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.

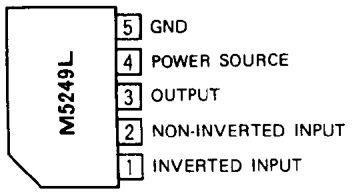
FEATURES

- 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

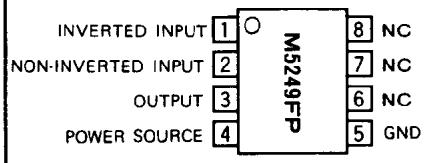
APPLICATION

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

PIN CONFIGURATION (TOP VIEW)



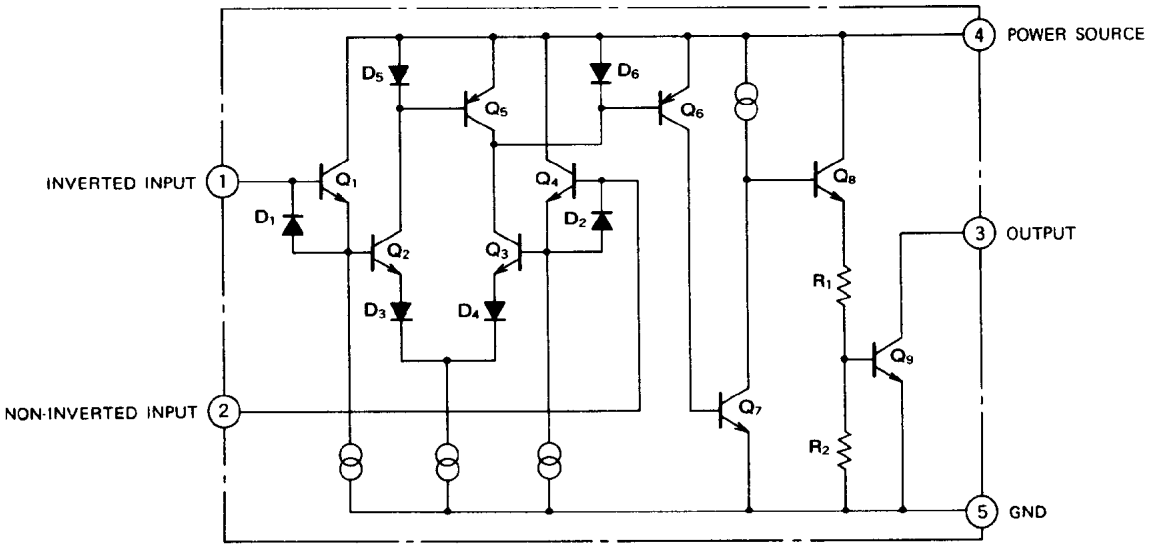
Outline 5P5T



Outline 8P2S-A

NC: NO CONNECTION

EQUIVALENT CIRCUIT DIAGRAM



SOURCE VOLTAGE DETECTION TYPE SINGLE COMPARATOR

ABSOLUTE MAXIMUM RATINGS (Ta=25℃, unless otherwise noted)

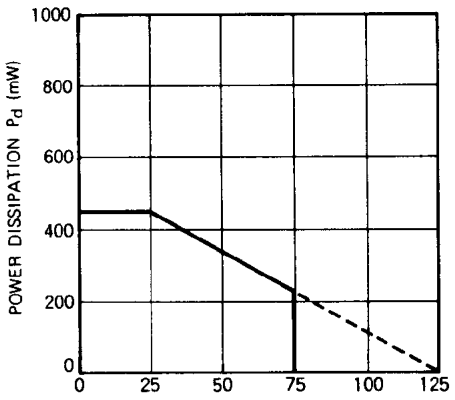
Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Source voltage		40	V
V_{IN}	Input voltage		$V_{CC}+0.3$	V
V_{ID}	Differential input voltage		20	V
I_{OL}	Output drive current		80	mA
V_{OH}	Output drive voltage		40	V
Pd	Power dissipation		450(L)/440(FP)	mW
K_θ	Thermal derating		4.5(L)/4.4(FP)	mW/℃
Topr	Operating temperature		−20～75	℃
Tstg	Storage temperature		−40～125	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃, V_{CC}=12V)

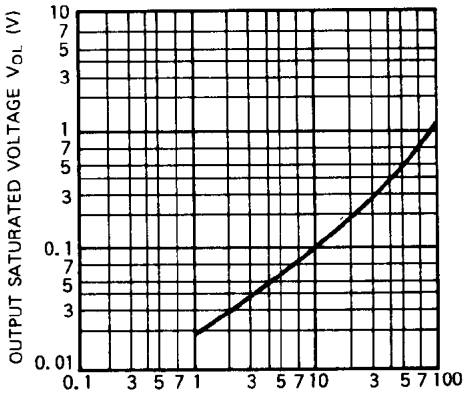
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_{CC}	Supply voltage		2.5		40	V
I_{CC}	Circuit current	Output "H"		0.3	0.7	mA
		Output "L"		1.0	1.5	
V_{IN1}	Inverted input voltage		2.0		$V_{CC}+0.3$	V
V_{IN2}	Non-inverted input voltage					V
I_{IN1}	Inverted input current			20	75	nA
I_{IN2}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

TYPICAL CHARACTERISTICS

THERMAL DERATING (MAXIMUM RATING)



OUTPUT SATURATED VOLTAGE VS. OUTPUT SINK CURRENT



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