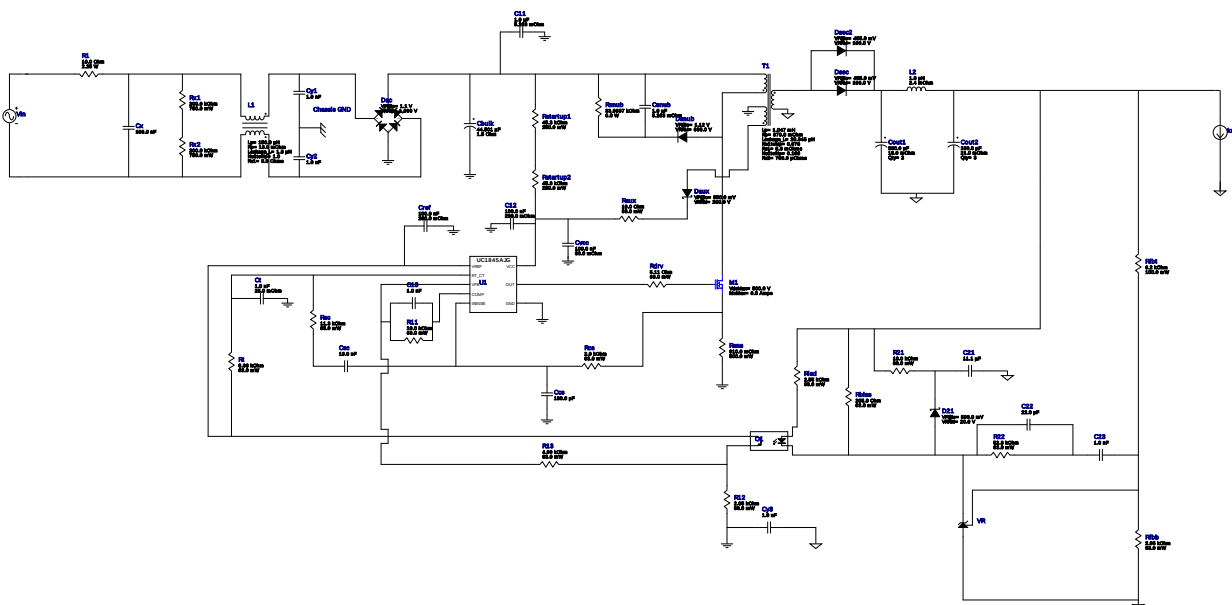


## WEBENCH® Design Report

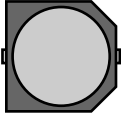
Design : 1165565/10 UC1845AJ  
UC1845AJ 110.0V-250.0V to 5.00V @ 5.0A

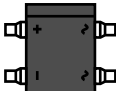
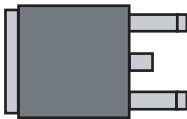
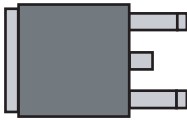
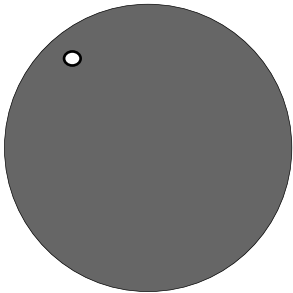
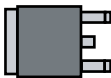


1. The EMI filter selected here contains the estimated values. The real numbers will depend on the attenuation needed at a particular frequency.

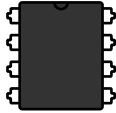
### Electrical BOM

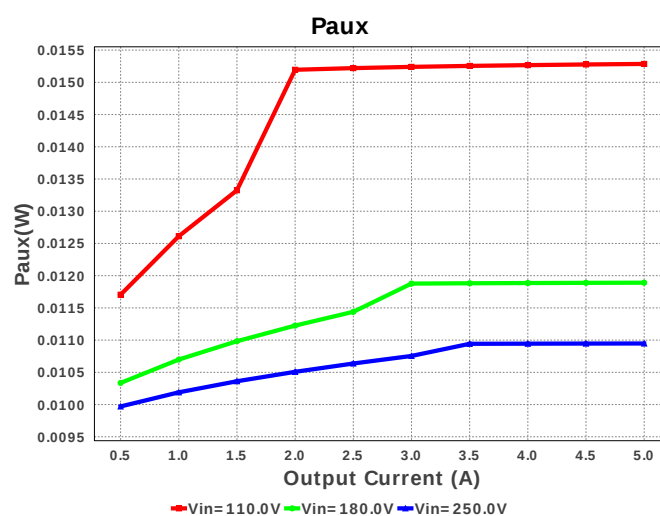
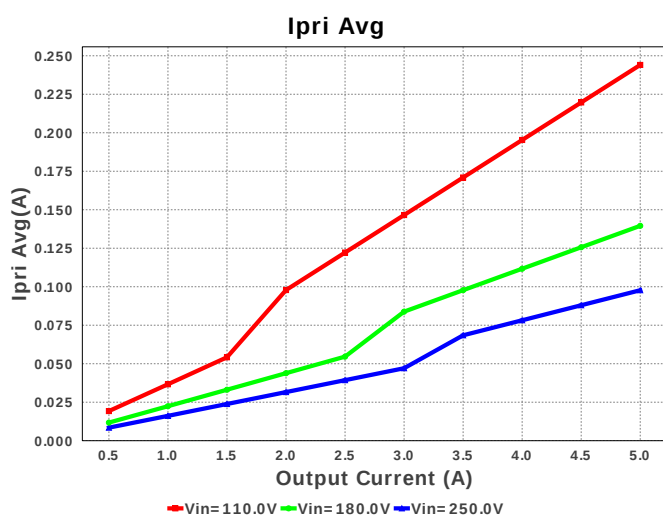
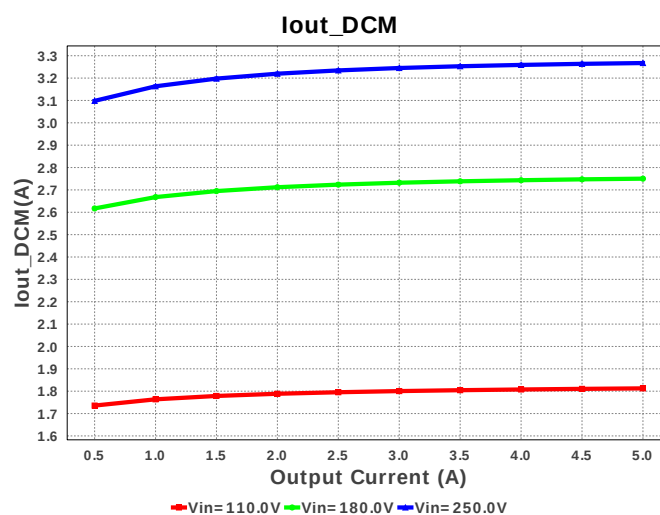
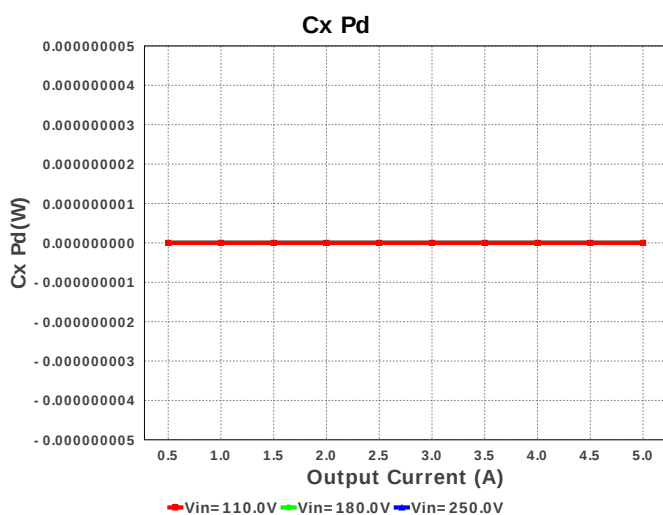
| #  | Name  | Manufacturer              | Part Number                         | Properties                                                            | Qty | Price  | Footprint                                                                                                        |
|----|-------|---------------------------|-------------------------------------|-----------------------------------------------------------------------|-----|--------|------------------------------------------------------------------------------------------------------------------|
| 1. | C11   | TDK                       | C5750X6S2W105K<br>Series= X6S       | Cap= 1.0 uF<br>ESR= 5.263 mOhm<br>VDC= 400.0 V<br>IRMS= 0.0 A         | 1   | \$1.19 | <br>2220 54 mm <sup>2</sup> |
| 2. | C12   | AVX                       | 08053C104KAT2A<br>Series= X7R       | Cap= 100.0 nF<br>ESR= 280.0 mOhm<br>VDC= 25.0 V<br>IRMS= 0.0 A        | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>  |
| 3. | C13   | Samsung Electro-Mechanics | CL21C102JBCNFNC<br>Series= C0G/NP0  | Cap= 1.0 nF<br>VDC= 50.0 V<br>IRMS= 0.0 A                             | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>  |
| 4. | C21   | CUSTOM                    | CUSTOM<br>Series= ?                 | Cap= 11.1 uF<br>VDC= 10.0 V<br>IRMS= 0.0 A                            | 1   | NA     | CUSTOM 0 mm <sup>2</sup>                                                                                         |
| 5. | C22   | Kemet                     | C0805C220K3GACTU<br>Series= C0G/NP0 | Cap= 22.0 pF<br>VDC= 25.0 V<br>IRMS= 0.0 A                            | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>  |
| 6. | C23   | Samsung Electro-Mechanics | CL21C102JBCNFNC<br>Series= C0G/NP0  | Cap= 1.0 nF<br>VDC= 50.0 V<br>IRMS= 0.0 A                             | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>  |
| 7. | Cbulk | CUSTOM                    | CUSTOM<br>Series= ?                 | Cap= 44.501 uF<br>ESR= 1.5005 Ohm<br>VDC= 424.26 V<br>IRMS= 551.49 mA | 1   | NA     | CUSTOM 0 mm <sup>2</sup>                                                                                         |
| 8. | Ccs   | Kemet                     | C0805C181K5GACTU<br>Series= C0G/NP0 | Cap= 180.0 pF<br>VDC= 50.0 V<br>IRMS= 0.0 A                           | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>  |

