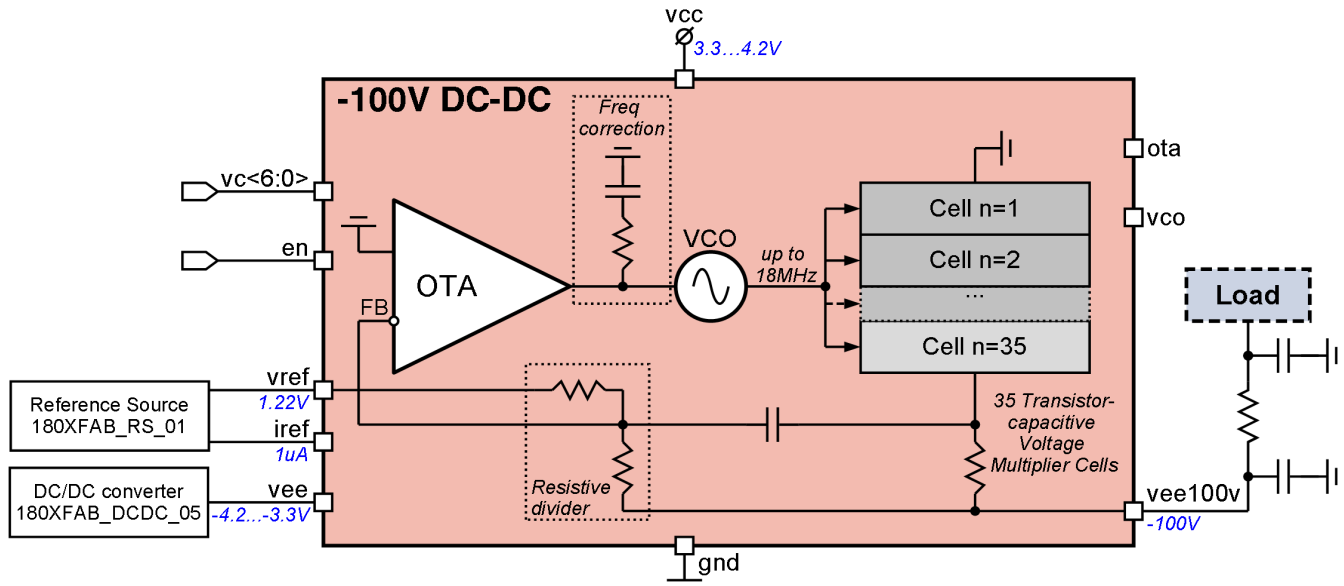


**3.3 - 4.2V to 0 - minus 100V step-down DC/DC converter**
**OVERVIEW**


180XFAB\_DCDC\_02 is a DC/DC step-down voltage converter that generates -100V output voltage from 3.3V to 4.2V power supply. The output voltage can be smoothly adjusted from 0V to -100V. The DC/DC converter contains of OTA and transistor-capacitive voltage multiplier cells. The block is designed for 44uA current consumption for 3.7V input voltage and -100V output voltage. Output current and current consumption decrease with output voltage increasing. It will take 20ms to charge external 22nF capacitor from 0 to -100V.

IP technology: XFAB XT018.

IP status: silicon proven.

Area: 1.37mm<sup>2</sup>.

**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	$I_{CC}$	$V_{CC} = 3.7V, V_{EE100V} = -100V$	-	44	-	uA
Power consumption	$P_{CC}$	$V_{CC} = 3.7V, V_{EE100V} = -100V$	-	162.8	-	uW
Load current	$I_{DCDC\_LOAD}$	$V_{CC} = 3.7V$	-	50	230	uA
Output voltage	$V_{EE100V}$	Minimum	-105	-100	-95	V
		Maximum	-	0	-	V
Output voltage step	$V_{STEP}$	@ $V_{EE100V}$ from 0V to ~-83.7V	-	-	-1.3	V
		@ $V_{EE100V}$ from ~-84.5V to -105V	-	-	-0.4	
Efficiency	$E$	$V_{EE100V} = -100V, V_{CC} = 3.7V, I_{DCDC\_LOAD} = 50uA$	-	33	-	%
Load capacitance	$C_{LOAD}$	-	-	22	-	nF
Input logic-level high	$V_{IH}$	-	$V_{CC} - 0.3$	-	$V_{CC}$	V
Input logic-level low	$V_{IL}$	-	0	-	0.3	V