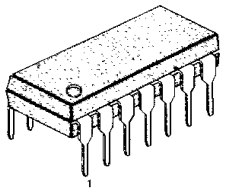
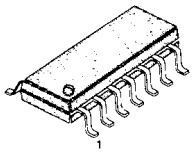
DUAL HIGH-SPEED DIFFERENT COMPARATOR

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 forrns.
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.

14 DIP



14 SOP



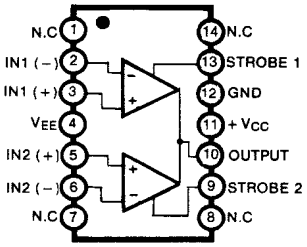
FEATURES

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

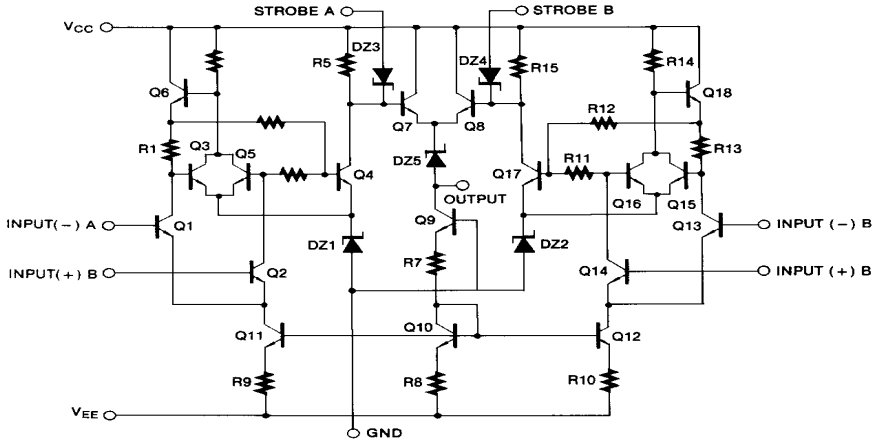
ORDERING INFORMATION

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

BLOCK DIAGRAM



SCHEMATIC DIAGRAM



FAIRCHILD SEMICONDUCTOR TM

Rev. B

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
Storbe 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		0 ~ + 70	
LM711I	T_{OPR}	-65 ~ + 150	°C
Storage Temperature Range	T_{STG}	-25 ~ + 85	°C

ELECTRICAL CHARACTERISTICS

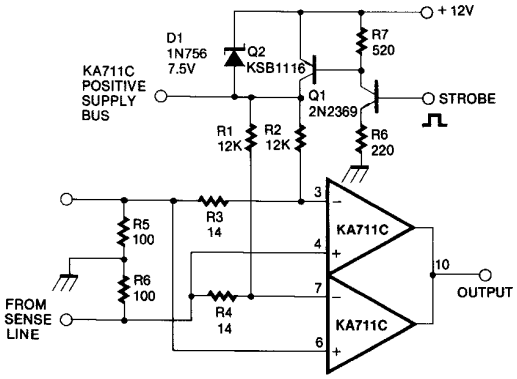
(V_{CC} = +12V, V_{EE} = -6V, T_A=25°C, unless otherwise specified)

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°C
LM711I: -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.

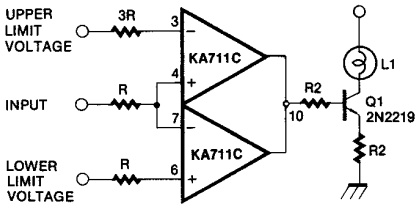
TYPICAL APPLICATIONS

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



* Standby dissipation is about 40mW

Fig. 2 Double-Ended Limit Detactor With Lamp Driver



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