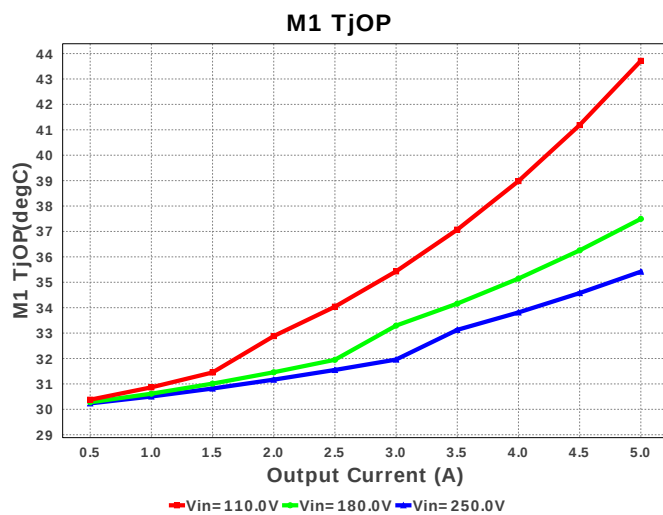
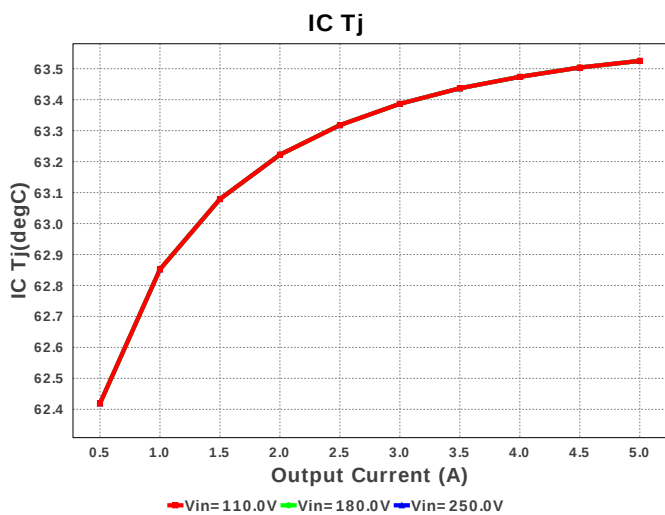
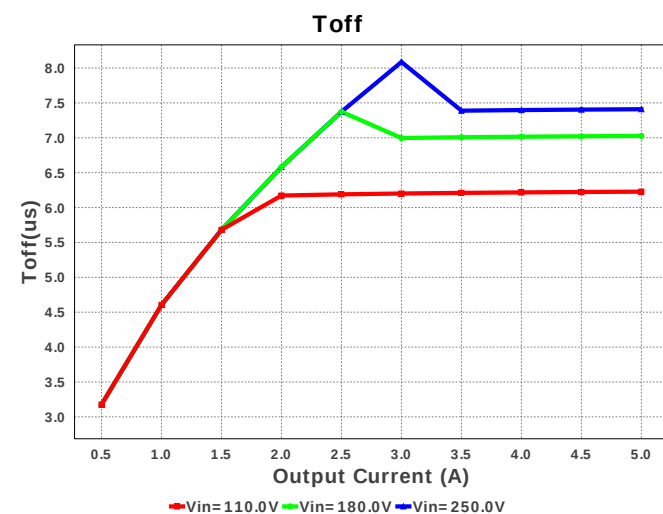
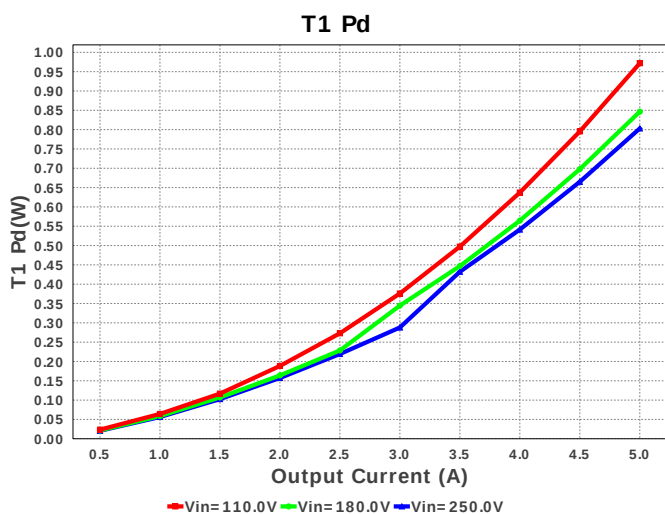
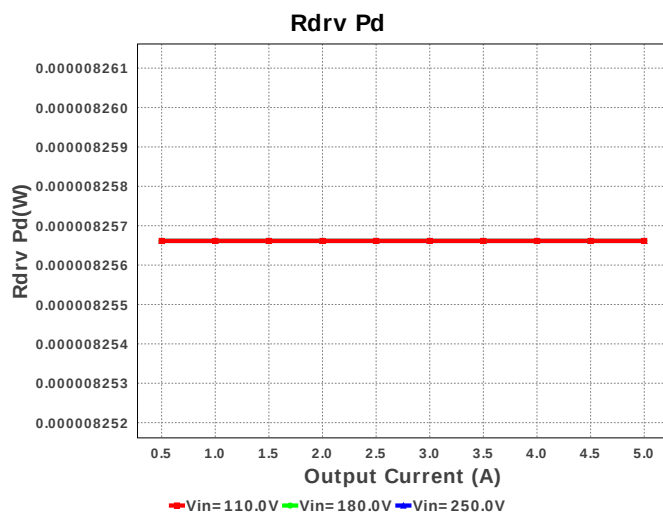
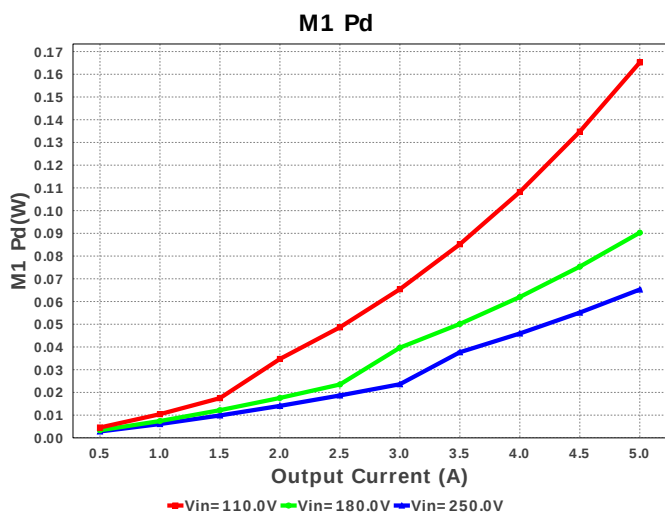
| #   | Name  | Manufacturer | Part Number                         | Properties                                                     | Qty | Price  | Footprint                                                                                                                                |
|-----|-------|--------------|-------------------------------------|----------------------------------------------------------------|-----|--------|------------------------------------------------------------------------------------------------------------------------------------------|
| 9.  | Cout1 | Panasonic    | 16SVP330M<br>Series= SVP            | Cap= 330.0 uF<br>ESR= 16.0 mOhm<br>VDC= 16.0 V<br>IRMS= 4.72 A | 2   | \$0.39 | <br>SM_RADIAL_10AMM 160 mm <sup>2</sup>               |
| 10. | Cout2 | Chemi-Con    | APXE100ARA151MF80G<br>Series= PXE   | Cap= 150.0 uF<br>ESR= 21.0 mOhm<br>VDC= 10.0 V<br>IRMS= 2.88 A | 3   | \$0.53 | <br>CAPSMT_62_F80 74 mm <sup>2</sup>                  |
| 11. | Cref  | AVX          | 08053C104KAT2A<br>Series= X7R       | Cap= 100.0 nF<br>ESR= 280.0 mOhm<br>VDC= 25.0 V<br>IRMS= 0.0 A | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>                            |
| 12. | Csc   | MuRata       | GRM216R71H103KA01D<br>Series= X7R   | Cap= 10.0 nF<br>VDC= 50.0 V<br>IRMS= 0.0 A                     | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>                            |
| 13. | Csnub | TDK          | C5750X6S2W105K<br>Series= X6S       | Cap= 1.0 uF<br>ESR= 5.263 mOhm<br>VDC= 400.0 V<br>IRMS= 0.0 A  | 1   | \$1.19 | <br>2220 54 mm <sup>2</sup>                           |
| 14. | Ct    | Kemet        | C0805C102J5GACTU<br>Series= C0G/NP0 | Cap= 1.0 nF<br>ESR= 25.0 mOhm<br>VDC= 50.0 V<br>IRMS= 1.71 A   | 1   | \$0.01 | <br>0805 7 mm <sup>2</sup>                            |
| 15. | Cvcc  | MuRata       | GRM188R71E104KA01D<br>Series= X7R   | Cap= 100.0 nF<br>ESR= 30.0 mOhm<br>VDC= 25.0 V<br>IRMS= 1.51 A | 1   | \$0.01 | <br>0603 5 mm <sup>2</sup>                            |
| 16. | Cx    | TDK          | B32913A5104M000<br>Series= 2231     | Cap= 100.0 nF<br>VDC= 1000.0 V<br>IRMS= 0.0 A                  | 1   | \$0.46 | <br>B32913_2650x600x1500<br>228 mm <sup>2</sup>     |
| 17. | Cy1   | TDK          | B81123C1102M<br>Series= B81123      | Cap= 1.0 nF<br>VDC= 3.0 kV<br>IRMS= 0.0 A                      | 1   | \$0.22 | <br><br>B81123_1800x500x1050<br>140 mm <sup>2</sup> |
| 18. | Cy2   | TDK          | B81123C1102M<br>Series= B81123      | Cap= 1.0 nF<br>VDC= 3.0 kV<br>IRMS= 0.0 A                      | 1   | \$0.22 | <br><br>B81123_1800x500x1050<br>140 mm <sup>2</sup> |

