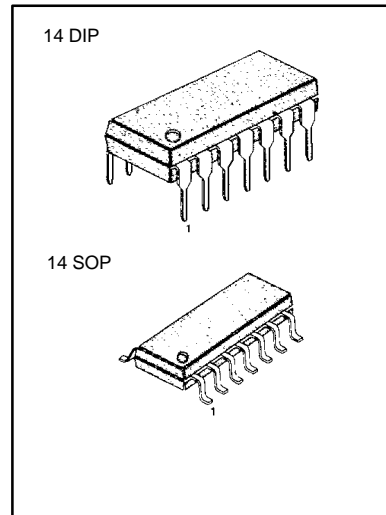


**DUAL HIGH-SPEED DIFFERENT COMPARATOR**

The KA711/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 KA711/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**

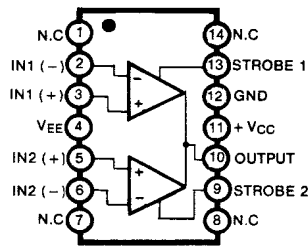
- Fast response time: 40ns (Typ)
- Output compatible with most TTL circuits
- Independent strobing of each comparator
- Low offset voltage



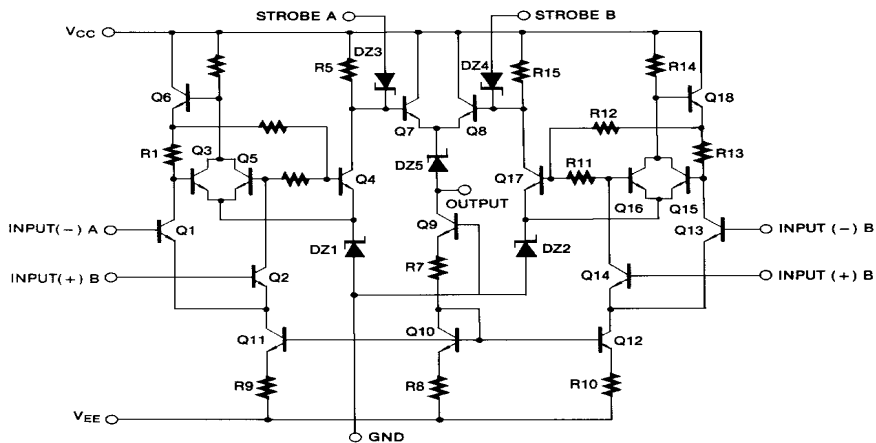
**ORDERING INFORMATION**

Device	Package	Operating Temperature
KA711	14 DIP	0 ~ + 70°C
KA711D	14 SOP	
KA711I	14 DIP	-25 ~ + 85°C
KA711ID	14 SOP	

**BLOCK DIAGRAM**



**SCHEMATIC DIAGRAM**



ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C)

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

## ELECTRICAL CHARACTERISTICS

(V<sub>CC</sub> = +12V, V<sub>EE</sub> = -6V, T<sub>A</sub>=25°C, unless otherwise specified)

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

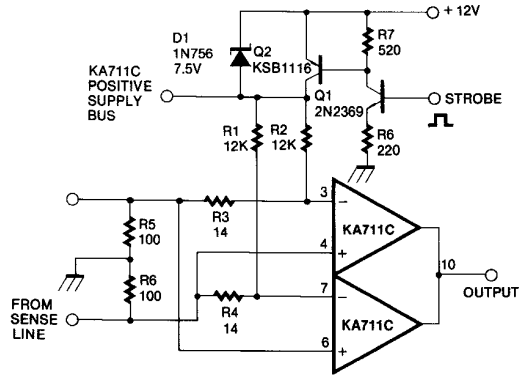
Note: 1. The response time specified is for a 100mV input step with 10mV overdrive

2. LM711: 0 ≤ T<sub>A</sub> ≤ +70°CLM711I: -25 ≤ T<sub>A</sub> ≤ +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.

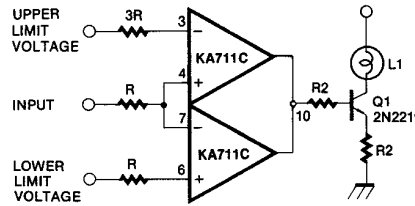
TYPICAL APPLICATIONS

\* 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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