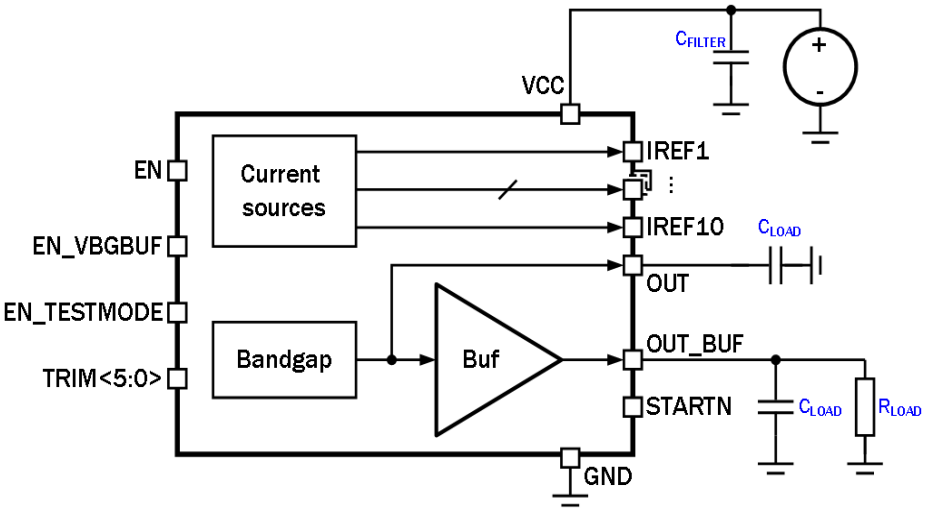
0.4V/250nA Bandgap voltage and current sources

OVERVIEW



055GF_BVR_01 the bandgap voltage reference generates temperature-compensated voltage due to mutual compensation of temperature dependence of bipolar diodes and resistors. It is a simple to configure and operate block, combining good parameters accuracy, small area and low current consumption. The block consists of bandgap, buffer and current sources. The bandgap produces on pin **OUT** voltage level around 0.4 V, which adjusted by a trimming codes. The buffer repeats the value of the reference voltage. Signals, **EN_VBGBUF** and **EN_TESTMODE**, control the buffer. Each current source delivers a current of 250 nA.

IP technology: GF CMOS 55nm.
IP status: silicon proven.
Area: 0.035mm^2.

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Supply voltage	V_{CC}	-	1.6	2.5	3.6	V
Operating temperature range	T_j	-	-40	+27	+85	°C
Output voltage	V_{out}	-	-	0.4	-	V
Output voltage accuracy	A	Non-trimmed	-	4	-	%
		Trimmed	-	1	-	
Trimming range of output voltage	R	-	-	±5	-	%
Output reference current	I_{ref}	-	200	250	300	nA
Current Consumption	I_{cc}	Buffer disabled	-	10	-	uA
	I_{cc1}	Buffer enabled, high impedance for buffer output	-	13.5	-	
	I_{cc2}	Buffer enabled, low impedance for buffer output	-	200	-	
Input logic-level low	V_{IL}	For digital signals	0	-	$0.3V_{CC}$	V
Input logic-level high	V_{IH}		$0.7V_{CC}$	-	V_{CC}	