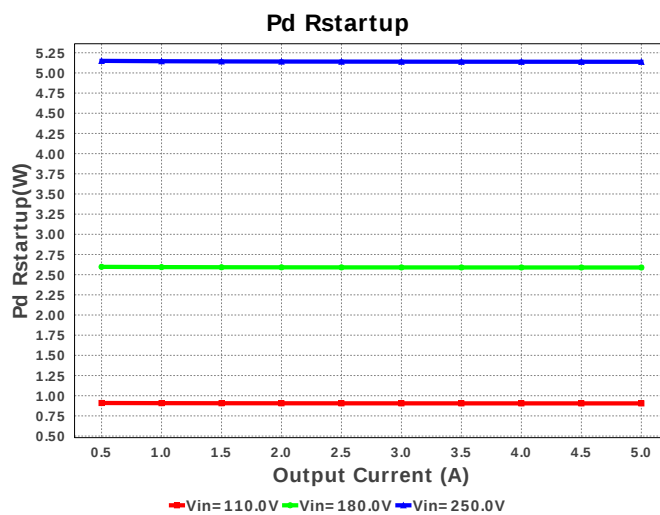
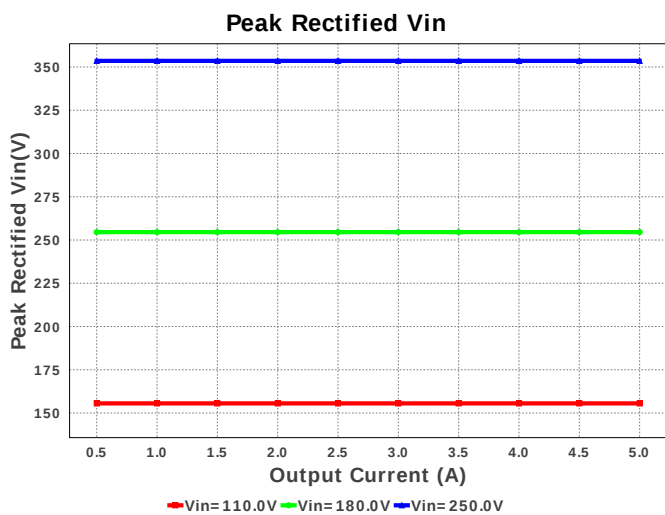
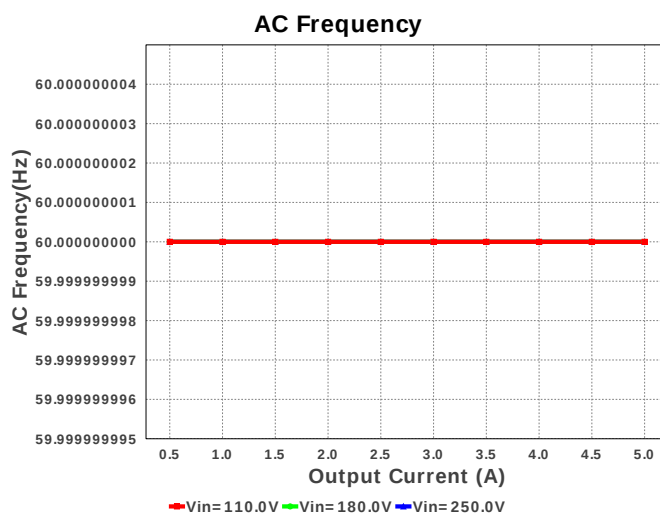
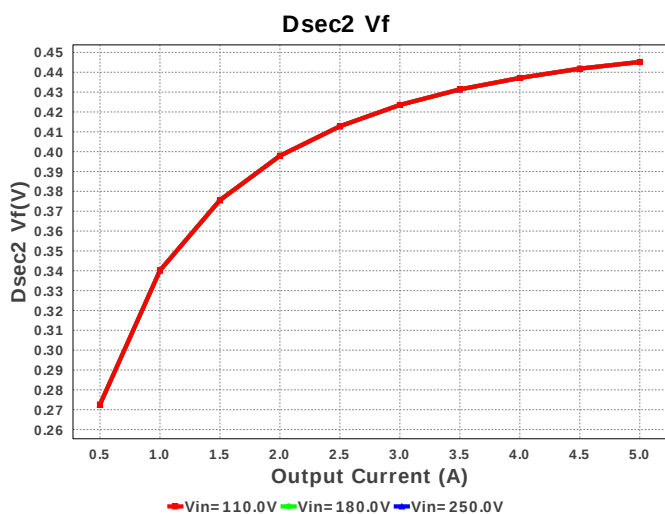
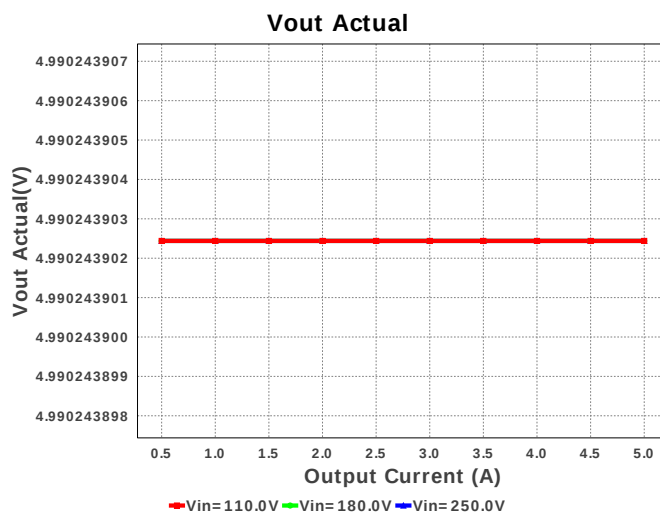
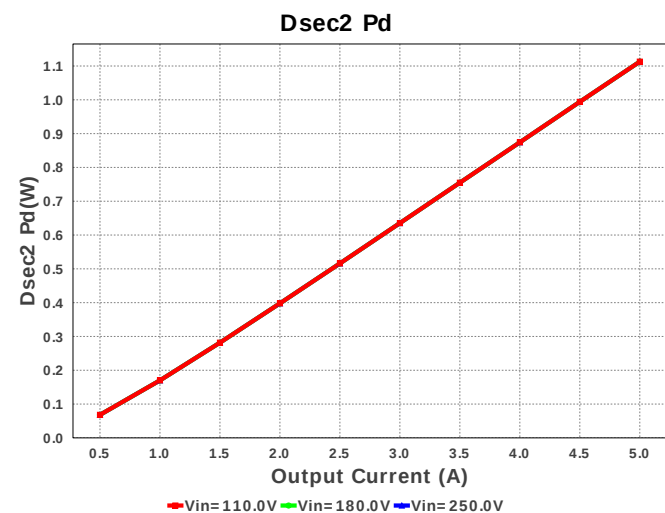
| #         | Name | Manufacturer            | Part Number                    | Properties                                                                          | Qty | Price  | Footprint                                                                                                                              |
|-----------|------|-------------------------|--------------------------------|-------------------------------------------------------------------------------------|-----|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| 19. Cy3   |      | TDK                     | B81123C1102M<br>Series= B81123 | Cap= 1.0 nF<br>VDC= 3.0 kV<br>IRMS= 0.0 A                                           | 1   | \$0.22 | <br><br>B81123_1800x500x1050<br>140 mm <sup>2</sup> |
| 20. D21   |      | Diodes Inc.             | B220-13-F                      | VF@Io= 500.0 mV<br>VRRM= 20.0 V                                                     | 1   | \$0.08 | <br>SMB 44 mm <sup>2</sup>                          |
| 21. Dac   |      | Vishay-Semiconductor    | DF10SA                         | VF@Io= 1.1 V<br>VRRM= 1,000.0 V                                                     | 1   | \$0.24 | <br>DF-S 99 mm <sup>2</sup>                         |
| 22. Daux  |      | Diodes Inc.             | DFLS1200-7                     | VF@Io= 850.0 mV<br>VRRM= 200.0 V                                                    | 1   | \$0.21 | <br>PowerDI123 13 mm <sup>2</sup>                   |
| 23. Dsec  |      | STMicroelectronics      | STPS20M100SG-TR                | VF@Io= 455.0 mV<br>VRRM= 100.0 V                                                    | 1   | \$1.33 | <br>DDPAK 210 mm <sup>2</sup>                       |
| 24. Dsec2 |      | STMicroelectronics      | STPS20M100SG-TR                | VF@Io= 455.0 mV<br>VRRM= 100.0 V                                                    | 1   | \$1.33 | <br>DDPAK 210 mm <sup>2</sup>                     |
| 25. Dsnub |      | Bourns                  | CD214C-F3600                   | VF@Io= 1.12 V<br>VRRM= 600.0 V                                                      | 1   | \$0.18 | <br>SMC 83 mm <sup>2</sup>                        |
| 26. L1    |      | API Delevan             | CM6296R-154                    | Lp= 150.0 µH<br>Rp= 16.0 mOhm<br>Leakage_L= 1.8 µH<br>Ns1toNp= 1.0<br>Rs1= 0.0 Ohms | 1   | \$5.95 | <br>CM6296 833 mm <sup>2</sup>                    |
| 27. L2    |      | Coilcraft               | SER1360-182KLB                 | L= 1.8 µH<br>DCR= 2.4 mOhm                                                          | 1   | \$0.72 | <br>SER1360 225 mm <sup>2</sup>                   |
| 28. M1    |      | Fairchild Semiconductor | FDD6N50TM                      | VdsMax= 500.0 V<br>IdsMax= 6.0 Amps                                                 | 1   | \$0.47 | <br>DPAK 102 mm <sup>2</sup>                      |
| 29. O1    |      | Vishay-Semiconductor    | TCMT1109                       | Optocoupler                                                                         | 1   | \$0.21 | <br>SOP-4 44 mm <sup>2</sup>                      |

