

**MOTOROLA**

T-75-45-07

Quad Line Receiver with Bias Driver

ELECTRICALLY TESTED PER:
MPG 1692 (-30°C to +85°C)

- $P_D = 220 \text{ mW typ/pkg}$
- $t_{pd} = 0.9 \text{ ns typ (510 ohm load)}$
= 1.1 ns typ (50 ohm load)
- Full Load Current, $I_L = -25 \text{ mA dc max}$

ABSOLUTE MAXIMUM RATINGS:	Symbol	Min	Max	Unit
Power Supply Voltage ($V_{CC} = 0$)	V_{CC}	-8.0	0	Vdc
Base Input Voltage ($V_{CC} = 0$)	V_{IN}	0	V_{EE}	Vdc
Output Source Current Continuous	I_O		< 40	mA dc
Storage Temperature Range	T_{stg}	-65	+165	°C
Operating Temperature Range	T_A	-30	+85	°C

PIN ASSIGNMENTS

FUNCTION	DIL	FLATS	BURN-IN (CONDITION C)
V_{CC1}	1	5	GND
AOUT	2	6	51 Ω to V_{TT}
BOUT	3	7	51 Ω to V_{TT}
A _{IN1}	4	8	V_{BB}
A _{IN2}	5	9	GND
B _{IN2}	6	10	GND
B _{IN1}	7	11	V_{BB}
V_{EE}	8	12	V_{EE}
V_{BB}	9	13	V_{BB}
C _{IN1}	10	14	V_{BB}
C _{IN2}	11	15	GND
D _{IN2}	12	16	GND
D _{IN1}	13	1	V_{BB}
COUT	14	2	51 Ω to V_{TT}
DOUT	15	3	51 Ω to V_{TT}
V_{CC2}	16	4	GND

BURN - IN CONDITIONS:
 $V_{TT} = -2.0 \text{ V MAX} / -2.2 \text{ V MIN}$
 $V_{EE} = -5.7 \text{ V MAX} / -5.2 \text{ V MIN}$

Military 1692

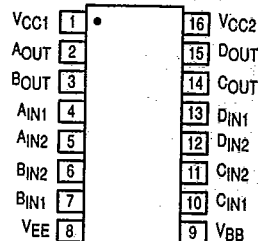


AVAILABLE AS

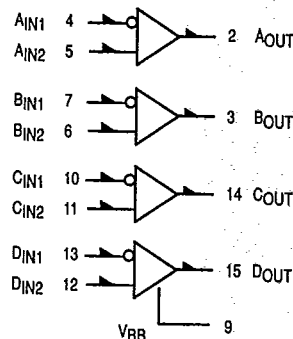
- 1) JAN: N/A
 - 2) SMD: N/A
 - 3) 883: N/A
 - 4) 1692/BXA *
- X = CASE OUTLINE AS FOLLOWS:

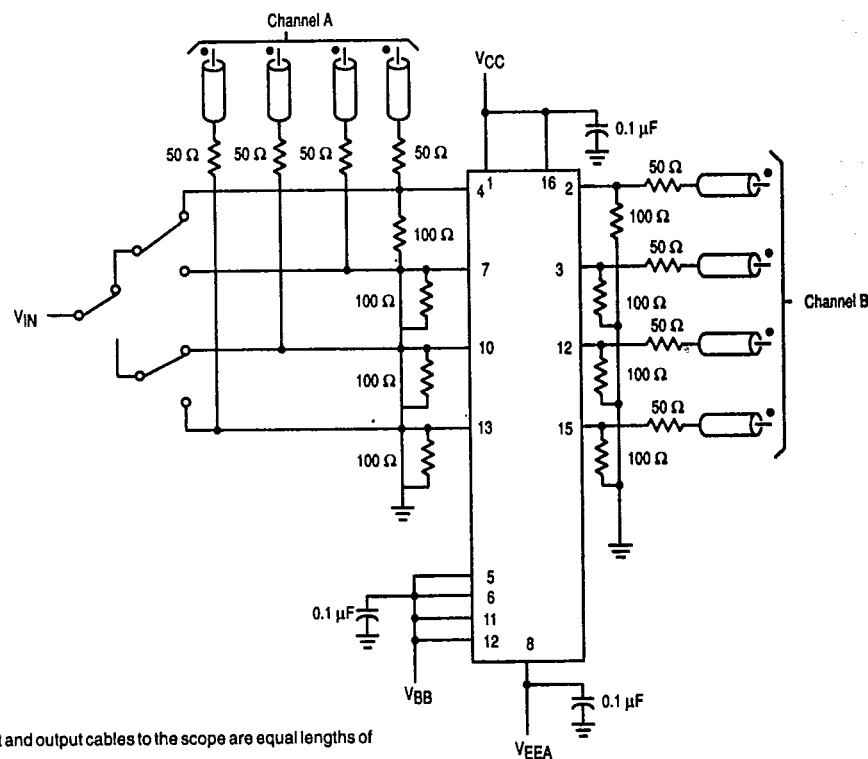
PACKAGE: CERDIP: E
CERFLAT: F

* 883 Processing (Non-Compliant)



LOGIC DIAGRAM





NOTES

1. All input and output cables to the scope are equal lengths of 50 Ω coaxial cable.
2. Input Generator = EH137 or equivalent.
3. $t_r = t_f = 1.5 \text{ ns} \pm 0.2 \text{ ns}$.
4. Frequency = 20 MHz.
5. 50% duty cycle.
6. Pulse Amp. = 0.8 Vdc.
7. DC level = + 0.71 Vdc.

