

500 MHz LOW VOLTAGE DUAL MODULUS PRESCALER

UPB569C
UPB569G

California Eastern Laboratories

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Supply Voltage	V_{cc}	-0.5 to +6.0	V
Input Voltage	V_{I1}	-0.5 to $V_{cc} + 0.5$	V
Input Voltage	V_{I2}^*	-0.5 to V_{cc}	V
Output Current	I_o	-10	mA
Storage Temperature	T_{stg}	-40 to +125	$^\circ\text{C}$

*BSV pin

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Supply Voltage	V_{cc}	2.9	3.3	5.5	V	
Ambient Temperature	T_a	-35	25	85	$^\circ\text{C}$	
Output Load Capacitance	C_L			10	pF	

ELECTRIC CHARACTERISTICS ($V_{cc} = 2.9$ to 5.5 V, $T_a = -35$ to 85°C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Supply Current	I_{cc1}		5.6	7.5	mA	$V_{cc} = 3.3$ V
Supply Current	I_{cc2}		7.0	10	mA	$V_{cc} = 5.5$ V
Output Voltage	V_o	0.8		1.4	Vp-p	OUT pin, $C_L = 10$ pF
Input Voltage	V_{in}	160		630	mVp-p	IN pin ($f_{in} = 100$ to 550 MHz)
High Level Input Voltage	V_{IH1}	$V_{cc} - 0.4$			V	PSC, M pin
Low Level Input Voltage	V_{IL1}			$0.4 V_{cc}$	V	PSC, M pin
High Level Input Current	I_{IH}			35	μA	PSC, M pin
Low Level Input Current	I_{IL}	-150			μA	PSC, M pin
High Level Input Voltage	V_{IH2}	2.7			V	BSV pin
Low Level Input Voltage	V_{IL2}	0		0.4	V	BSV pin
Supply Current	I_{cc3}			10	μA	BSV = Low
Operating Frequency	f_{in}	100		550	MHz	IN pin ($V_{in} = 160$ mVp-p)
Set Up Time	t_s			20	ns	PSC \rightarrow OUT

