

MITSUBISHI <LINEAR ICs>  
**M5249L,FP**

**SOURCE VOLTAGE DETECTION TYPE SINGLE COMPARATOR**

**DESCRIPTION**

M5249 is a semiconductor integrated circuit designed as a single-power source comparator for the source voltage level detection. It works under the wide range of source voltage and can be operated by large current, however, it consumes low power during the stand-by time.

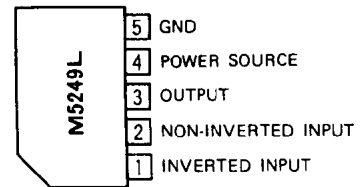
**FEATURES**

- Wide source voltage range . . . . . 2.5 ~ 40V
- Wide input voltage range . . . . . 2V ~  $V_{CC} + 0.3V$
- Low current consumption . . . . . 0.3mA (Output OFF)  
1.0mA (Output ON)
- High output drive capability . . .  $I_{sink} = 20mA$  ( $V_o = 0.2V$ )  
 $I_{sink} = 80mA$  ( $V_o = 1V$ )
- Low input current . . . . . 20nA

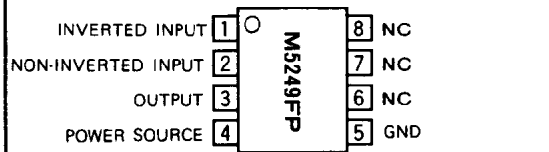
**APPLICATION**

General electronic devices such as; Voltage comparators, CR timers, Delay circuits, Oscillation circuits (square waves), etc.

**PIN CONFIGURATION (TOP VIEW)**



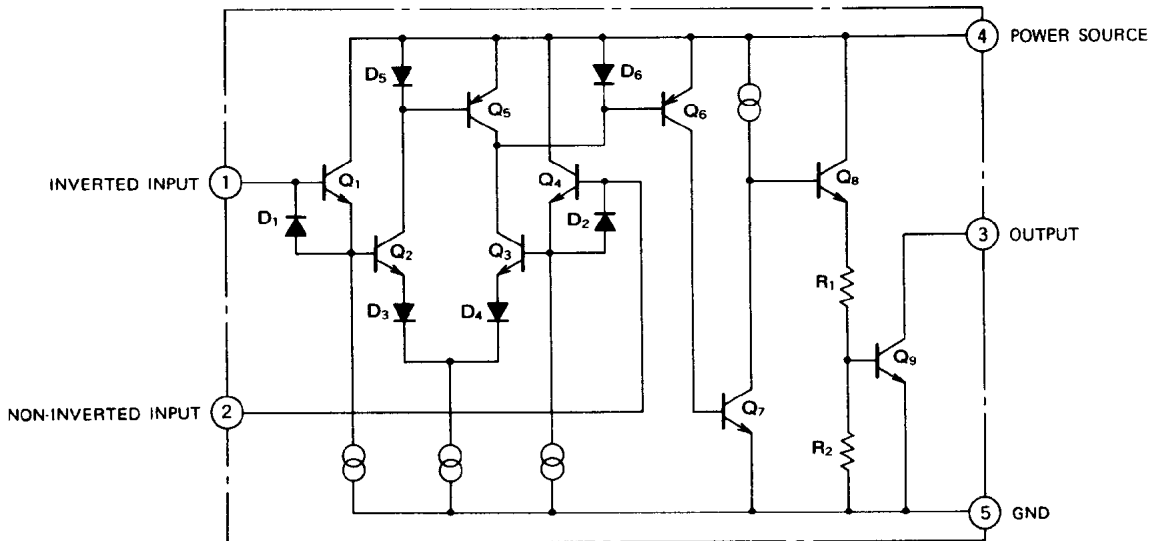
Outline 5P5T



Outline 8P2S-A

NC: NO CONNECTION

**EQUIVALENT CIRCUIT DIAGRAM**



**SOURCE VOLTAGE DETECTION TYPE SINGLE COMPARATOR**

**ABSOLUTE MAXIMUM RATINGS** (Ta = 25°C, unless otherwise noted)

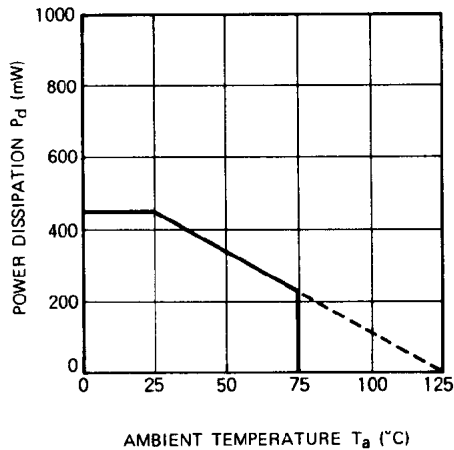
Symbol	Parameter	Conditions	Ratings	Unit
V <sub>CC</sub>	Source voltage		40	V
V <sub>IN</sub>	Input voltage		V <sub>CC</sub> +0.3	V
V <sub>ID</sub>	Differential input voltage		20	V
I <sub>OL</sub>	Output drive current		80	mA
V <sub>OH</sub>	Output drive voltage		40	V
P <sub>d</sub>	Power dissipation		450(L)/440(FP)	mW
K <sub>θ</sub>	Thermal derating		4.5(L)/4.4(FP)	mW/°C
T <sub>opr</sub>	Operating temperature		-20 ~ 75	°C
T <sub>stg</sub>	Storage temperature		-40 ~ 125	°C

**ELECTRICAL CHARACTERISTICS** (Ta = 25°C, V<sub>CC</sub> = 12V)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V <sub>CC</sub>	Supply voltage		2.5		40	V
I <sub>CC</sub>	Circuit current	Output "H"		0.3	0.7	mA
		Output "L"		1.0	1.5	
V <sub>IN1</sub>	Inverted input voltage		2.0		V <sub>CC</sub> +0.3	V
V <sub>IN2</sub>	Non-inverted input voltage					V
I <sub>IN1</sub>	Inverted input current			20	75	nA
I <sub>IN2</sub>	Non-inverted input current					nA
I <sub>IO</sub>	Input offset current			5	50	nA
V <sub>IO</sub>	Input offset voltage			4	20	mV
V <sub>OL</sub>	Output saturated voltage	I <sub>sink</sub> = 20mA		0.2	0.4	V
		I <sub>sink</sub> = 80mA		1		
t <sub>PLH</sub>	Output "L-H" propagation delay time			3		μs
t <sub>PHL</sub>	Output "H-L" propagation delay time			1		μs
I <sub>OH</sub>	Output leak current				1	μA

**TYPICAL CHARACTERISTICS**

**THERMAL DERATING  
(MAXIMUM RATING)**



**OUTPUT SATURATED VOLTAGE VS.  
OUTPUT SINK CURRENT**

