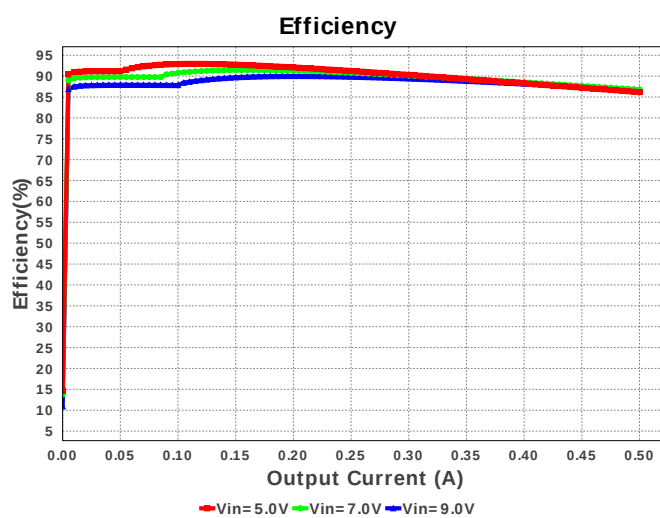
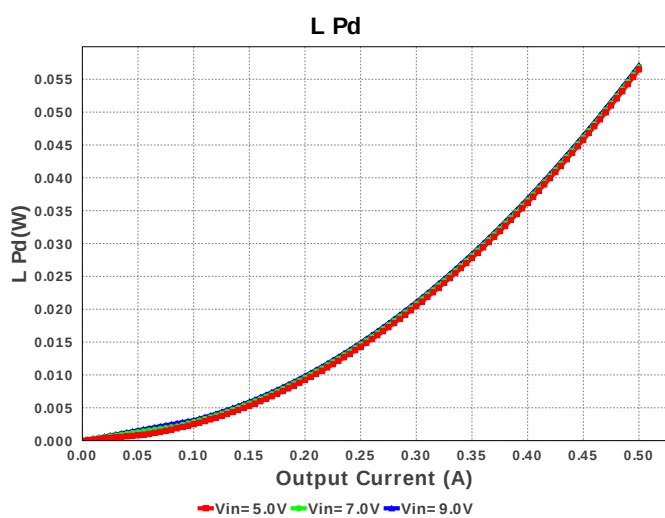
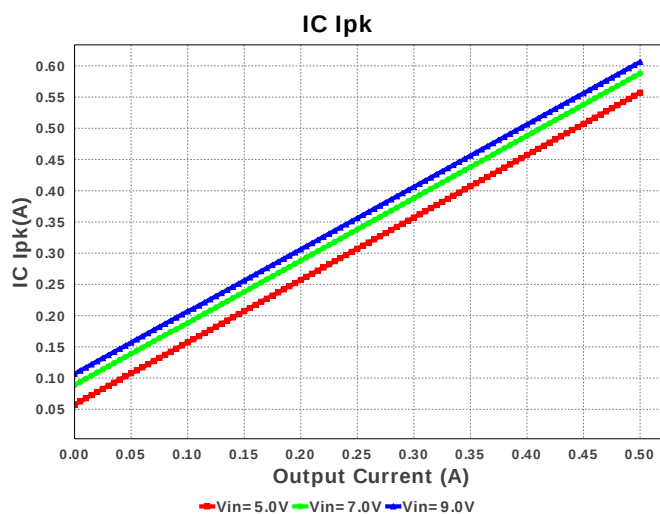
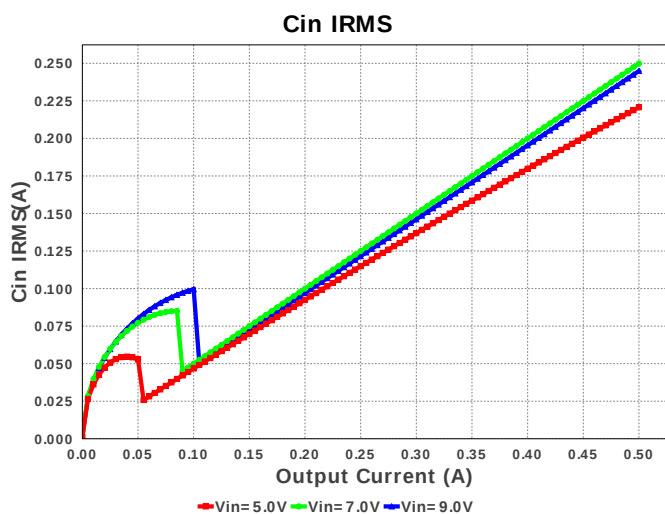
