Summary of equations for DC/DC, LDO and loads electrical characteristics.

		LDO	DC/DC	Load
Input	$V_{IN\ MIN}$	$V_{OUT\ SOURCE\ MIN}$		
	$V_{IN\ TYP}$	$V_{OUT\ SOURCE\ TYP}$		
	$V_{IN\ MAX}$	$V_{OUT\ SOURCE\ MAX}$		
	$I_{IN\ MIN}$ (*)	$I_{OUT\ MIN} + I_{Q\ MIN}$	$P_{IN\ MIN} / V_{IN\ MAX}$	Set by components
	$I_{IN\ TYP}$ (*)	$I_{OUT\ TYP} + I_{Q\ TYP}$	$P_{IN\ TYP} / V_{IN\ TYP}$	
	$I_{IN\ MAX}$(*)	$I_{OUT\ MAX} + I_{Q\ MAX}$	$P_{IN\ MAX} / V_{IN\ MIN}$	
	$P_{IN\ MIN}$	$V_{IN\ MIN} . I_{IN\ MIN}$	$P_{OUT\ MIN}$ / Efficiency	$V_{IN\ MIN} . I_{IN\ MIN}$
	$P_{IN\ TYP}$	$V_{IN\ TYP} . I_{IN\ TYP}$	$P_{OUT\ TYP}$ / Efficiency	$V_{IN\ TYP} . I_{IN\ TYP}$
	$P_{IN\ MAX}$	$V_{IN\ MAX} . I_{IN\ MAX}$	$P_{OUT\ MAX}$ / Efficiency	$V_{IN\ MAX} . I_{IN\ MAX}$
Output	$V_{OUT\ MIN}$	Set by designer		N/A
	$V_{OUT\ TYP}$			
	$V_{OUT\ MAX}$			
	$I_{OUT\ MIN}$	$\sum(V_{IN\ MIN\ CHILDREN})$		
	$I_{OUT\ TYP}$	$\sum(V_{IN\ TYP\ CHILDREN})$		
	$I_{OUT\ MAX}$	$\sum(V_{IN\ MAX\ CHILDREN})$		
	$P_{OUT\ MIN}$	$V_{OUT\ MIN} . I_{OUT\ MIN}$		
	$P_{OUT\ TYP}$	$V_{OUT\ TYP} . I_{OUT\ TYP}$		
	$P_{OUT\ MAX}$	$V_{OUT\ MAX} . I_{OUT\ MAX}$		
Loss	$P_{LOSS\ MIN}$	$P_{IN\ MIN} - P_{OUT\ MIN}$		
	$P_{LOSS\ TYP}$	$P_{IN\ TYP} - P_{OUT\ TYP}$		
	$P_{LOSS\ MAX}$	$P_{IN\ MAX} - P_{OUT\ MAX}$		

(*) Note for DC/DC input values:
Be careful, when maximum (or minimum) values are displayed.
This equation is obviously true: $P_{IN} = U_{IN} . I_{IN}$
But this equation is false: $P_{IN\ MAX} = U_{IN\ MAX} . I_{IN\ MAX}$

The input power only depends on the output power and the efficiency: it is fixed by the design.
The input voltage only depends on the source: it is fixed by the designer.
So the current will adapt depending on those two parameters because P=UI.

The maximum current will be raised when the voltage is low, to balance the equation.