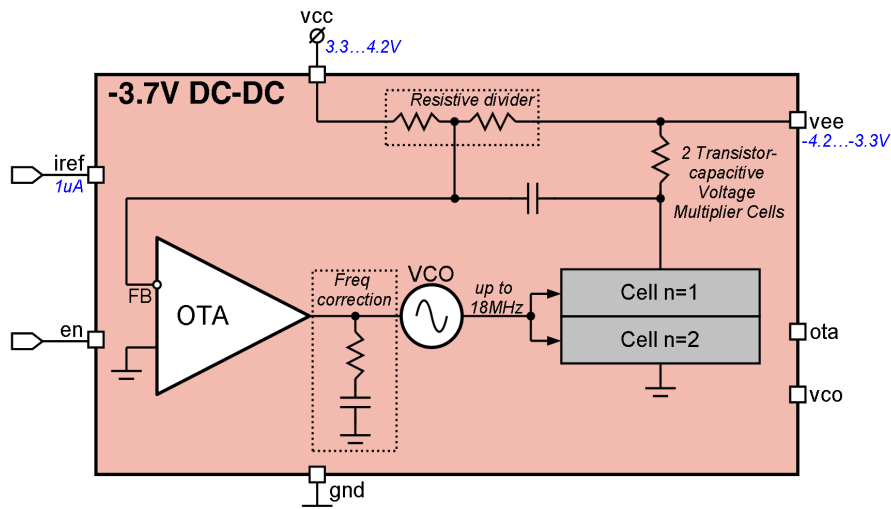


3.3 - 4.2V to -3.7V step-down DC/DC converter

OVERVIEW

180XFAB_DCDC_05 is capable to generate $-4.2V \div -3.3V$ ($-3.7V$ typical value) voltage and can maintain $50\mu A$ load for $-3.7V$ output. The block consists of OTA and transistor-capacitive multiplier cells. The DC/DC is used for forming negative supply. Upon power-up to typical $3.7V$ voltage at the fully charged $100nF$ output capacitor connected, slew rate of output voltage will be limited of the internal frequency correction circuits and is approximately $4.3 V/\mu s$. Start-up time is increased with increasing capacitor nominal value proportionally.



IP technology: XFAB XT018.

IP status: silicon proven.

Area: $0.179mm^2$.

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Input supply voltage	V_{CC}	-	3.3	3.7	4.2	V
Operating temperature range	T_j	-	0	+27	+60	$^{\circ}C$
Reference current	I_{REF}	-	-	1	-	μA
Current consumption	I_{CC}	$V_{CC} = 3.7V$	-	61	-	μA
Power consumption	P_{CC}	$V_{CC} = 3.7V$	-	225.7	-	μW
Load current	I_{DCDC_LOAD}	-	-	50	-	μA
Upper switch current limit	I_{LIM}	-	-	350	-	μA
Output voltage	V_{EE}	-	-4.2	-3.7	-3.3	V
Slew rate of output voltage	S_{RATE}	$V_{CC} = 3.7V, C_{LOAD} = 100nF$	-	4.3	-	$V/\mu s$
Load capacitance	C_{LOAD}	-	-	100	-	nF
Input logic-level low	V_{IL}	-	0	-	0.3	V
Input logic-level high	V_{IH}	-	$V_{CC} - 0.3$	-	V_{CC}	V