

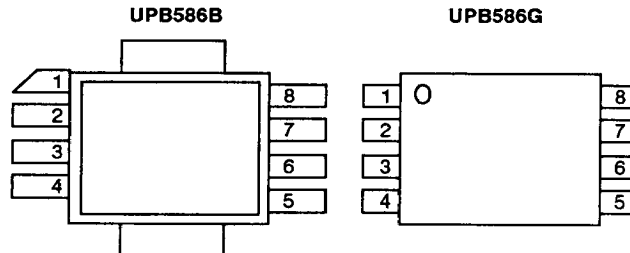
FEATURES

- **HIGH FREQUENCY OPERATION:** 2.5 GHz
- **WIDE BAND APPLICATION:** 0.5 to 2.5 GHz
- **SINGLE SUPPLY VOLTAGE:** $V_{CC} = 5\text{ V} \pm 10\%$

DESCRIPTION AND APPLICATIONS

The UPB586B is a divide-by-512/256 prescaler designed for telecommunication applications.

CONNECTION DIAGRAM (Top View)



PIN CONNECTIONS
 1. M 5. NC
 2. Input 6. NC
 3. Bypass 7. Output
 4. GND 8. VCC

ABSOLUTE MAXIMUM RATINGS

($T_A = 25^\circ\text{C}$, $Z_s = Z_L = 50\ \Omega$)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V_{CC}	Supply Voltage	V	0.5 to 6.0
V_i	Input Voltage	V	-0.5 to $V_{CC} + 0.5$
P_{IN}	Input Level	dBm	+10
P_T	Total Power Dissipation	W	1.5 ($T_C = +125^\circ\text{C}$)
T_{OP}	Operating Temperature	$^\circ\text{C}$	-55 to +125
T_{STG}	Storage Temperature	$^\circ\text{C}$	-65 to +200

RECOMMENDED OPERATING CONDITIONS

V_{CC}	Supply Voltage	V	4.5 to 5.5
T_{OP}	Operating Temperature	$^\circ\text{C}$	-20 to 75

ELECTRICAL CHARACTERISTICS ($T_A = -20$ to $+75^\circ\text{C}$, $V_{CC} = 5\text{ V} \pm 10\%$, $Z_s = Z_L = 50\ \Omega$)

PART NUMBER PACKAGE OUTLINE			UPB586B, UPB586G, UPB586P BF08, G08		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
$f_{IN(U)1}$	Input Frequency (upper) at $P_{IN} = -10\text{ dBm}$	GHz	2.5		
$f_{IN(U)2}$	Input Frequency (upper) at $P_{IN} = -15\text{ dBm}$	GHz	2.3		
$f_{IN(L)}$	Input Frequency (lower) at $P_{IN} = -15\text{ dBm}$	GHz			0.5
P_{IN1}	Input Level at $f_{IN} = 0.5$ to 2.3 GHz	dBm	-15		5
P_{IN2}	Input Level at $f_{IN} = 0.5$ to 2.5 GHz	dBm	-10		5
P_{OUT}^*	Output Level at $f_{IN} = 2\text{ GHz}$, $P_{IN} = 0\text{ dBm}$	dBm		-7	
I_{CC}^*	Supply Current	mA	19	28	37

* P_{OUT} and I_C specified at $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$

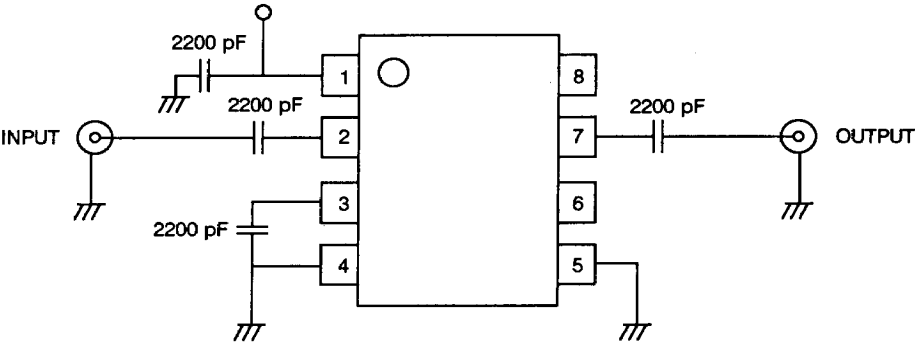
PRECAUTION

Avoid high static voltages or electric fields so that this device would not suffer any damage due to those voltages or fields.

