

Power Integrations® RDR-399 12V 1A Flyback converter based on *TinySwitch™-4 TNY288PG*

Original Vs TSLE20124 comparative test

| | Original | itacoil® | |
|---|---------------|---------------|-------------------|
| 230Vac input, full load | | | |
| Input voltage | 229,95 | 229,95 | Vac |
| Input power | 14,81 | 14,56 | W |
| Input current | 0,172 | 0,176 | Arms |
| Output voltage | 12,34 | 12,30 | V |
| Output current | 1,001 | 1,001 | A |
| Output power | 12,35 | 12,31 | W |
| Efficiency | 83,4% | 84,5% | % |
| Temperatures | | | |
| Ambient | 25,6 | 24,7 | °C |
| Transf. Winding T _{rise} | 28,4 | 25,7 | °C |
| Transf. Core T _{rise} | 29,0 | 24,2 | °C |
| Controller T _{rise} | 37,2 | 36,2 | °C |
| Efficiency average 90-115-230-264Vac (full load) | | | |
| | 83,3% | 84,1% (+0,8%) | % |
| Transformer | | | |
| L x W x H | 2,16X2,59X2,1 | 2,09X2,48X1,6 | cm |
| overall footprint | 5,59 | 5,18 (-7%) | cm ² |
| overall volume | 11,75 | 8,29 (-29%) | cm ³ |
| weight | 17,8 | 12,0 (-33%) | gr |
| power density | 1,02 | 1,45 (+42%) | W/cm ³ |

TEST CONDITIONS

Test performed on Power Integrations™ RD-399 demo-board, flyback converter based on TNY288PG. [\(demo-board user guide\)](#)

Both transformers have been connected by wire leads, due to the different pin layout, to assure the same conditions. Such assembly slightly decrease the efficiency.

Both transformer and L1 have been replaced with our products TSLE20124 and SDL0810102 during the 2nd part of the test.

TEST RESULTS

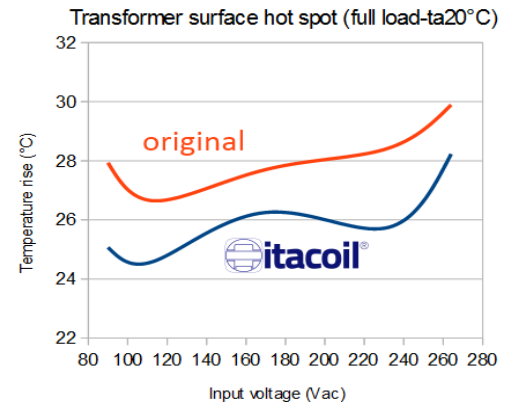
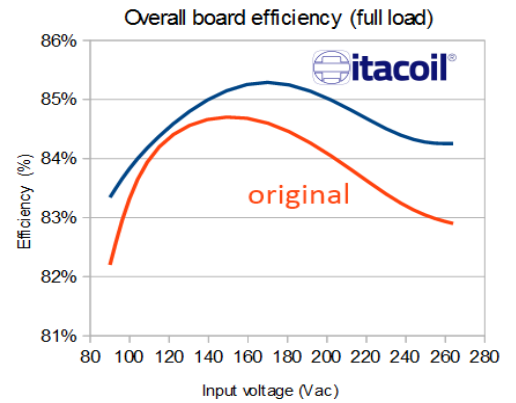
The following improvements have been achieved with Itacoil components

- better efficiency
- smaller dimensions
- lower temperature rise, despite the smaller dimensions - this means very lower transformer power loss
- no significant change in no load power consumption, power factor, THD

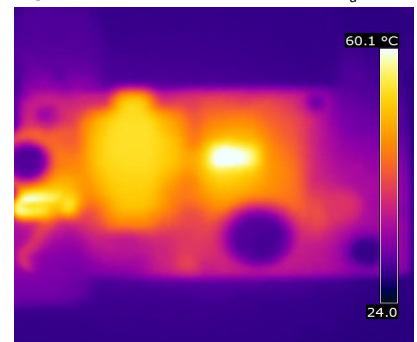
Available replacement components also for "L2-ferrite bead"

BENEFITS OF TRANSFORMER DESIGN BY ITACOIL® PROPRIETARY SOFTWARE

- smaller components
- reduced power loss and costs improvement
- best efficiency
- **first time success of your project**



original transformer 230Vac 12,3W t_a25,6°C



Itacoil transformer 230Vac 12,3W t_a24,7°C

