

Analog IP Cell

Low Drop Linear Regulator

Linreg – XFAB XC10

General Description

This cell is a low dropout voltage linear regulator. The output current can be up to 20mA. The output voltage can be set with an external feedback divider. The amplifier is not compensated. To make the regulation loop stable an external capacitor is required (depending on the used load).

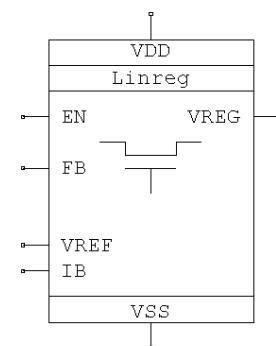
Ratings, Parameters and Conditions

Absolute Maximum Ratings						
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment
Operating Temperature	T _{OP}	-40		120	°C	
Supply Voltage	V _{DD}	-0.3		5.5	V	
Input Voltage	V _{IN}	-0.3		V _{DD} +0.7	V	
Output Voltage	V _{OUT}	-0.3		V _{DD} +0.7	V	

Electrical Parameters						
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment
Operating Temperature	T _{OP}	0		80	°C	
Supply Voltage	V _{DD}	3.0	3.5	4.5	V	
Current Consumption	I _{DD}			180	µA	
Standby Current	I _{SB}			1	nA	
Bias Current	I _B	2	5	20	µA	
Output Current	I _{OUT}			20	mA	
Output Voltage Drop	V _{DRP}			60	mV	I _{OUT} = 10mA, V _{OUT} = 2.5V
Open Loop Gain	A _{OL}	55		70	dB	
Reference Voltage	V _{REF}	1.225	1.235	1.245	V	

Interface and Symbol

IO-Description			
Interface	I/O	Function	Comment
EN	Input	Enable	
IB	Input	Bias current	
VREF	Input	Reference voltage	
FB	Input	Feedback voltage	
VREG	Output	High side regulated output	
VDD, VSS	Power	supply voltage	



Layout Size

370 µm x 200 µm = 0.08 mm²