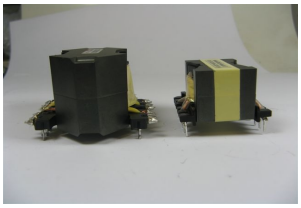
Comparative report of mains inductive components of ST Microelectronics 250W Grid Connected Micro-inverter

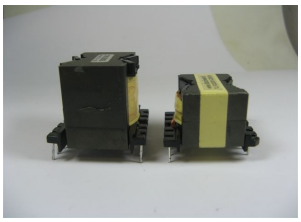
DC/DC stage transformer

	A mm	B mm	H mm	Overall Footprint mm²	Overall volume mm³	Weight gr	Trise °C
Originary (benchmark)	41,9	49,3	30,3	2067	62531	107	54,4
Itacoil sample	32,5	34,2	22,2	1112	24706	54	54,8
	-22%	-31%	-27%	-46%	-60%	-50%	1%



DC/DC stage inductor

	A mm	B mm	H mm	Overall Footprint mm²	Overall volume mm³	Weight gr	Trise °C
Originary (benchmark)	32,5	34,2	32,7	1112	36358	96	40,0
Itacoil sample	32,5	34,2	22,2	1112	24706	59	40,0
	0%	0%	-32%	0%	-32%	-38%	0%



Using different mix of components (one original inductor or both, with the original transformer or with the Itacoil transformer, etc) T_rise slightly different has been detected (always within a few °C). The temperatures are referred to the surface hot-spot. Considering the small size (say higher Rth), power loss are reduced by about -15% in both components, while the cost reduction is evident.