - 1 1 - 1		2	-	1			4	3,6,7,11
Output Output Voltage	۸ <sup>OL</sup>	1,2†		0.4	Vdc	- - -	8	1.2		•			3,5,6,7	т. Т	1	1		1.1.1 1.1.1	4		11
Leakage Current	ICEX	2		150\$	μAdc	1	27 • 10 • 10 • 10			- 3	3,6,7		•	2	2	1	1	1	4	1	11
Drive Current	<sup>1</sup> DR	F	-0.3	•	mAdc	•	1			- 1997-144 - 1997-144			3,5,6,7	4		-	1		4	,	11
Power Requirements (Total Device) Power Supply Drain	Ipdu	4	-	4.0	mAdc	- 1	•		•								1,14			4	3,5,6,7,8,9,10,11,12
	IPDH	4	•	2.5	mAdc		1		1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		- <u>6</u> 6	3,5,6,7,8, 9,10,12	34	•	-1		1,14			4	п

\*Resistor to ground. <sup>†</sup>Resistor to V<sub>CCL</sub>. <sup>#</sup>See test circuit.

<sup>1</sup>VoL measured between pins 1 and 2. fTested only at low temperature limit; i.e., at -55°C for MCB5460. \*\*Tested only at 25°C; times include delay of expandable gate.

= =

. .

1 1

1 1

. .

1 1

3,6,7 3,6,7

1 1

ns ns

\* \*

bt bt

**Switching Parameters** 

Pulse 5 5

•

20\*\* 30\*\*

Turn-On Delay Turn-Off Delay

- - -4 4 - - -

1 1

. . .

. .

# MCBC5460, MCB5460F (continued)