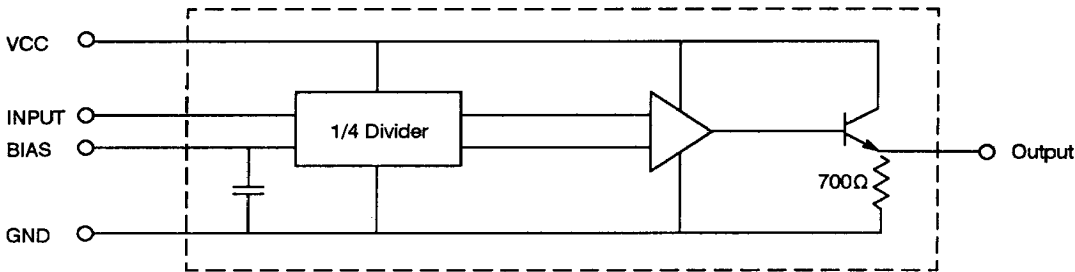
UPB586P, CHIP BONDING PAD CONNECTION

PIN NO.	SYMBOL	DESCRIPTION	
1	M	Division Ratio Control	
		M	Division Ratio
		L (GND)	1/512
		H (VCC)	1/256
2	INPUT	Signal Input Pin	
3	BYPASS	Input Bypass Pin shall be connected to Ground through Bypass Capacitor	
4	GND	Ground Pin	
5	NC	Non Connection	
6	NC	Non Connection	
7	OUTPUT	Output Pin	
8	VCC	Power Supply Pin	

APPLICATION CIRCUIT

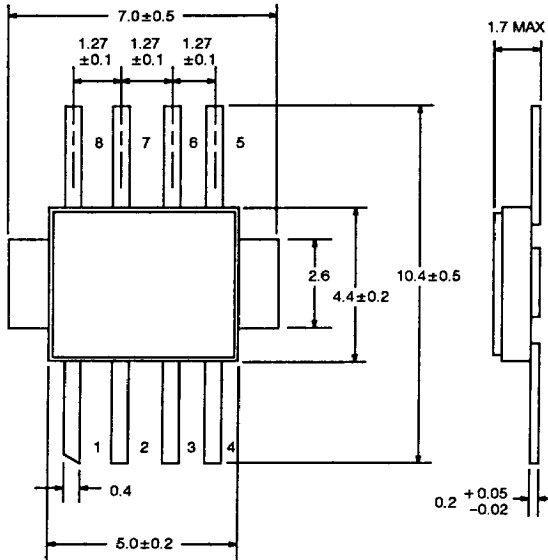


BLOCK DIAGRAM

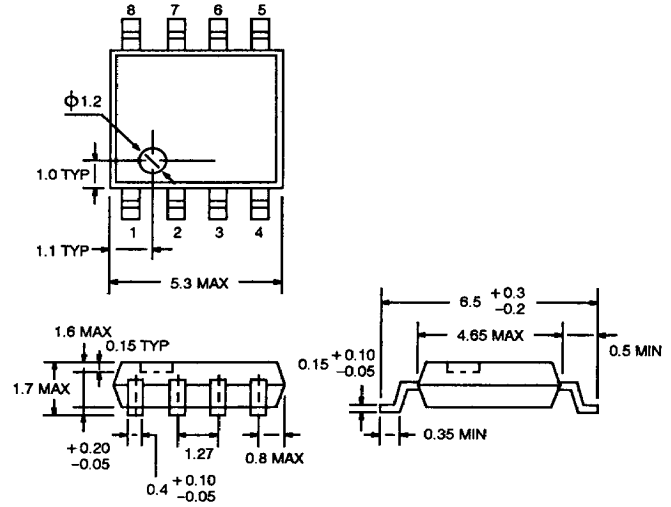


OUTLINE DIMENSIONS (Units in mm)

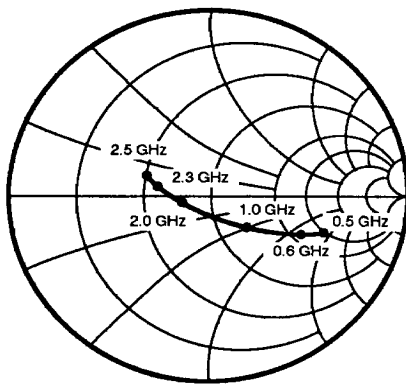
UPB586B
OUTLINE BF08



UPB586G
OUTLINE G08



INPUT IMPEDANCE FOR THE UPB586G



$V_{CC} = 5\text{ V}$, $I_C = 20\text{ mA}$,
 $Z_0 = 50\ \Omega$, $f = \text{GHz}^*$

*Frequency (GHz)	$Z_{IN} (\Omega)$	
0.5	157.9	-j99.9
0.6	136.6	-j79.9
0.8	111.4	-j61.3
1.0	90.1	-j43.4
1.2	74.2	-j29.7
1.4	62.9	-j20.2
1.6	54.0	-j13.7
1.8	45.7	-j8.6
2.0	39.8	-j4.3
2.2	33.8	-j0.1
2.3	31.1	+j1.6
2.5	28.0	+j4.5