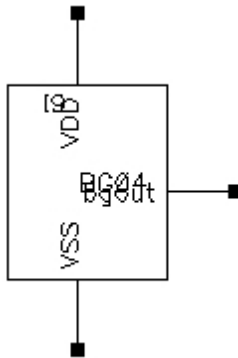


CMOS Bandgap Voltage Reference

FEATURES

- Output Voltage 1.26 V
- Small Area 0.092mm²
- Size x= 259μm y= 354μm
- Supply Voltage 4.5 to 5.5 V
- Temperature Range -40 to 125°C
- TK < 100ppm
- Small Supply Current 23μA

Symbol:



DESCRIPTION

The BG04 cell is a bandgap voltage reference with a constant output voltage of typ. 1.26 Volts.

Pin List:

VDDA	pos. supply voltage
VSSA	neg. supply voltage
BGOUT	bandgap voltage

Parameters :

Parameter	Symbol	Min	Typ	Max	Unit
Power Supply Range	Vdd	4.5	5.0	5.5	V
Temperature Range	Temp	-40	27	125	°C
DC Parameters					
Output voltage	Vref	<i>1.16</i>	1.26	<i>1.36</i>	V
abs. Voltage spread				<i>+/-100</i>	mV
Temperature Coeff. (-30 to 120 °C) (<i>-40 to 125°C</i>)	TK		23	< 100	ppm
Temp. Coeff. @ 27 °C	TKnom		0		ppm
Power Supply Current	Idd	<i>14</i>	23	<i>33</i>	μA
Power Consumption	Pdd	<i>63</i>	115	<i>182</i>	μW
Output Source Current	Isource	<i>0.18</i>	<i>0.24</i>	<i>0.32</i>	μA
Output Sink Current	Isink	<i>0.18</i>	<i>0.24</i>	<i>0.32</i>	μA
AC Parameters					
Output resistance	Rout	<i>34</i>	<i>46</i>	<i>60</i>	kΩ
PowerSupplyRej.Ratio Vdd@1kHz	PSRRVdd	<i>29</i>	<i>35</i>	<i>37</i>	dB
Transient Parameters					
Startup Time (1mV)	Tstart	<i>18</i>	<i>27</i>	<i>41</i>	μs
Noise Parameters					
Equ. Output Noise @ 1Hz	En1	<i>5.0</i>	<i>6.2</i>	<i>7.3</i>	μV/√Hz
Equ. Output Noise @ 1kHz	En1k	<i>0.35</i>	<i>0.46</i>	<i>0.58</i>	μV/√Hz

italic .. simulated

normal .. measured

Measurements were done with 5V and -30 to 120°C.

Output buffer is recommended !

$$tk = (vmax-vmin)/(tmax-tmin)/vout@27deg*10e6 \text{ [ppm]}$$