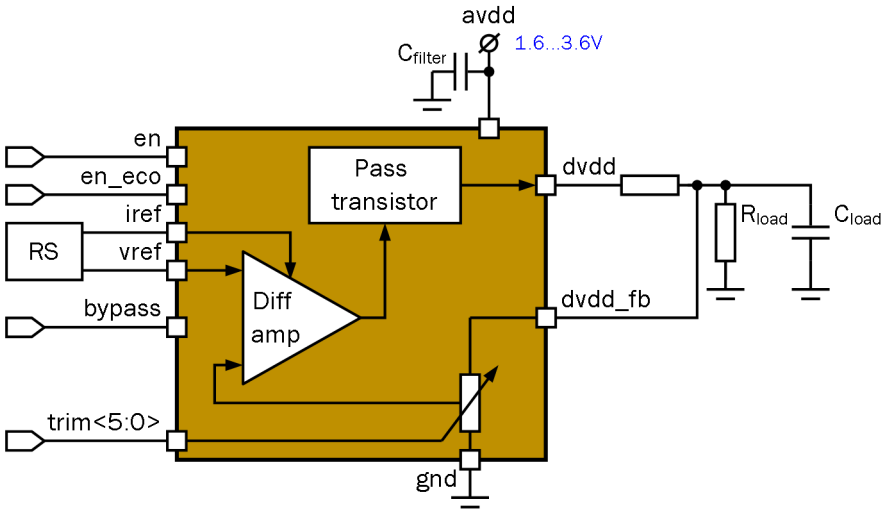
30 mA flash LDO voltage regulator (output voltage 1.8 ± 0.2 V)

OVERVIEW

055GF_LDOVR_04 is used to maintain a stable output voltage at varying input voltage. The voltage regulator consists of a differential amplifier, pass transistor and resistor's divider. Differential amplifier compares reference voltage with voltage from a feedback divider and adjusts the impedance of a PMOS transistor for stabilization of output voltage at a set level. The output voltage adjustment is defined by the trimming code **trim<5:0>**. The block has low supply current and allows high current load.



IP technology: Global Foundries CMOS 55nm.
IP status: silicon proven.
Silicon area: 0.024mm^2.

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions		Value			Units
				min	typ.	max	
Supply voltage	V_{avdd}	-		1.6	2.5	3.6	V
Operating temperature range	T_j	-		-40	27	85	°C
Reference current input	I_{ref}	-		-	250	-	nA
Reference voltage input	V_{ref}	-		-	0.4	-	V
Output voltage	V_{dvdd}	Trim<5:0>= “011111”, V_{avdd}≥1.85V		-	1.8	-	V
Trimming range of output voltage	ΔV_{dvdd}	-		-	±11	-	%
Load capacitance	C_{load}	-		-	0.5	-	nF
Maximum load current	I_{load}	Output regulation mode	Normal mode	-	30	-	mA
			Economy mode	-	3	-	
Current consumption	I_{cc}	Output regulation mode	Normal mode	-	20	-	uA
			Economy mode	-	5	-	
Input logic-level low	V_{IL}	For input digital signals		0	-	0.3*V_{avdd}	V
	V_{IH}			0.7*V_{avdd}	-	V_{avdd}	