M54473P/L

1/256 HIGH SPEED DIVIDER WITH TTL OUTPUT

DESCRIPTION

The M54473P/L is a semiconductor integrated circuit consisting of an high-speed 1/256 divider using emitter-coupled logic.

FEATURES

- High-speed operation (f_{max}=1.25GHz)
- TTL level output

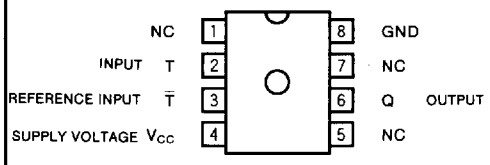
APPLICATION

Prescalers for PLL synthesized TV tuners, and general use in industrial and consumer digital equipment.

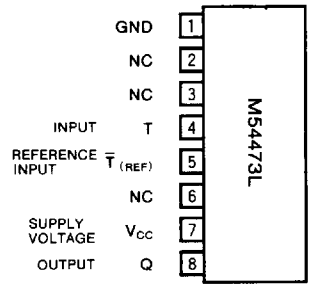
FUNCTION

The M54473P/L consists of a divider using emitter-coupled logic (ECL). When a frequency from 80 through 1,250MHz is applied to the input pin T, the 1/256 divided frequency is obtained.
The output Q is ECL level.

PIN CONFIGURATION (TOP VIEW)



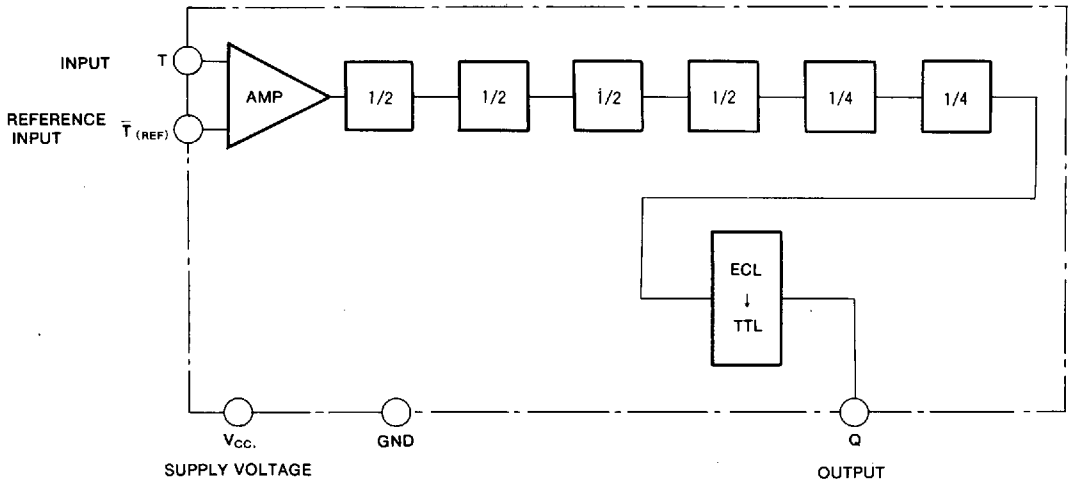
Outline 8P4



Outline 8P5

NC : No connection

BLOCK DIAGRAM



MITSUBISHI ELECTRIC

1/256 HIGH SPEED DIVIDER WITH TTL OUTPUT

ABSOLUTE MAXIMUM RATINGS (T_a=−20∼+75℃, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Supply voltage		−0.3∼7	V
V_I	Input voltage	T, $\overline{T}$ (REF)	0∼V_{CC}	V
P_d	Power dissipation	T_a=25℃	1.18	W
T_{opr}	Operating temperature		−20∼+75	℃
T_{stg}	Storage temperature		−55∼+125	℃

RECOMMENDED OPERATING CONDITIONS

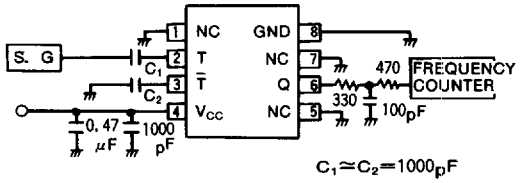
Symbol	Parameter	Conditions	Limits			Unit
			Min	Typ	Max	
V_{CC}	Supply voltage		4.5	5.0	5.5	V
V_{IN}	Input amplitude	f=80∼1250MHz	−4		4	dBm
I_{OL}	Low-level output current		0	1	2	mA

ELECTRICAL CHARACTERISTICS (V_{CC}=5±10%, T_a=−20∼+75℃, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{CC}	Supply current	V_{CC}=5.5V	30	40	60	mA
V_{IN1}	Input sensitivity 1	f_{IN}=80∼1100MHz	−16		4	dBm
V_{IN2}	Input sensitivity 2	f_{IN}=1100∼1250MHz	−4		4	dBm
V_O	Output amplitude	V_{CC}=5.0V, test circuit below	1.35			V_{PP}

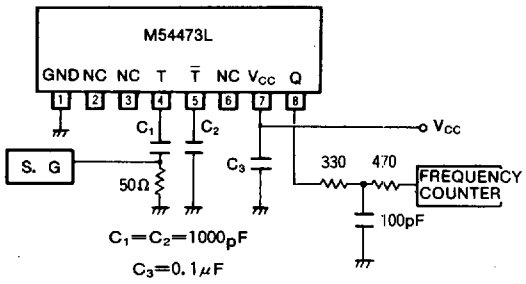
Typical values are at V_{CC}=5.0V, T_a=25℃.

TYPICAL CHARACTERISTICS



Note 1. *Normally NC pins should be grounded.
2. The probe capacitance and resistance for output measurement must have the characteristics of C_{IN} <10pF, R_{IN} > 1 MΩ

TEST CIRCUIT



TYPICAL CHARACTERISTICS

INPUT AMPLITUDE VS INPUT FREQUENCY