

Power management unit

OVERVIEW

PMU is designed to supply embedded integrated circuits with stable and precise voltage and 1%-accurate clock frequency. It integrates 4 LDOs and 3 oscillators:

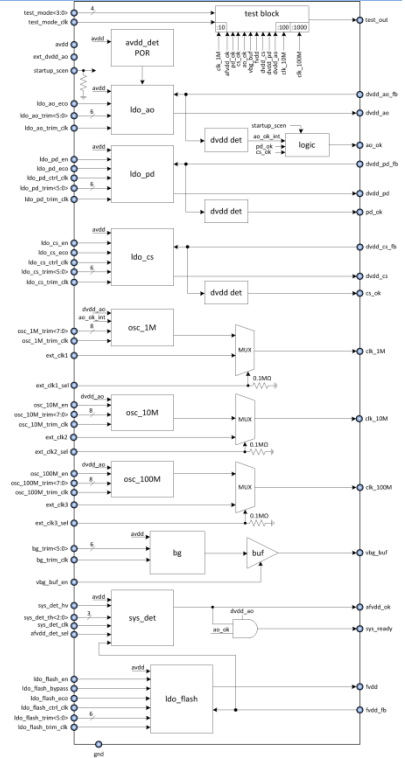
- “Always ON” LDO to supply circuits that are supposed to be always on;
- “Powered Down” LDO to supply digital circuits of “Powered Down” domain
- “Context Safe” LDO to supply digital circuits of “Context Safe” domain
- “Flash” LDO to supply flash memory
- 1.024 MHz oscillator
- 10 MHz oscillator
- 100 MHz oscillator

All LDOs have controllable output voltage level and are complemented with VDD detectors to monitor output voltage value. All LDOs may function in two modes: full power mode and ECO mode to save battery charge if high performance of the system is not required.

IP technology: Global Foundries 55nm CMOS

IP status: pre-silicon verification

Total area: 0.27mm²



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Input supply voltage	avdd	-	1.6	-	3.6	V
Output voltage	dvdd_ao	-	-	1.2	-	V
Trim range		-	±0.1	-	-	V
Load capacitance	Cload_ao	-	-	0.1	4	nF
Load current	Iload_ao	Full/Eco mode	-	2/200	-	mA/uA
Quiescence current	Iq_ao	Full/Eco mode	-	15/3	-	uA
Output voltage	dvdd_pd	Setting1 (default)	-	1.2	-	V
Trim range		For each voltage	±0.1	-	-	V
Load capacitance	Cload_pd	-	-	0.5	20	nF
Load current	Iload_pd	Full/Eco mode	-	30/2	-	mA
Quiescence current	Iq_pd	Full/Eco mode	-	15/3	-	uA
Output voltage	dvdd_cs	Setting1 (default)	-	1.2	-	V
Trim range		For each voltage	±0.1	-	-	V
Load capacitance	Cload_cs	-	-	0.5	20	nF
Load current	Iload_cs	Full/Eco mode	-	30/2	-	mA
Quiescence current	Iq_cs	Full/Eco mode	-	15/3	-	uA
Output voltage	fvdd	-	-	1.8	-	V
Trim range		-	±10	-	-	%
Load capacitance	Cload_flash	-	-	0.5	-	nF
Load current	Iload_flash	Full/Eco mode	-	30/3	-	mA
Quiescence current	Iq_flash	Full/Eco mode	-	20/5	-	uA