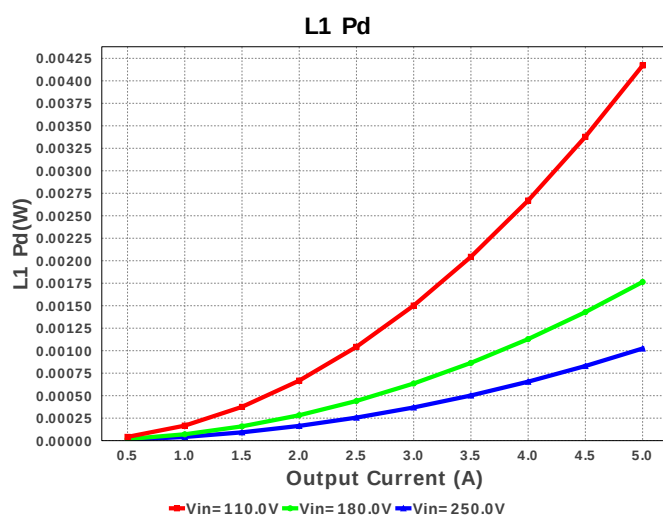
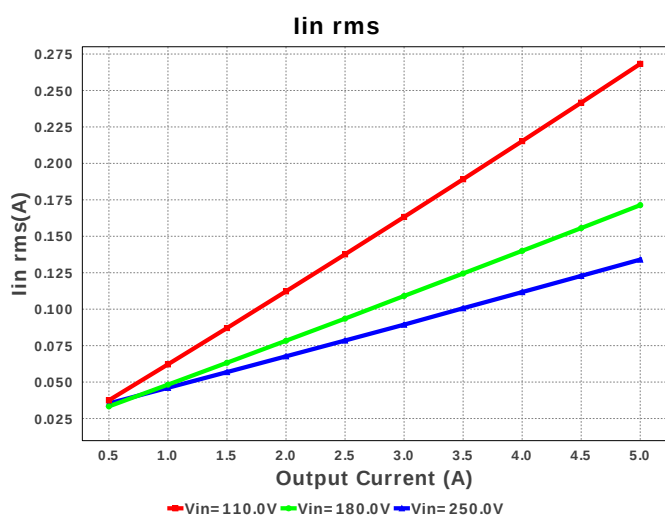
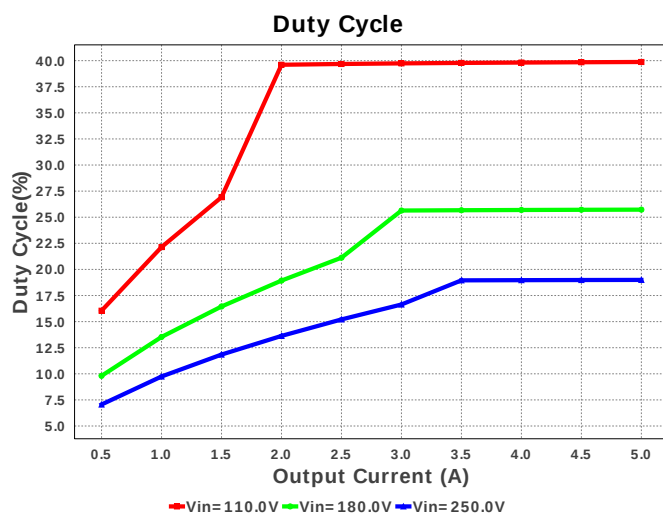
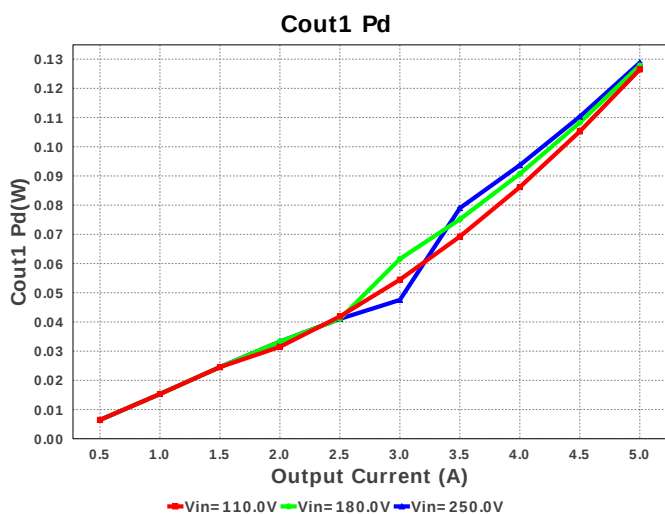
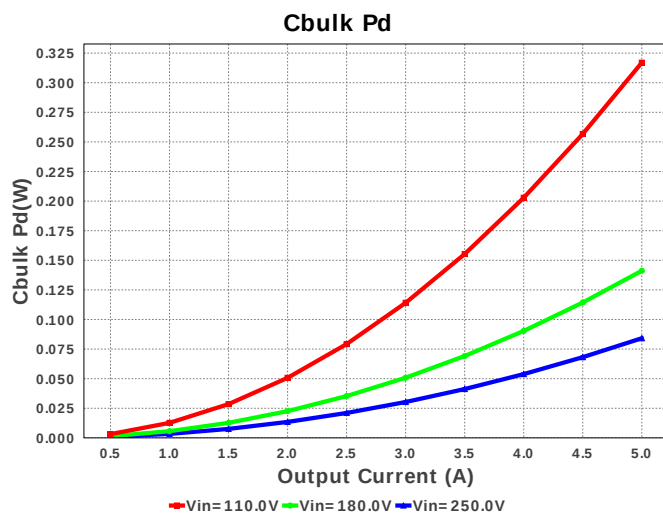
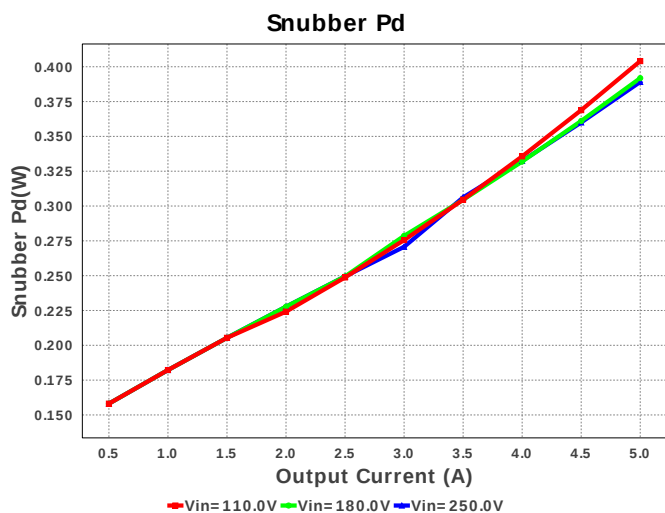
| #   | Name      | Manufacturer         | Part Number                           | Properties                                            | Qty | Price  | Footprint                                                                                            |
|-----|-----------|----------------------|---------------------------------------|-------------------------------------------------------|-----|--------|------------------------------------------------------------------------------------------------------|
| 30. | R1        | Vishay-Dale          | AC03000001009JACCS<br>Series= F_RES   | Res= 10.0 Ohm<br>Power= 2.25 W<br>Tolerance= 5.0%     | 1   | \$0.30 | <br>AC03 158 mm²  |
| 31. | R11       | Vishay-Dale          | CRCW040210K0FKED<br>Series= CRCW..e3  | Res= 10.0 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²    |
| 32. | R12       | Vishay-Dale          | CRCW04022K05FKED<br>Series= CRCW..e3  | Res= 2.05 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²    |
| 33. | R13       | Vishay-Dale          | CRCW04024K99FKED<br>Series= CRCW..e3  | Res= 4.99 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²    |
| 34. | R21       | Vishay-Dale          | CRCW040210K0FKED<br>Series= CRCW..e3  | Res= 10.0 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²    |
| 35. | R22       | Vishay-Dale          | CRCW040252K3FKED<br>Series= CRCW..e3  | Res= 52.3 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²    |
| 36. | Raux      | Vishay-Dale          | CRCW040210R0FKED<br>Series= CRCW..e3  | Res= 10.0 Ohm<br>Power= 63.0 mW<br>Tolerance= 1.0%    | 1   | \$0.01 | <br>0402 3 mm²    |
| 37. | Rbias     | Vishay-Dale          | CRCW0402205RFBKED<br>Series= CRCW..e3 | Res= 205.0 Ohm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²    |
| 38. | Rcs       | Vishay-Dale          | CRCW04022K00FKED<br>Series= CRCW..e3  | Res= 2.0 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%    | 1   | \$0.01 | <br>0402 3 mm²    |
| 39. | Rdrv      | Vishay-Dale          | CRCW04025R11FKED<br>Series= CRCW..e3  | Res= 5.11 Ohm<br>Power= 63.0 mW<br>Tolerance= 1.0%    | 1   | \$0.01 | <br>0402 3 mm²  |
| 40. | Rfbb      | Vishay-Dale          | CRCW04022K05FKED<br>Series= CRCW..e3  | Res= 2.05 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²  |
| 41. | Rfbt      | Yageo America        | RC0603FR-076K2L<br>Series= ?          | Res= 6.2 kOhm<br>Power= 100.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0603 5 mm²  |
| 42. | Rled      | Vishay-Dale          | CRCW04022K55FKED<br>Series= CRCW..e3  | Res= 2.55 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²  |
| 43. | Rsc       | Vishay-Dale          | CRCW040211K3FKED<br>Series= CRCW..e3  | Res= 11.3 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²  |
| 44. | Rsns      | Bourns               | CRM1206-FX-R910ELF<br>Series= ?       | Res= 910.0 mOhm<br>Power= 500.0 mW<br>Tolerance= 1.0% | 1   | \$0.03 | <br>1206 11 mm² |
| 45. | Rsnub     | CUSTOM               | CUSTOM<br>Series= ?                   | Res= 33.9637 kOhm<br>Power= 0.0 W<br>Tolerance= 0.0%  | 1   | NA     | CUSTOM 0 mm²                                                                                         |
| 46. | Rstartup1 | Panasonic            | ERJ-8ENF4532V<br>Series= ERJ-8E       | Res= 45.3 kOhm<br>Power= 250.0 mW<br>Tolerance= 1.0%  | 1   | \$0.01 | <br>1206 11 mm² |
| 47. | Rstartup2 | Panasonic            | ERJ-8ENF4532V<br>Series= ERJ-8E       | Res= 45.3 kOhm<br>Power= 250.0 mW<br>Tolerance= 1.0%  | 1   | \$0.01 | <br>1206 11 mm² |
| 48. | Rt        | Vishay-Dale          | CRCW04028K66FKED<br>Series= CRCW..e3  | Res= 8.66 kOhm<br>Power= 63.0 mW<br>Tolerance= 1.0%   | 1   | \$0.01 | <br>0402 3 mm²  |
| 49. | Rx1       | Vishay-Semiconductor | CRCW2010200KFKEF<br>Series= ?         | Res= 200.0 kOhm<br>Power= 750.0 mW<br>Tolerance= 1.0% | 1   | \$0.03 | <br>2010 32 mm² |
| 50. | Rx2       | Vishay-Semiconductor | CRCW2010200KFKEF<br>Series= ?         | Res= 200.0 kOhm<br>Power= 750.0 mW<br>Tolerance= 1.0% | 1   | \$0.03 | <br>2010 32 mm² |

