

FEATURES

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

DESCRIPTION AND APPLICATIONS

The UPB585 series of devices are divide-by-4 silicon bipolar prescalers. They feature high frequency operation and operate from a single 5.0 volt supply. The series is available in two styles: 8 lead ceramic flat package (UPB585B), 8 pin mini-flat package (UPB585G), and in chip form (UPB585P). Applications include: synthesizer for DBS receiver and telecommunication applications.

RECOMMENDED OPERATING CONDITIONS

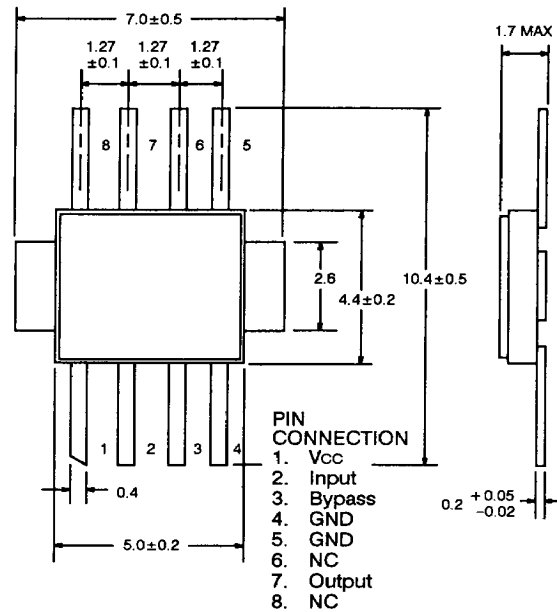
SYMBOLS	PARAMETERS	UNITS	RATINGS
V_{CC}	Supply Voltage	V	4.5 to 5.5
T_{OP}	Operating Temperature	°C	-20 to +75

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

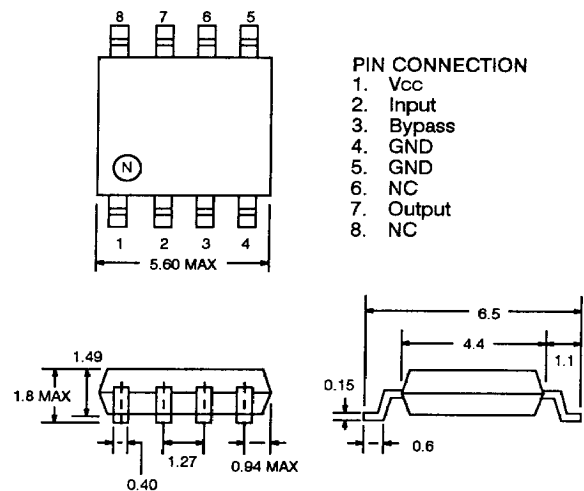
SYMBOLS	PARAMETERS	UNITS	RATINGS
V_{CC}	Supply Voltage	V	-0.5 to 6.0
V_{IN}	Input Voltage	V	-0.5 to ($V_{CC} + 0.5$)
P_{IN}	Input Power	dBm	+10
P_T	Power Dissipation UPB585B UPB585G	W mW	1.5 ($T_C = +125^\circ\text{C}$) 250
T_{OP}	Operating Temperature UPB585B UPB585G	°C °C	-55 to +125 -40 to +85
T_{STG}	Storage Temperature UPB585B UPB585G	°C °C	-65 to +200 -65 to +150

OUTLINE DIMENSIONS (Units in mm)

