

DUAL HIGH-SPEED DIFFERENT COMPARATOR

The LM711/I consists of two voltage comparators with the separate differential inputs, a common output and provision for strobing each side independently. The device features high accuracy, fast response, low offset voltage, a large input voltage range, low power consumption and compatibility with practically all integrated logic forms.

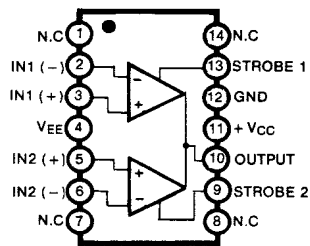
The LM711/I can be used as a sense amplifier for memories, and a dual comparator with OR'ed outputs is required, such as a double-ended limit detector.

FEATURES

- Fast response time: 40ns (Typ)
- Output compatible with most TTL circuits
- Independent strobing of each comparator
- Low offset voltage

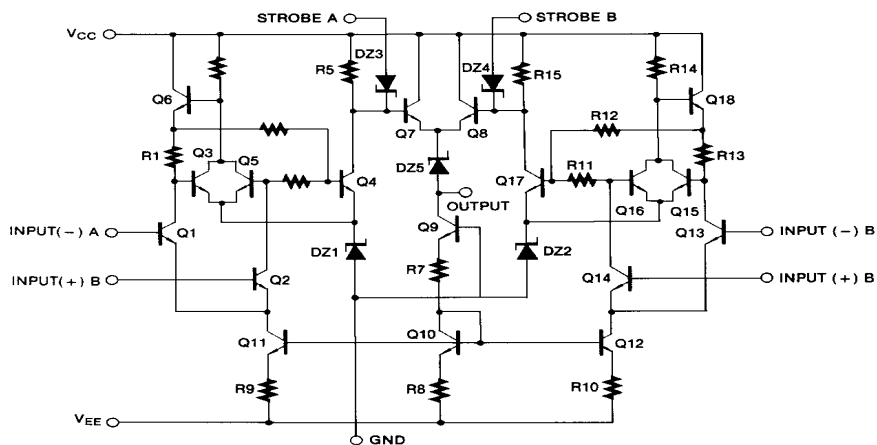
ORDERING INFORMATION

BLOCK DIAGRAM



Device	Package	Operating Temperature
LM711N	14 DIP	0 ~ + 70°C
LM711M	14 SOP	
LM711IN	14 DIP	-25 ~ + 85°C
LM711IM	14 SOP	

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

Characteristic	Symbol	Value	Unit
Positive Supply Voltage	V _{CC}	+14	V
Negative Supply Voltage	V _{EE}	-7	V
Differential Input Voltage	V _{I(DIFF)}	5	V
Input Voltage	V _I	±7	V
Strobe Voltage	V _{STR}	0 ~ 6	V
Peak Output Current	I _{O(P)}	50	mA
Continuous Total Power Dissipation	P _D	500	mW
Operating Temperature Range LM711	T _{OPR}	0 ~ + 70	°C
LM711I	T _{OPR}	-65 ~ + 150	°C
Storage Temperature Range	T _{STG}	-25 ~ + 85	°C

ELECTRICAL CHARACTERISTICS

(V_{CC} = +12V, V_{EE} = -6V, T_A=25°C, unless otherwise specified)

Characteristic	Symbol	Test Conditions	LM711I			LM711			Unit
			Min	Typ	Max	Min	Typ	Max	
Input Offset Voltage	V _{IO}	R _S ≤ 200Ω, V _{CH} = 0V		1.0	3.5		1.0	5.0	mV
		V _{O(P)} = 1.4V Note 2			4.5			6.0	
Input Offset Current (Note 1)	I _{IO}	V _{O(P)} = 1.4V		0.5	10.0		0.5	15	μA
		Note 2			20			25	
Input Bias Current	I _{BIAS}			25	75		25	100	μA
		Note 2			150			150	
Large Signal Voltage Gain	G _V		750	1500		700	1500		V/V
		Note 2	500			500			
Input Voltage Range	V _{I(R)}	V _{EE} = -7.0V	±5.0			±5.0			V
Differential Input Voltage Range	V _{ID(R)}		±5.0			±5.0			V
Output Resistance	R _O			200			200		Ω
Output Voltage (High)	V _{O(H)}	V _I ≥ 10mV		4.5	5.0		4.5	5.0	V
Output Voltage (Low)	V _{O(L)}	V _I ≤ 10mV	-1.0		0	-1.0	-0.5	0	V
Loaded Output High Level	V _{OH}	V _I ≥ 5mV, I _O = 5mA	2.5	3.5		2.5	3.5		mA
Strobed Output Level	V _{STR}	V _{STROBE} ≥ 3V	-1.0		0	-1.0		0	V
Output Sink Current	I _{SINK}	V _I ≥ 10mV, V _{O(P)} ≥ 0V	0.5	0.8		0.5	0.8		mA
Positive Supply Current	I _{CC}	V _{O(P)} = 0V, V _I = 10mV		8.6			8.6		mA
Negative Supply Current	I _{EE}	V _{O(P)} = 0V, V _I = 5mV		3.9			3.9		mA
Strobe Current	I _{STR}	V _{STROBE} = 100mV		1.2	2.5		1.2	2.5	mA
Power Consumption	P _D	V _{O(P)} = 0V, V _I ≥ 10mV		130	200		130	230	mW
Response Time	t _{RES}	(NOTE 1)		40			40		ns
Strobe Release Time	T _{RE}			12			12		ns

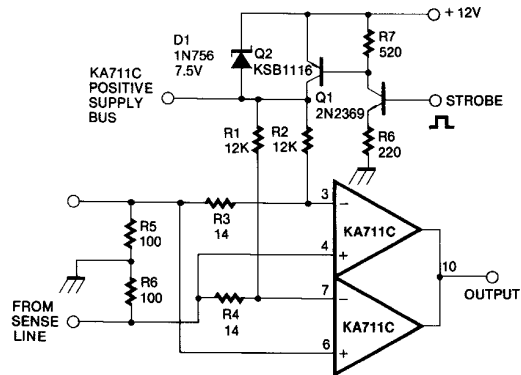
Note: 1. The response time specified is for a 100mV input step with 10mV overdrive

2. LM711: 0 ≤ T_A ≤ +70°CLM711I: -25 ≤ T_A ≤ +85°C

3. The input offset voltage and input offset current are specified for a logic threshold voltage of 711I, 1.65V at -25°C, 1.4V at +25°C, 1.15V at +85°C, for 711, 1.5V at 0°C, 1.4V at +25°C, 1.2V at +70°C.

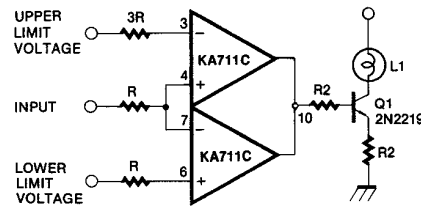
TYPICAL APPLICATIONS

* Fig. 1 Sense Amplifier With Supply Strobing
for Reduced Power Consumption*



* Standby dissipation is about 40mW

Fig. 2 Double-Ended Limit Detector
With Lamp Driver



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