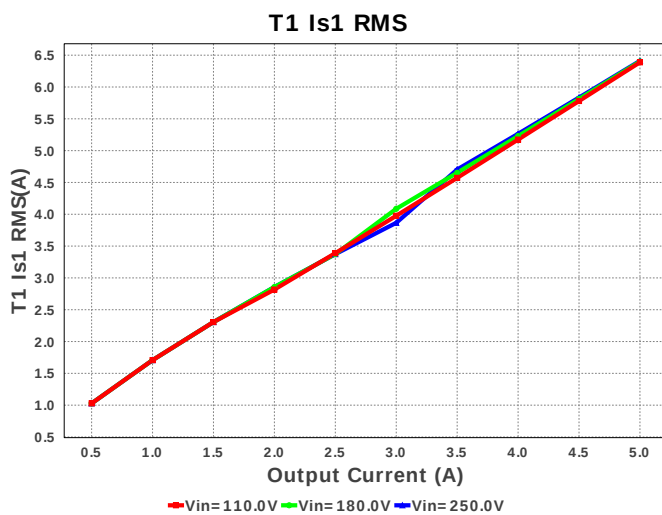
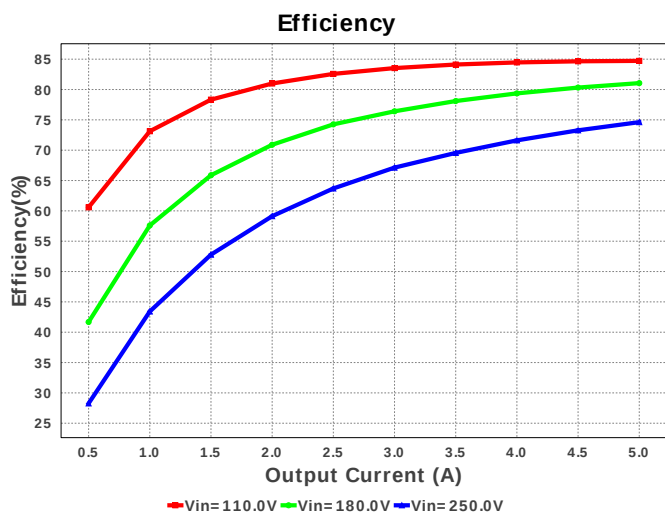
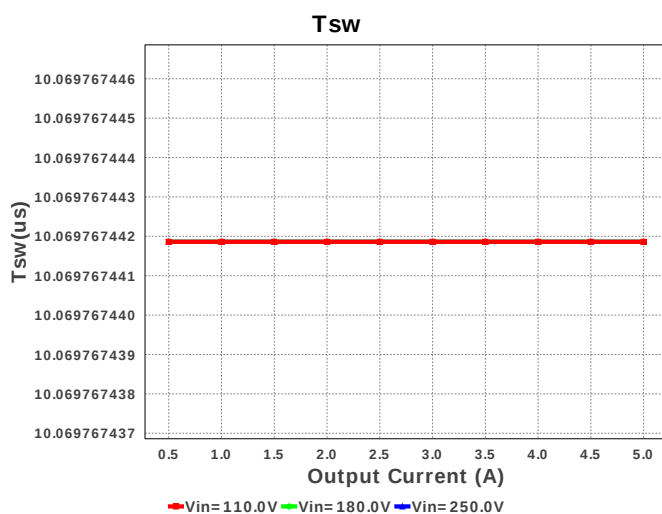
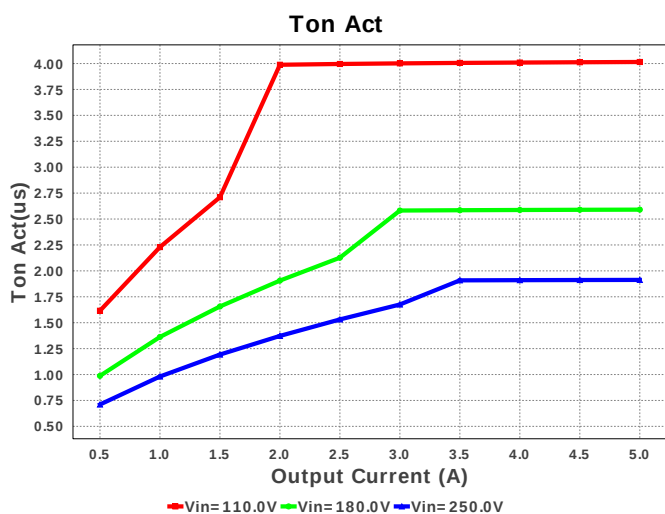
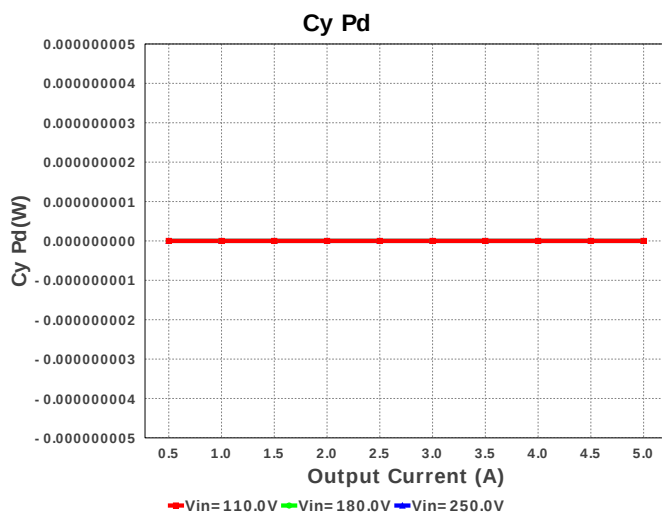
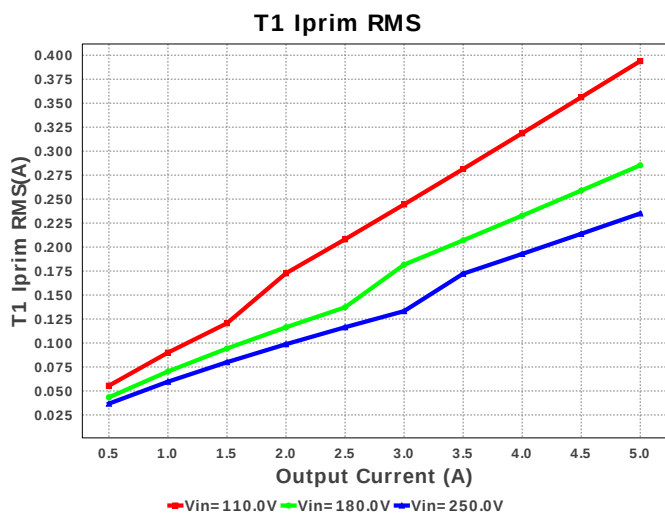
| #      | Name | Manufacturer      | Part Number    | Properties                                                                                                                                 | Qty | Price   | Footprint                                                                                                           |
|--------|------|-------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----|---------|---------------------------------------------------------------------------------------------------------------------|
| 51. T1 |      | CUSTOM            | CUSTOM         | Lp= 1.047 mH<br>Rp= 870.0 mOhm<br>Leakage_L= 20.945 $\mu$ H<br>Ns1toNp= 0.076<br>Rs1= 8.6 mOhms<br>Ns2toNp= 0.166<br>Rs2= 700.0 $\mu$ Ohms | 1   | NA      | CUSTOM 0 mm <sup>2</sup>                                                                                            |
| 52. U1 |      | Texas Instruments | UC1845AJ       | Switcher                                                                                                                                   | 1   | \$14.16 | <br>JG0008A 111 mm <sup>2</sup>  |
| 53. VR |      | Texas Instruments | LMV431CM5/NOPB | Voltage References                                                                                                                         | 1   | \$0.16  | <br>R-PDSO-G3 16 mm <sup>2</sup> |

