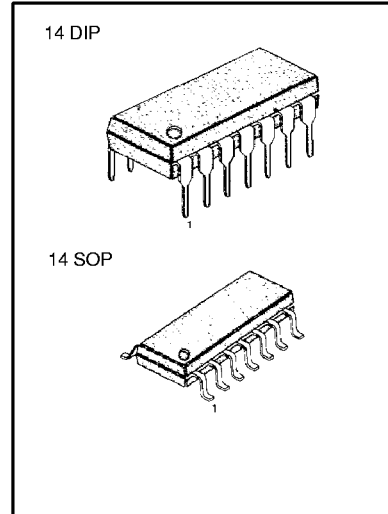


DUAL HIGH-SPEED DIFFERENT COMPARATOR

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.

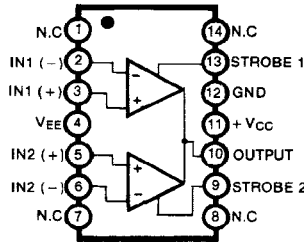
FEATURES

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



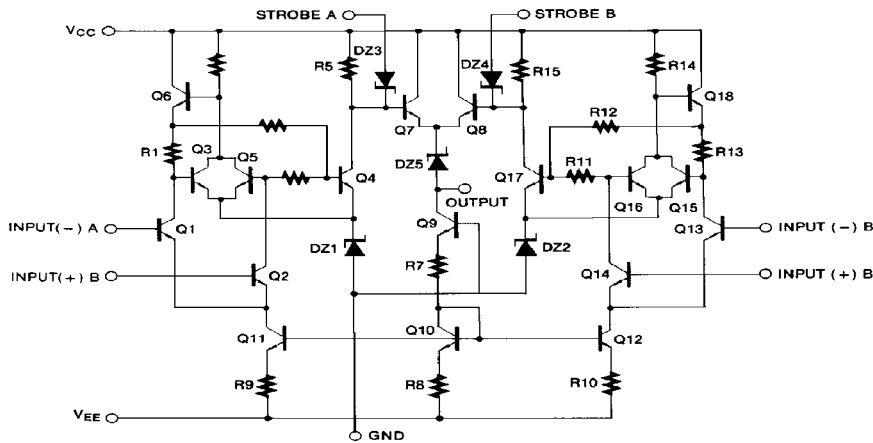
ORDERING INFORMATION

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 ($T_A=25^\circ\text{C}$)

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		0 ~ +70	
LM711I	T_{OPR}	-65 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-25 ~ +85	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

($V_{CC} = +12\text{V}$, $V_{EE} = -6\text{V}$, $T_A=25^\circ\text{C}$, unless otherwise specified)

Characteristic	Symbol	Test Conditions	LM711I			LM711			Unit
			Min	Typ	Max	Min	Typ	Max	
Input Offset Voltage	V_{IO}	$R_S \leq 200\Omega$, $V_{CH} = 0\text{V}$		1.0	3.5		1.0	5.0	mV
		$V_{O(P)} = 1.4\text{V}$ Note 2			4.5			6.0	
Input Offset Current (Note 1)	I_{IO}	$V_{O(P)} = 1.4\text{V}$		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	$V_{I(R)}$	$V_{EE} = -7.0\text{V}$	± 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)	$V_{O(H)}$	$V_I \geq 10\text{mV}$		4.5	5.0		4.5	5.0	V
Output Voltage (Low)	$V_{O(L)}$	$V_I \leq 10\text{mV}$	-1.0		0	-1.0	-0.5	0	V
Loaded Output High Level	V_{OH}	$V_I \geq 5\text{mV}$, $I_O = 5\text{mA}$	2.5	3.5		2.5	3.5	mA	
Strobed Output Level	V_{STR}	$V_{STROBE} \geq 3\text{V}$	-1.0		0	-1.0		0	V
Output Sink Current	I_{SINK}	$V_I \geq 10\text{mV}$, $V_{O(P)} \geq 0\text{V}$	0.5	0.8		0.5	0.8	mA	
Positive Supply Current	I_{CC}	$V_{O(P)} = 0\text{V}$, $V_I = 10\text{mV}$		8.6			8.6	mA	
Negative Supply Current	I_{EE}	$V_{O(P)} = 0\text{V}$, $V_I = 5\text{mV}$		3.9			3.9	mA	
Strobe Current	I_{STR}	$V_{STROBE} = 100\text{mV}$		1.2	2.5		1.2	2.5	mA
Power Consumption	P_D	$V_{O(P)} = 0\text{V}$, $V_I \geq 10\text{mV}$		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

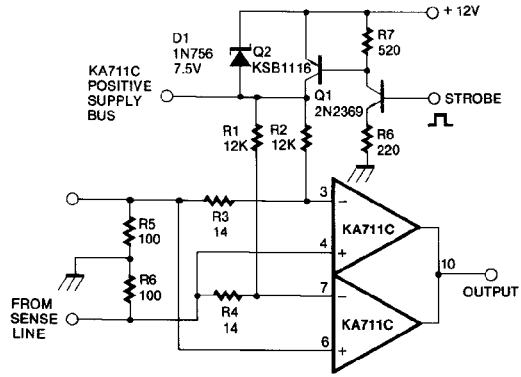
2. LM711: $0 \leq T_A \leq +70^\circ\text{C}$

LM711I: $-25 \leq T_A \leq +85^\circ\text{C}$

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 $+25^\circ\text{C}$, 1.15V at $+85^\circ\text{C}$, for 711, 1.5V at 0°C , 1.4V at $+25^\circ\text{C}$, 1.2V at $+70^\circ\text{C}$.

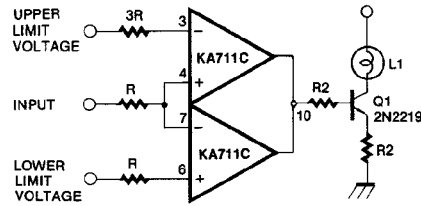
TYPICAL APPLICATIONS

* 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



TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACE ^x ™	ISOPLANAR™
CoolFET™	MICROWIRE™
CROSSVOLT™	POP™
E ² CMOS™	PowerTrench™
FACT™	QS™
FACT Quiet Series™	Quiet Series™
FAST®	SuperSOT™-3
FASTr™	SuperSOT™-6
GTO™	SuperSOT™-8
HiSeC™	TinyLogic™

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.