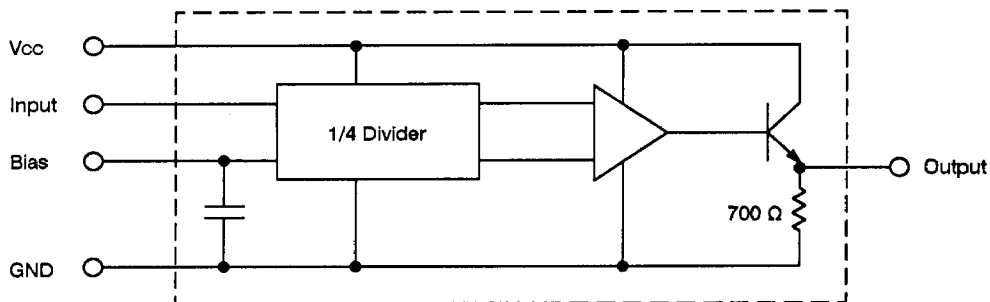
OUTLINE BF08



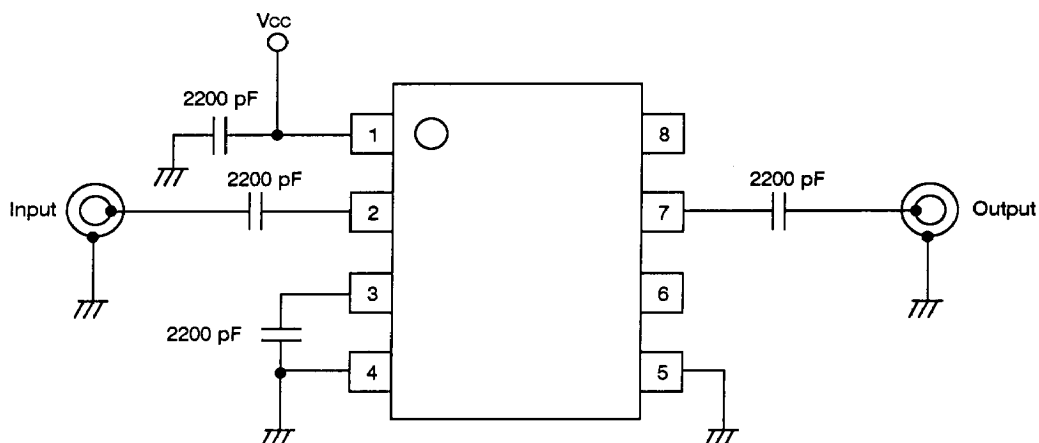
OUTLINE G08



BLOCK DIAGRAM



APPLICATION CIRCUIT

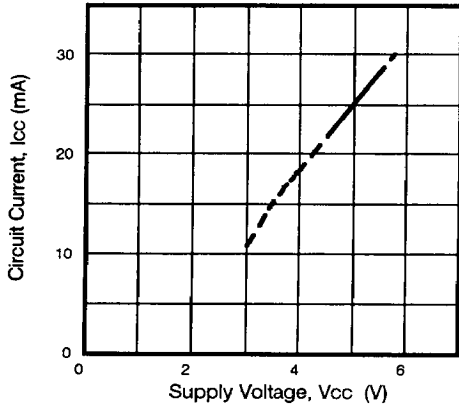


ELECTRICAL CHARACTERISTICS (TA = -20 to +75°C, Vcc = 5 V ±10%, ZS = ZL = 50 Ω)

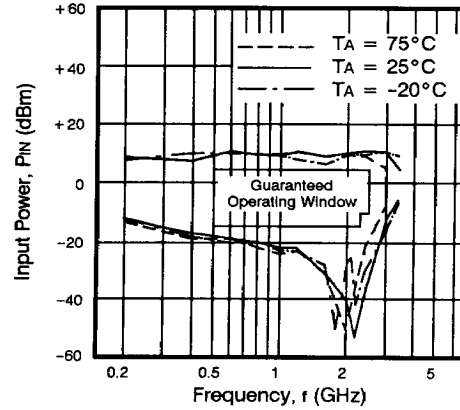
PART NUMBER			UPB585B, UPB585G, UPB585P		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I _{CC}	Supply Current at Vcc = 5 V, TA = 25°C	mA	18	26	34
f _{IN (u) 1}	Input Frequency (Upper) at P _{IN} = -15 dBm	GHz	2.3		
f _{IN (u) 2}	Input Frequency (Upper) at P _{IN} = -10 dBm	GHz	2.5		
f _{IN (l)}	Input Frequency (Lower) at P _{IN} = -15 dBm	GHz			0.5
P _{IN1}	Power Input at f _{IN} = 0.5 to 2.3 GHz	dBm	-15		+5
P _{IN2}	Power Input at f _{IN} = 0.5 to 2.5 GHz	dBm	-10		+5
P _{OUT}	Power Output at f _{IN} = 2 GHz, P _{IN} = 0 dBm, Vcc = 5 V, TA = 25°C	dBm	-9	-4	

TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

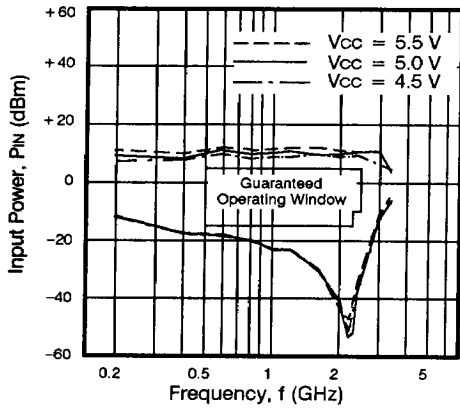
CIRCUIT CURRENT vs. SUPPLY VOLTAGE



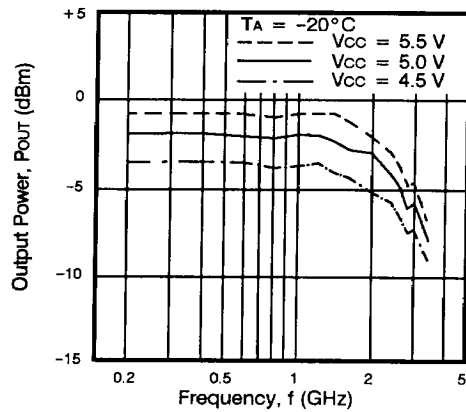
INPUT POWER vs. FREQUENCY vs. TEMPERATURE



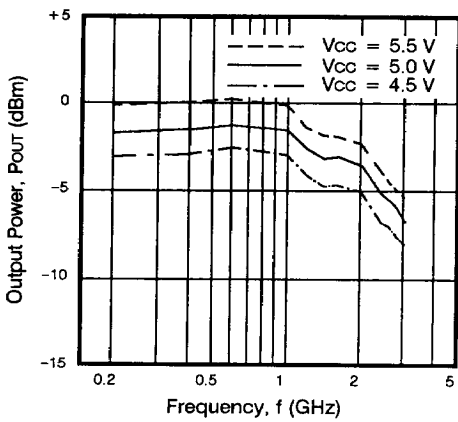
INPUT POWER vs. FREQUENCY vs. SUPPLY VOLTAGE



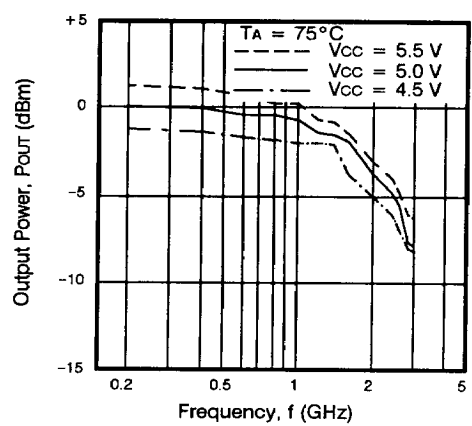
OUTPUT POWER vs. FREQUENCY vs. SUPPLY VOLTAGE



OUTPUT POWER vs. FREQUENCY vs. SUPPLY VOLTAGE

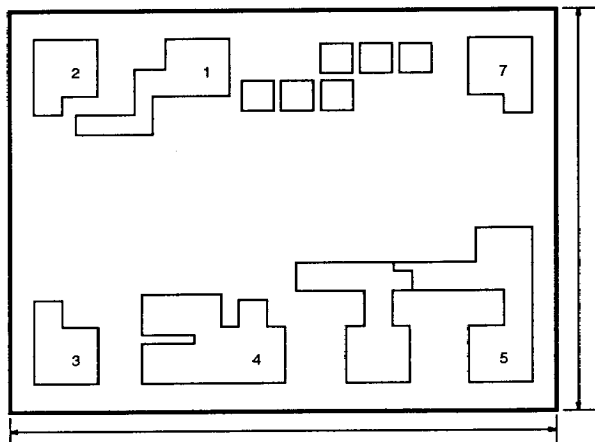


OUTPUT POWER vs. FREQUENCY vs. SUPPLY VOLTAGE



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UPG585 (CHIP)



Die Size: 0.91 mm x 0.80 mm
Thickness: 170 ± 30µm
Pad Size: 100 µm x 100 µm
Ti-Pt-Au Metallization

Pad Connections:

- 1. Vcc
- 2. INPUT
- 3. REF
- 4. GND
- 5. GND
- 7. OUTPUT