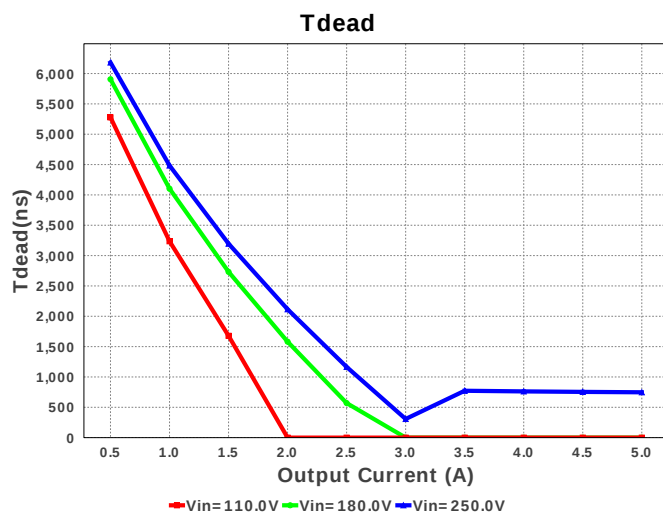
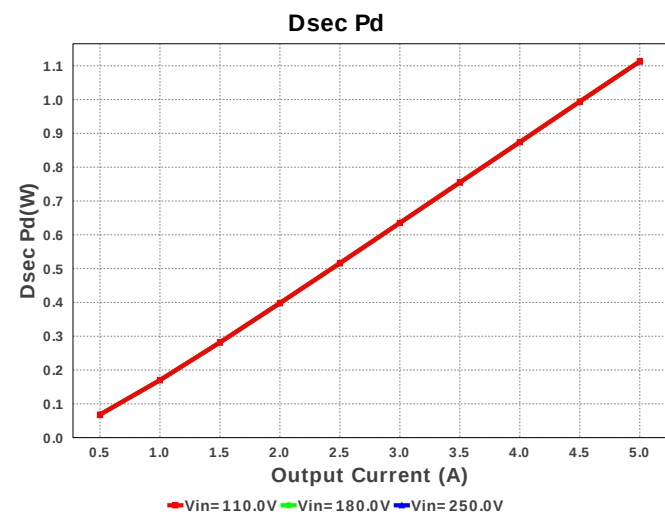
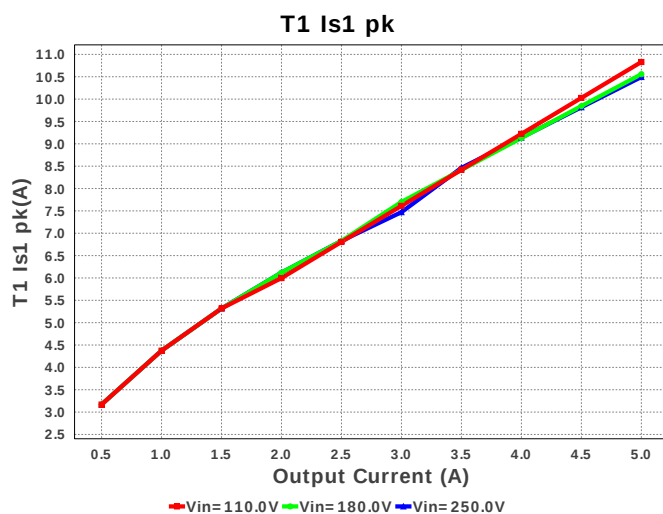
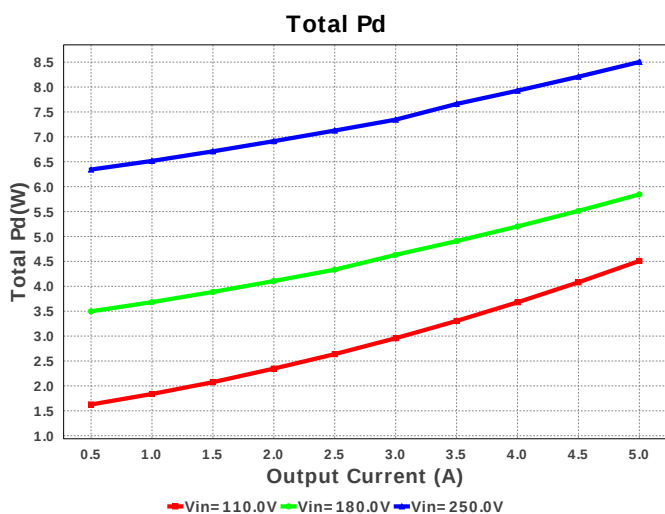
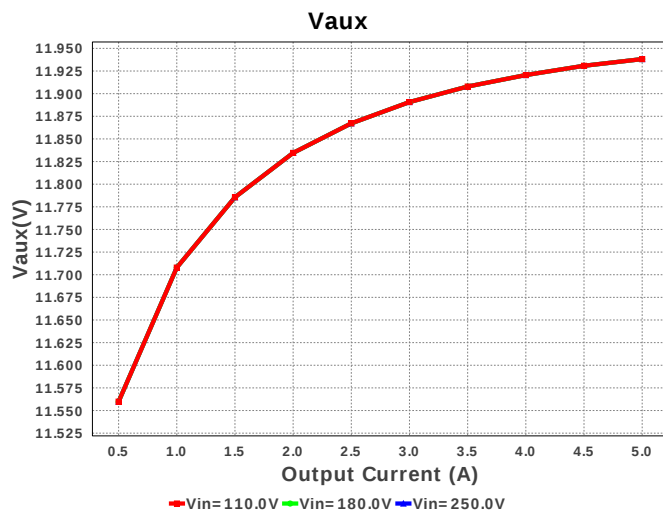
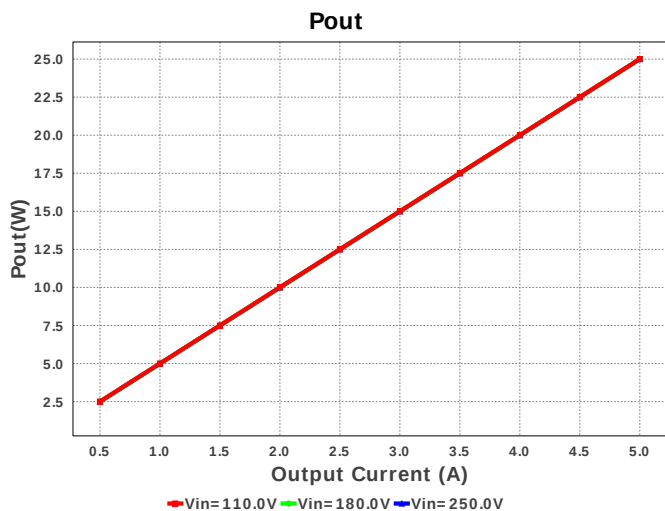


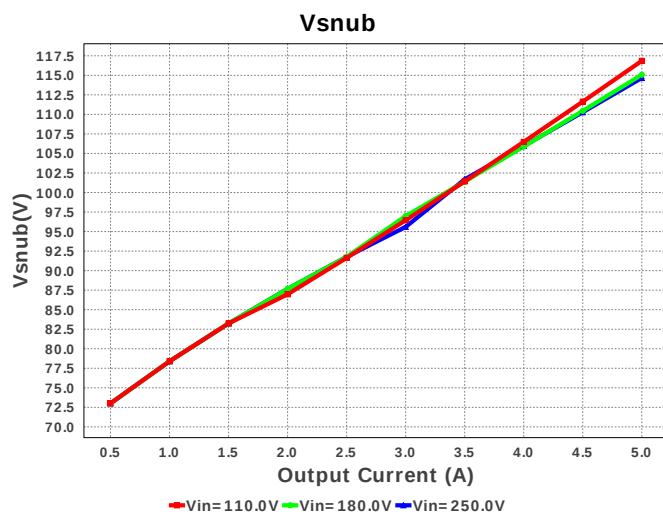
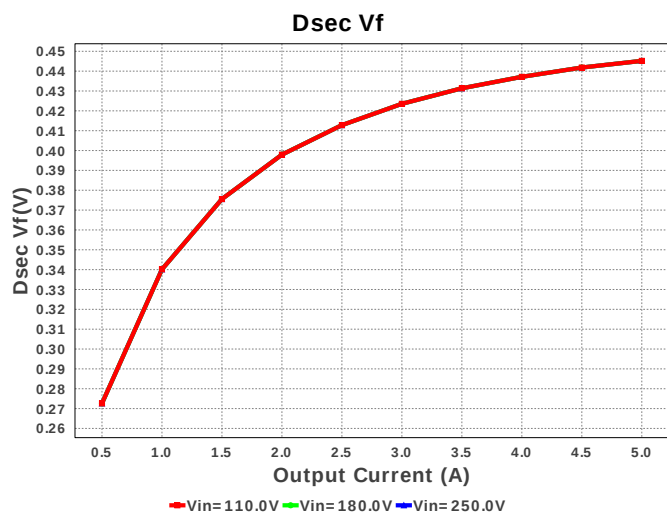
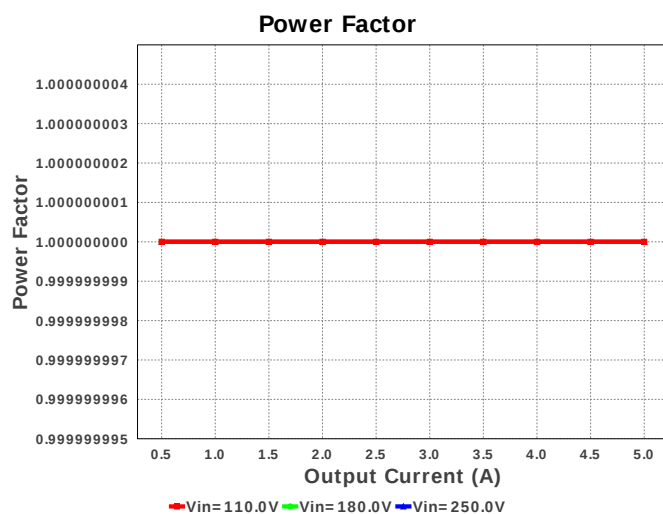
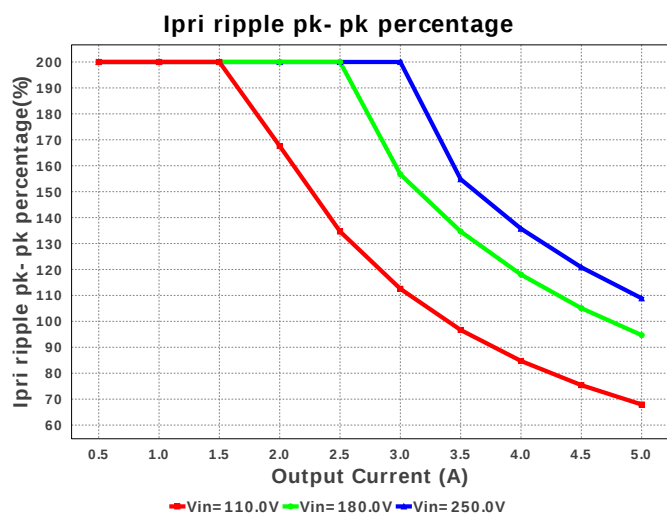
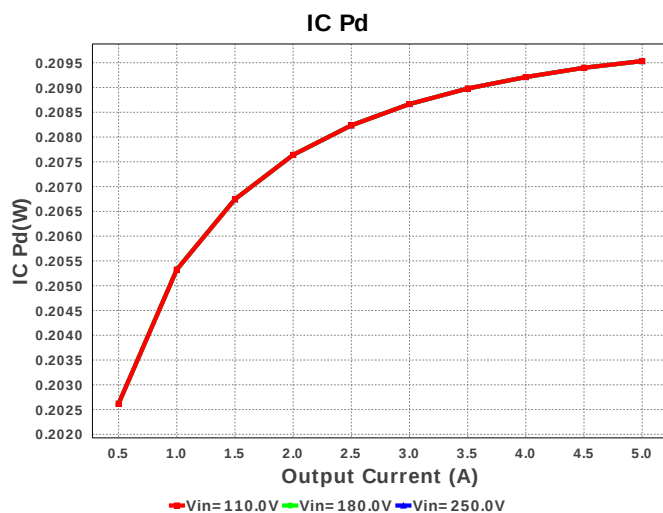
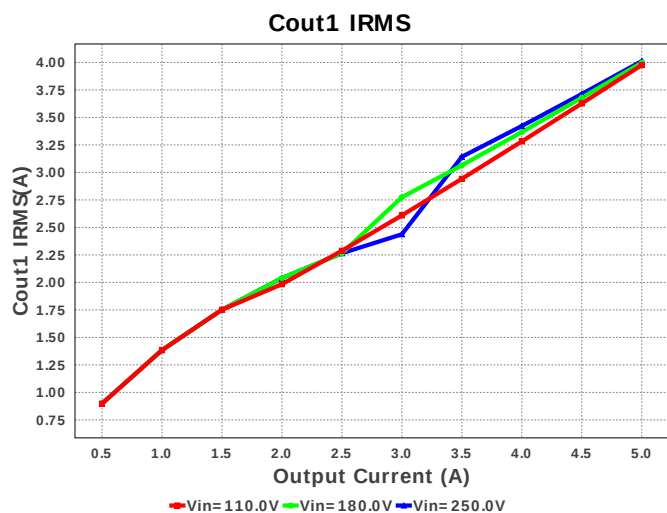