DIVISION RATIO CONTROL

M	PSC	DIVISION RATIO
L	H	$\div 64$
L	L	$\div 65$
H	H	$\div 32$
H	L	$\div 33$

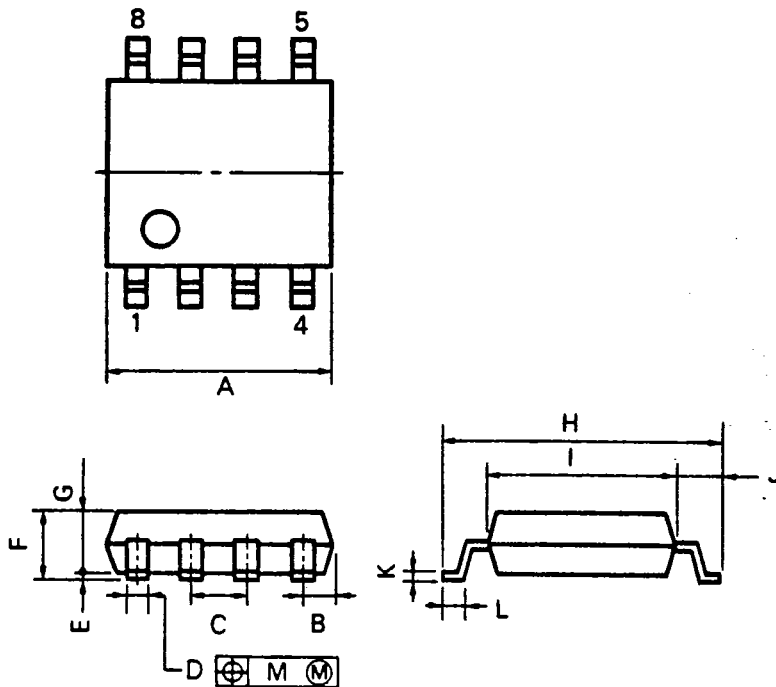
H: $V_{cc} - 0.4$ to V_{cc}

L: 0 to $0.4 V_{cc}$

PACKAGE DIMENSION

T-45-19-13

8 PIN PLASTIC SOP (225 mil)

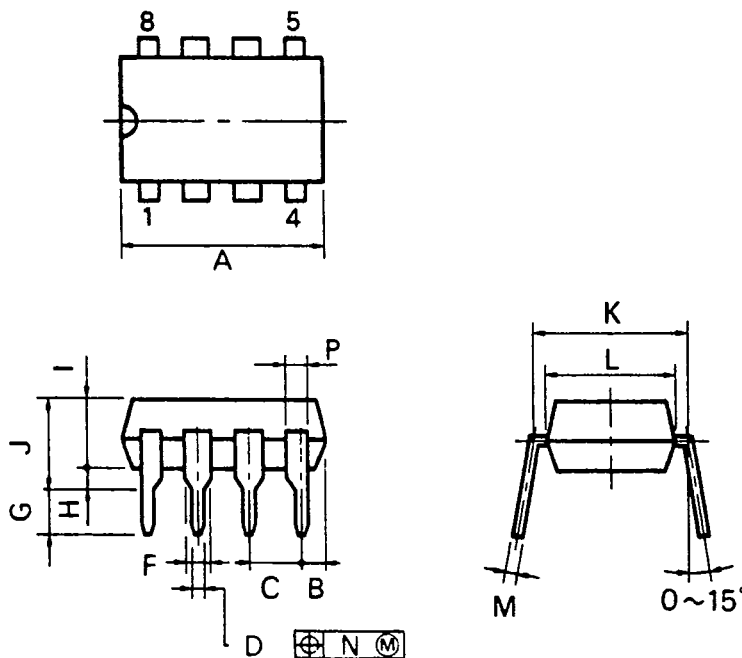


ITEM	MILLIMETERS	INCHES
A	5.70 MAX.	0.225 MAX.
B	0.94 MAX.	0.037 MAX.
C	1.27 (T.P.)	0.050 (T.P.)
D	0.40 $^{+0.10}_{-0.05}$	0.016 $^{+0.004}_{-0.002}$
E	0.1 $^{+0.1}_{-0.05}$	0.004 $^{+0.004}_{-0.002}$
F	1.8 MAX.	0.071 MAX.
G	1.49	0.059
H	6.5 $^{+0.3}_{-0.2}$	0.256 $^{+0.012}_{-0.010}$
I	4.4	0.173
J	1.1	0.043
K	0.15 $^{+0.10}_{-0.05}$	0.006 $^{+0.004}_{-0.002}$
L	0.6 $^{+0.2}_{-0.1}$	0.024 $^{+0.008}_{-0.006}$
M	0.12	0.005

NOTE

Each lead centerline is located within 0.12 mm (0.005 inch) of its true position (T.P.) at maximum material condition.

8 PIN PLASTIC DIP (300 mil)



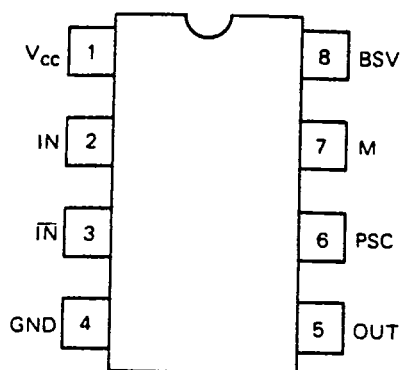
ITEM	MILLIMETERS	INCHES
A	10.16 MAX.	0.400 MAX.
B	1.27 MAX.	0.050 MAX.
C	2.54 (T.P.)	0.100 (T.P.)
D	0.50 $^{+0.10}_{-0.05}$	0.020 $^{+0.004}_{-0.002}$
F	1.4 MIN.	0.055 MIN.
G	3.2 $^{+0.3}_{-0.2}$	0.126 $^{+0.012}_{-0.010}$
H	0.51 MIN.	0.020 MIN.
I	4.31 MAX.	0.170 MAX.
J	5.08 MAX.	0.200 MAX.
K	7.62 (T.P.)	0.300 (T.P.)
L	6.4	0.252
M	0.25 $^{+0.10}_{-0.05}$	0.010 $^{+0.004}_{-0.002}$
N	0.25	0.01
P	0.9 MIN.	0.035 MIN.

