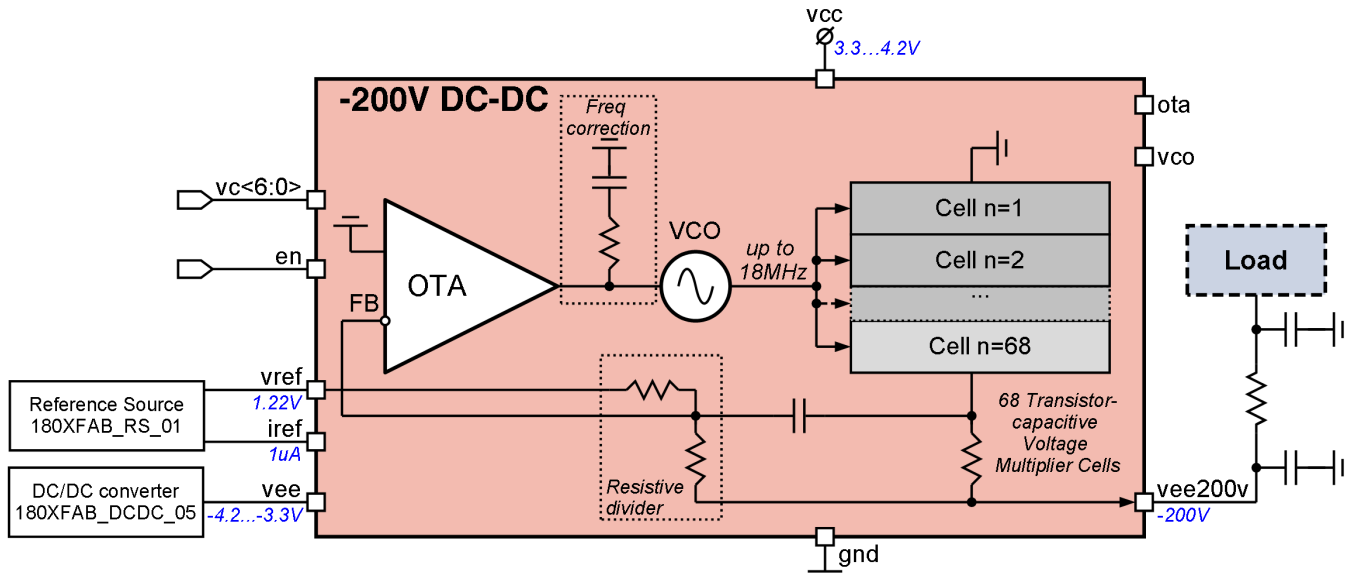


3.3 - 4.2V to 0 – minus 200V step-down DC/DC converter
OVERVIEW


180XFAB_DCDC_04 is a DC/DC step-down voltage converter that generates -200V output voltage from 3.3V to 4.2V. The DC/DC consists of OTA and transistor-capacitive voltage multiplier cells. The block is designed for no load at the output at 41uA current consumption for 3.7V input voltage and -155V output voltage a. Shutdown mode is activated by setting **en** to “0” and turns off the DC/DC converter. Current consumption decrease with output voltage increasing. It will take 20ms to charge external 1nF capacitor from 0 to -200V.

IP technology: XFAB XT018.

IP status: silicon proven.

Area: 0.97mm².

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Input supply voltage	V _{CC}	-	3.3	3.7	4.2	V
	V _{EE}	V _{EE} = -V _{CC}	-4.2	-3.7	-3.3	
Operating temperature range	T _j	-	0	+27	+60	°C
Reference voltage	V _{REF}	-	-	1.22	-	V
Reference current	I _{REF}	-	-	1	-	uA
Current consumption	I _{CC}	V _{CC} = 3.7V, V _{EE200V} = -155V	-	41	-	uA
Power consumption	P _{CC}	V _{CC} = 3.7V, V _{EE200V} = -155V	-	151.7	-	uW
Load current	I _{DCDC_LOAD}	-	-	0	-	uA
Output voltage	V _{EE200V}	Minimum	-210	-200	-190	V
		Maximum	-	0	-	
Output voltage step	V _{STEP}	@V _{EE200V} from 0V to ~ minus171V	-	-	2.7	V
		@V _{EE200V} from ~ minus 171.7V to minus 210V	-	-	0.7	
Load capacitance	C _{LOAD}	-	-	1	-	nF
Input logic-level low	V _{IL}	-	0	-	0.3	V
Input logic-level high	V _{IH}	-	V _{CC} - 0.3	-	V _{CC}	V