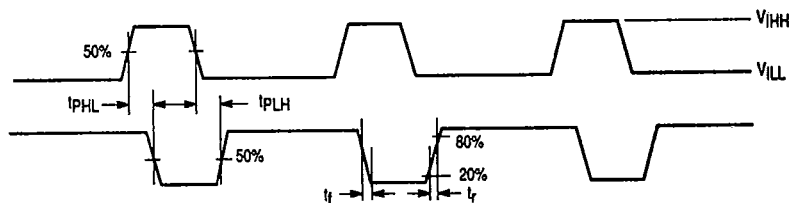


Figure 1. Test Circuit and Waveforms

Temp.	25°C	85°C	-30°C
V _{ILL}	0.31 V	0.337 V	0.285 V
V _{IHH}	1.11 V	1.185 V	1.041 V

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1692 QUIESCENT LIMIT TABLE

Test Temperature	Test Voltage Values (Volts)				
	V _{IH}	V _{IHL}	V _{IHA}	V _{IILA}	V _{EEA}
T _A = 25 °C	-0.81	-1.85	-1.095	-1.485	-5.2
T _A = 85 °C	-0.70	-1.83	-1.025	-1.440	-5.2
T _A = -30 °C	-0.875	-1.89	-1.180	-1.515	-5.2

Symbol	Parameter	Limits						Units	TEST VOLTAGE APPLIED TO PINS BELOW									
		+ 25 °C		+ 85 °C		- 30 °C			Pinouts referenced are for DIL package, check Pin Assignments V _{CC} = 0.0 V, Output Load = 50 Ω - 2.0 V									
		Subgroup 1		Subgroup 2		Subgroup 3			V _{IH}	V _{IL}	V _{IHA}	V _{IILA}	V _{BB}	V _{CC}	V _{EE}	P.U.T.		
Min	Max	Min	Max	Min	Max													
V _{OH}	High Output Voltage	- 0.96	- 0.81	- 0.89	- 0.7	- 1.045	- 0.875	V	4, 7, 10, 13	4, 7, 10, 13			5, 6, 11, 12	1, 16	8	2, 3, 14, 15		
V _{OL}	Low Output Voltage	- 1.85	- 1.62	- 1.83	- 1.575	- 1.89	- 1.65	V	4, 7, 10, 13	4, 7, 10, 13			5, 6, 11, 12	1, 16	8	2, 3, 14, 15		
V _{OHA}	High Output Voltage	- 0.98	- 0.81	- 0.91	- 0.7	- 1.065	- 0.875	V	4, 7, 10, 13	4, 7, 10, 13		4, 7, 10, 13	5, 6, 11, 12	1, 16	8	2, 3, 14, 15		
V _{OLA}	Low Output Voltage	- 1.85	- 1.60	- 1.83	- 1.555	- 1.89	- 1.63	V		4, 7, 10, 13	4, 7, 10, 13		5, 6, 11, 12	1, 16	8	2, 3, 14, 15		
V _{BB1}	Reference Voltage	- 1.35	- 1.25	- 1.295	- 1.95	- 1.4	- 1.3	V					5, 6, 11, 12	1, 16	8	9		
I _{EE}	Power Supply Drain Current	- 50						mA		4, 7, 10, 13			5, 6, 11, 12	1, 16	8	8		
I _{IN}	Input Current High		250					μA	4, 7, 10, 13	4, 7, 10, 13			4 - 7, 10 - 13	1, 16	8	4 - 7, 10 - 13		
I _R	Input Current High	- 100	100					μA		4, 7, 10, 13			4 - 7, 10 - 13	1, 16	8	4 - 7, 10 - 13		

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QUIESCENT LIMIT TABLE

Test Temperature	Test Voltage Values (Volts)						
	V _{IH}	V _{IL}	V _{IHA}	V _{ILA}	VEE	VEEL	V _{CC}
T _A = 25 °C	-0.81	-1.85	-1.095	-1.485	-5.2	-3.2	+2.0
T _A = 85 °C	-0.70	-1.83	-1.025	-1.440	-5.2	-3.2	+2.0
T _A = -30 °C	-0.875	-1.89	-1.180	-1.515	-5.2	-3.2	+2.0

Symbol	Parameter	Limits						Units	TEST VOLTAGE APPLIED TO PINS BELOW						
	Functional Parameters:	+ 25 °C		+ 85 °C				- 30 °C		Pinouts referenced are for DIL package, check Pin Assignments Output Load = 50 Ω to GND					
		Subgroup 9		Subgroup 10		Subgroup 11									
		Min	Max	Min	Max	Min	Max								
t _{TLH}	Rise Time	0.6	2.1	0.6	2.3	0.6	2.2	ns	V _{IN}	V _{OUT}	V _{BB}	V _{CC}	VEEL	P.U.T.	
t _{FHL}	Fall Time	0.6	2.1	0.6	2.3	0.6	2.2	ns	V _{IN}	V _{OUT}	V _{BB}	V _{CC}	VEEL	P.U.T.	
t _{pd}	Propagation Delay High to Low	0.6	1.7	0.6	1.9	0.6	1.8	ns	V _{IN}	V _{OUT}	V _{BB}	V _{CC}	VEEL	P.U.T.	
t _{pd}	Propagation Delay Low to High	0.6	1.5	0.6	1.7	0.6	1.6	ns	V _{IN}	V _{OUT}	V _{BB}	V _{CC}	VEEL	P.U.T.	

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