NOTES

1) Each lead centerline is located within 0.25 mm (0.01 inch) of its true position (T.P.) at maximum material condition.

2) Item "K" to center of leads when formed parallel.

CONNECTION DIAGRAM (Top View)

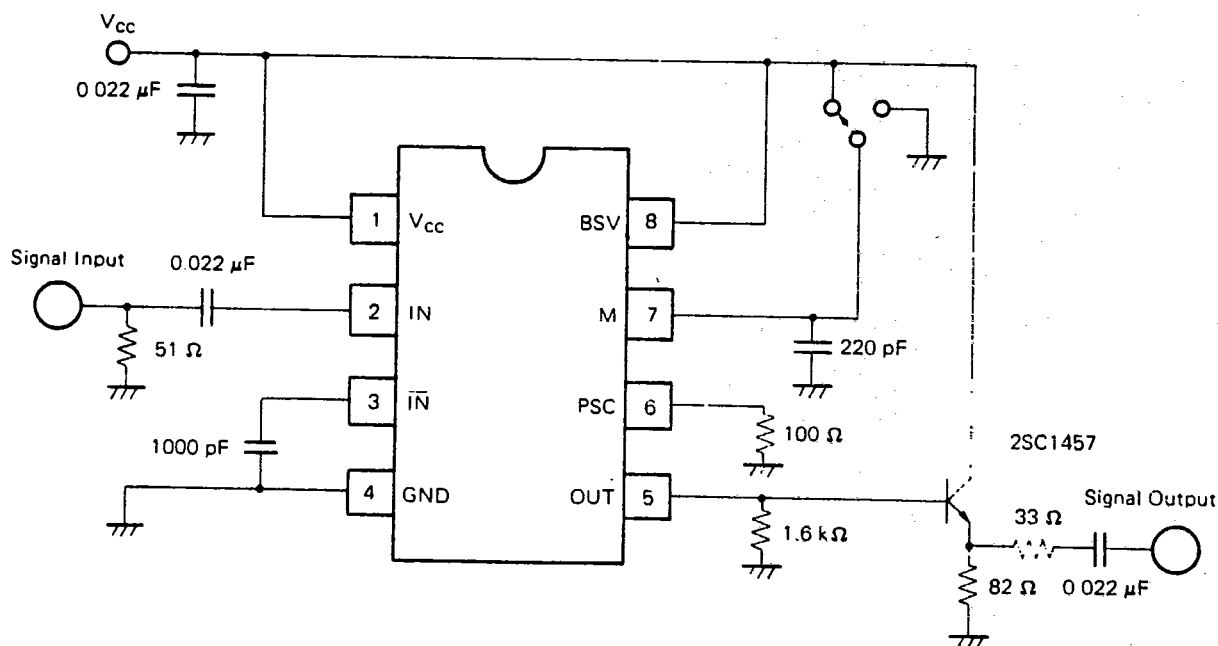


PIN No.	SYMBOL	FUNCTION
1	V _{cc}	Power Supply
2	IN	Signal Input (Positive Logic)
3	IN	Signal Input (Negative Logic)
4	GND	GND
5	OUT	Signal Output
6	PSC	Pulse Swallow Control
7	M	Division Ratio Control
8	BSV	Battery Save

Note: Battery Saving Mode

In case BSV input pin becomes "Low" level, battery saving mode starts. In battery saving mode, μ PB569 stops functioning and supply current becomes less than 10 μ A.

TEST CIRCUIT



EXCLUSIVE AGENT FOR NEC Corporation RF & MICROWAVE SEMICONDUCTOR PRODUCTS—U.S. & CANADA
 CALIFORNIA EASTERN LABORATORIES, INC. • Headquarters • 3260 Jay Street • Santa Clara, CA 95054 • (408) 988-3500 • Telex 34-6393/FAX 408-988-0279