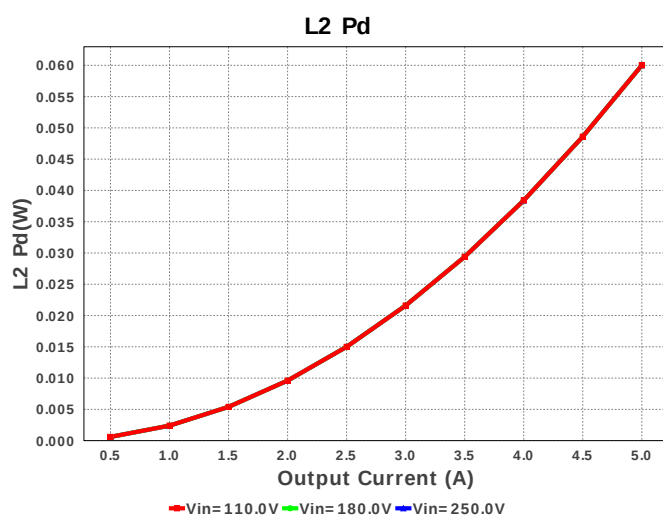
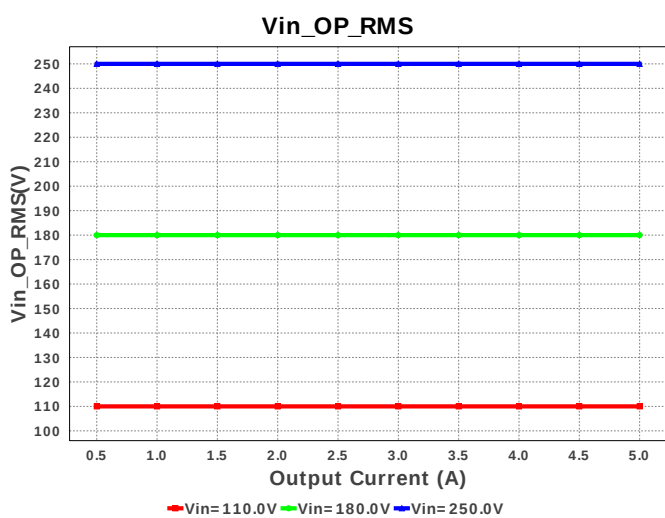
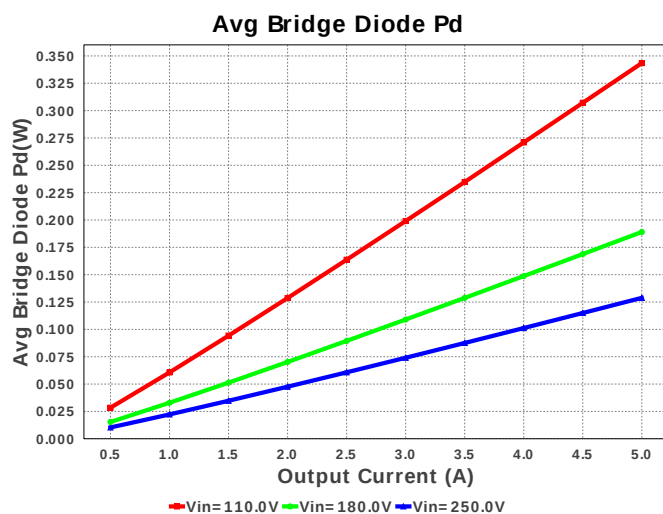
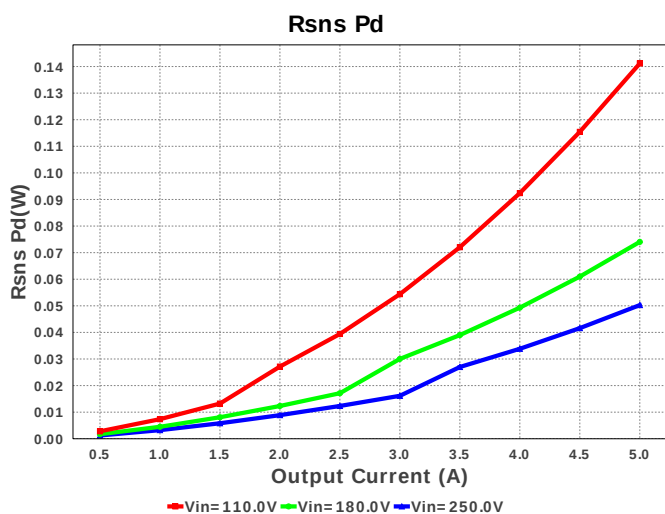
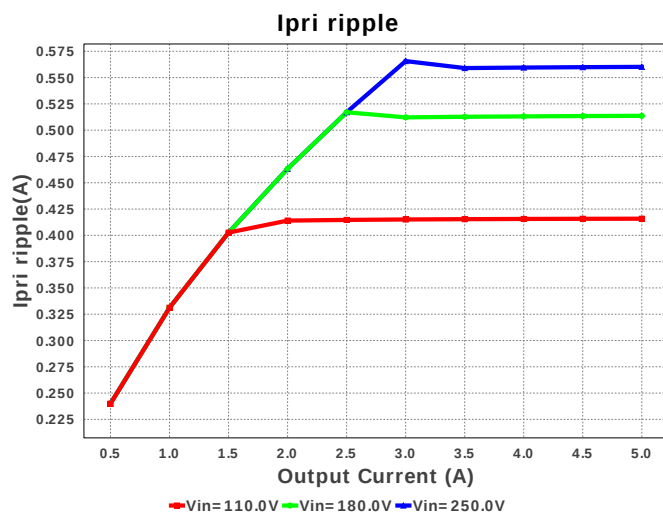
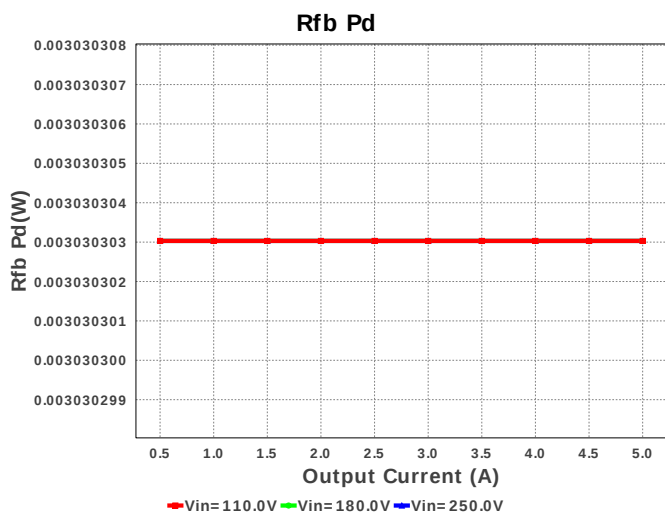


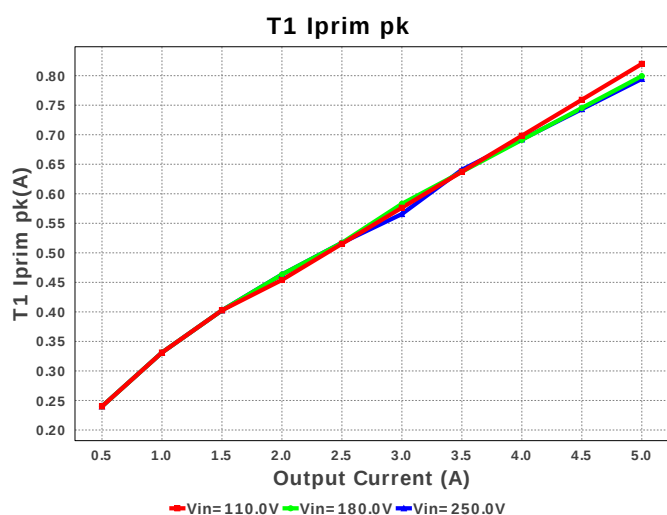
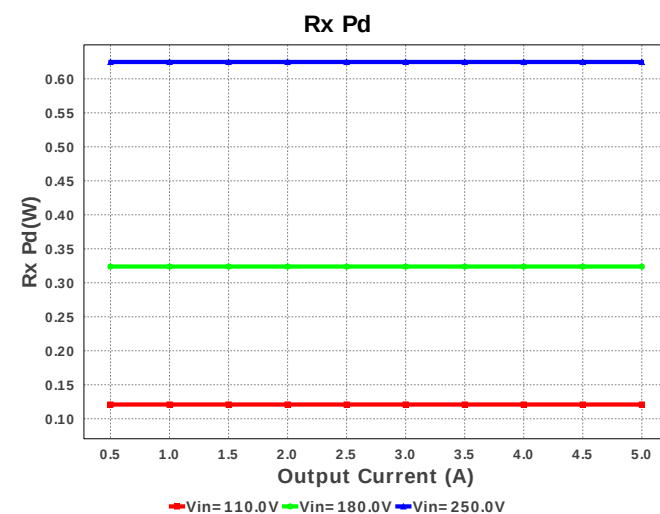
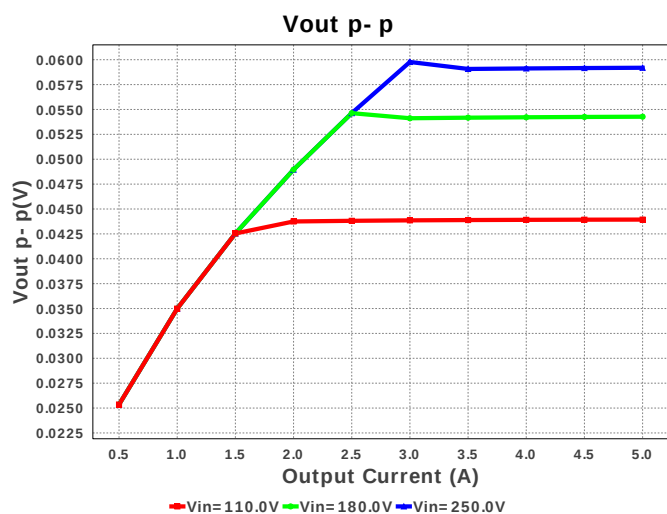
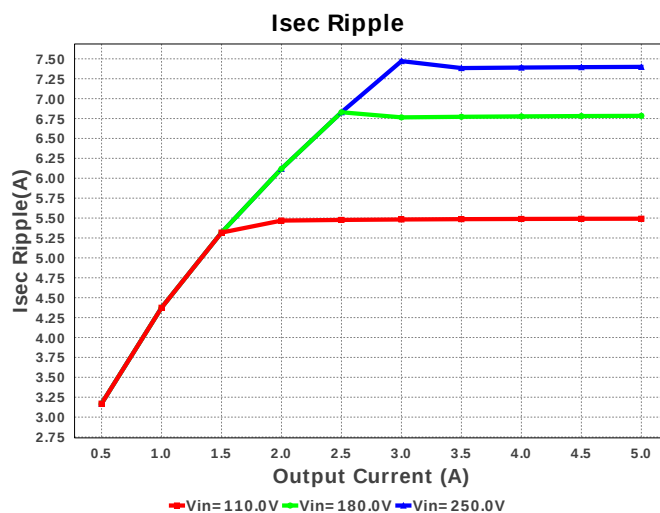
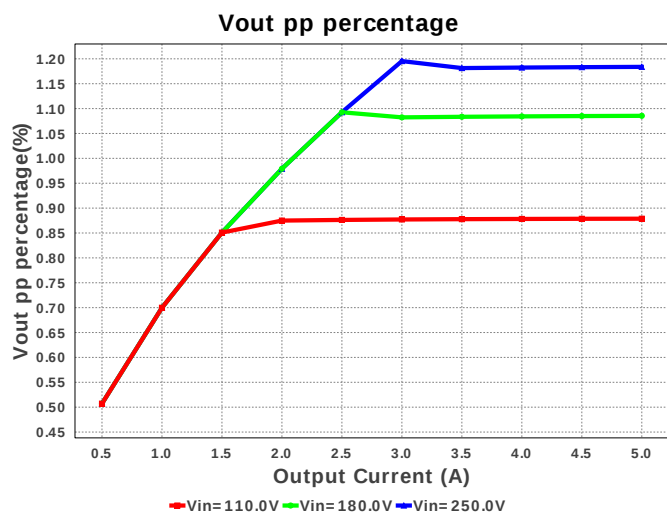












## Operating Values

| #  | Name                         | Value      | Category | Description                                                           |
|----|------------------------------|------------|----------|-----------------------------------------------------------------------|
| 1. | Cout1 IRMS                   | 3.976 A    | Current  | Output capacitor1 RMS ripple current                                  |
| 2. | Iin rms                      | 268.26 mA  | Current  | RMS Input Current                                                     |
| 3. | Iout_DCM                     | 1.813 A    | Current  | Approximate Current below which DCM mode of operation will begin      |
| 4. | Ipri Avg                     | 244.043 mA | Current  | Average Current in Primary Winding over the complete Switching Period |
| 5. | Ipri ripple                  | 415.816 mA | Current  | Ripple Current in the Primary Winding                                 |
| 6. | Ipri ripple pk-pk percentage | 67.935 %   | Current  | Primary Current pk-pk ripple percentage(of Ipri avg during ton only)  |
| 7. | Isec Ripple                  | 5.492 A    | Current  | Ripple Current in the Secondary Winding                               |
| 8. | T1 Iprim RMS                 | 393.85 mA  | Current  | Transformer Primary RMS Current                                       |
| 9. | T1 Iprim pk                  | 819.984 mA | Current  | Transformer Primary Peak Current                                      |

| #   | Name                | Value                   | Category | Description                                                                                |
|-----|---------------------|-------------------------|----------|--------------------------------------------------------------------------------------------|
| 10. | T1 Is1 RMS          | 6.388 A                 | Current  | Transformer Secondary1 RMS Current                                                         |
| 11. | T1 Is1 pk           | 10.83 A                 | Current  | Transformer Secondary1 Peak Current                                                        |
| 12. | AC Frequency        | 60.0 Hz                 | General  | Input AC frequency                                                                         |
| 13. | BOM Count           | 56                      | General  | Total Design BOM count                                                                     |
| 14. | Daux trr            | 0.0 ns                  | General  | Auxiliary Diode Reverse Recovery Time                                                      |
| 15. | Dsec Vf             | 445.177 mV              | General  | Effective Forward Voltage Drop at the Operating Current                                    |
| 16. | Dsec trr            | 0.0 ns                  | General  | Output Diode Reverse Recovery Time                                                         |
| 17. | Dsec2 Vf            | 445.177 mV              | General  | Effective Forward Voltage Drop at the Operating Current                                    |
| 18. | Dsnub trr           | 30.0 ns                 | General  | Snubber Diode Reverse Recovery Time                                                        |
| 19. | FootPrint           | 3.663 k mm <sup>2</sup> | General  | Total Foot Print Area of BOM components                                                    |
| 20. | Frequency           | 99.307 kHz              | General  | Switching frequency                                                                        |
| 21. | Pout                | 25.0 W                  | General  | Total output power                                                                         |
| 22. | Power Factor        | 1.0                     | General  | Assumed Power Factor for the Application                                                   |
| 23. | Tdead               | 0.0 ns                  | General  | Approximate Dead Time of the Regulator                                                     |
| 24. | Toff                | 6.228 us                | General  | Approximate Converter Off Time                                                             |
| 25. | Ton Act             | 4.015 us                | General  | Approximate Converter On Time                                                              |
| 26. | Total BOM           | \$0.0                   | General  | Total BOM Cost                                                                             |
| 27. | Tsw                 | 10.07 us                | General  | Switching Time Period                                                                      |
| 28. | Vaux                | 11.938 V                | General  | Auxiliary Voltage                                                                          |
| 29. | Vsnub               | 116.851 V               | General  | Voltage Across the Snubber                                                                 |
| 30. | Vout Actual         | 4.99 V                  | Op_Point | Vout Actual calculated based on selected voltage divider resistors                         |
| 31. | Vout OP             | 5.0 V                   | Op_Point | Operational Output Voltage                                                                 |
| 32. | Duty Cycle          | 39.871 %                | Op_point | Duty cycle                                                                                 |
| 33. | Efficiency          | 84.721 %                | Op_point | Steady state efficiency                                                                    |
| 34. | IC Tj               | 63.525 degC             | Op_point | IC junction temperature                                                                    |
| 35. | ICThetaJA           | 160.0 degC/W            | Op_point | IC junction-to-ambient thermal resistance                                                  |
| 36. | IOUT_OP             | 5.0 A                   | Op_point | Iout operating point                                                                       |
| 37. | M1 TJOP             | 43.713 degC             | Op_point | M1 MOSFET junction temperature                                                             |
| 38. | Peak Rectified Vin  | 155.562 V               | Op_point | Peak voltage seen at rectified input                                                       |
| 39. | Vin_OP_RMS          | 110.0 V                 | Op_point | AC Input RMS Voltage                                                                       |
| 40. | Vout p-p            | 43.936 mV               | Op_point | Peak-to-peak output ripple voltage                                                         |
| 41. | Avg Bridge Diode Pd | 343.465 mW              | Power    | Average Power Dissipation in the Bridge Diode over the AC Line Period                      |
| 42. | Cbulk Pd            | 316.918 mW              | Power    | Bulk capacitor power dissipation                                                           |
| 43. | Cout1 Pd            | 126.466 mW              | Power    | Output capacitor1 power dissipation                                                        |
| 44. | Cx Pd               | 0.0 W                   | Power    | X-cap Power Dissipation                                                                    |
| 45. | Cy Pd               | 0.0 W                   | Power    | Y-caps Power Dissipation                                                                   |
| 46. | Dsec Pd             | 1.113 W                 | Power    | Secondary Diode Power Dissipation                                                          |
| 47. | Dsec2 Pd            | 1.113 W                 | Power    | Secondary Diode Power Dissipation                                                          |
| 48. | IC Pd               | 209.533 mW              | Power    | IC power dissipation                                                                       |
| 49. | L1 Pd               | 4.171 mW                | Power    | Power Dissipation in the Inductor                                                          |
| 50. | L2 Pd               | 60.0 mW                 | Power    | Average Power Dissipation in the Inductor Over the AC Line Period                          |
| 51. | M1 Pd               | 165.212 mW              | Power    | M1 MOSFET total power dissipation                                                          |
| 52. | Paux                | 15.286 mW               | Power    | Power Dissipation in Raux and Daux                                                         |
| 53. | Pd Rstartup         | 904.767 mW              | Power    | Power Dissipation in Rstartup1 and Rstartup2                                               |
| 54. | Rdrv Pd             | 8.257 μW                | Power    | Power Dissipation in Gate Drive Resistor                                                   |
| 55. | Rfb Pd              | 3.03 mW                 | Power    | Rfb Power Dissipation                                                                      |
| 56. | Rsns Pd             | 141.157 mW              | Power    | Current Limit Sense Resistor Power Dissipation                                             |
| 57. | Rx Pd               | 120.961 mW              | Power    | Total Power Dissipation in Rx1 and Rx2                                                     |
| 58. | Snubber Pd          | 404.054 mW              | Power    | Snubber Power Dissipation                                                                  |
| 59. | T1 Pd               | 971.806 mW              | Power    | Estimated Losses in Transformer                                                            |
| 60. | Total Pd            | 4.509 W                 | Power    | Total Power Dissipation                                                                    |
| 61. | Vout Tolerance      | 2.173 %                 |          | Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable |
| 62. | Vout pp percentage  | 878.727 m%              |          | Output Voltage ripple percentage                                                           |

## Design Inputs

| #  | Name        | Value   | Description                        |
|----|-------------|---------|------------------------------------|
| 1. | Iout        | 5.0     | Maximum Output Current             |
| 2. | VinMax      | 250.0   | Maximum input voltage              |
| 3. | VinMin      | 110.0   | Minimum input voltage              |
| 4. | Vout        | 5.0     | Output Voltage                     |
| 5. | acFrequency | 60.0    | Light Output in Lumen              |
| 6. | base_pn     | UC1845A | Texas Instruments Base Part Number |
| 7. | source      | AC      | Input Source Type                  |
| 8. | ta          | 30.0    | Ambient temperature                |

## Design Assistance

1. UC1845A Product Folder : <http://www.ti.com/product/UC1845A> : contains the data sheet and other resources.

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