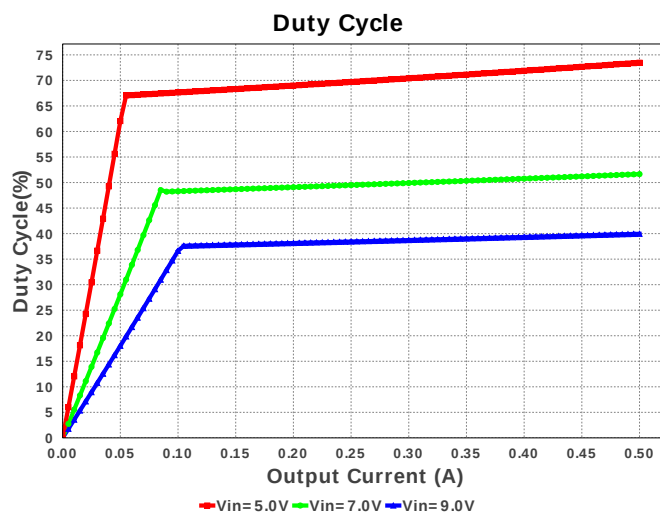
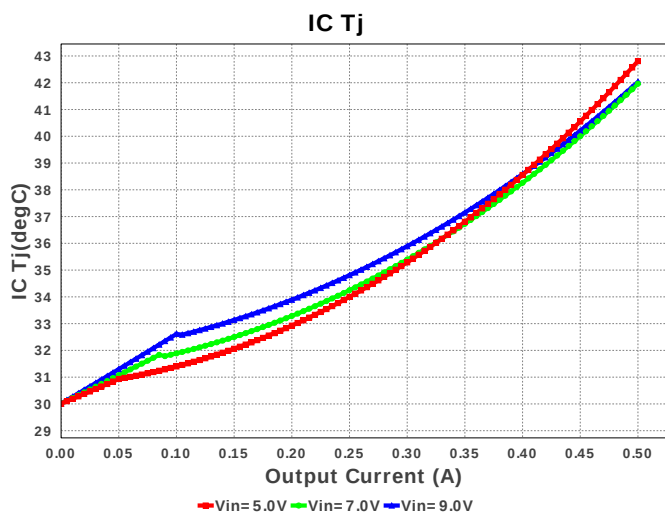
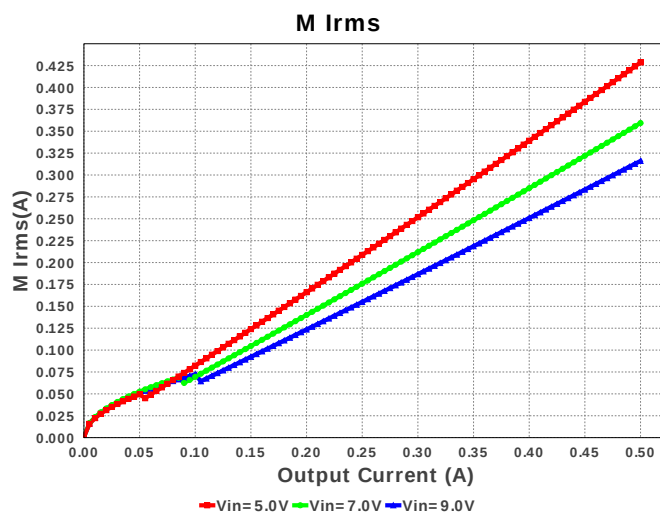
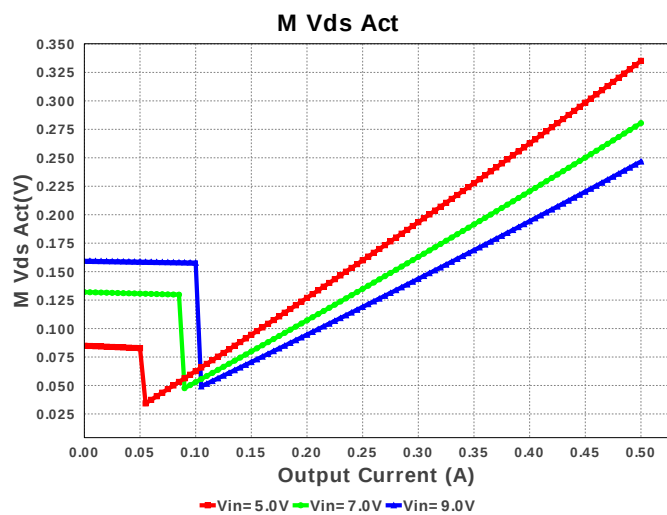
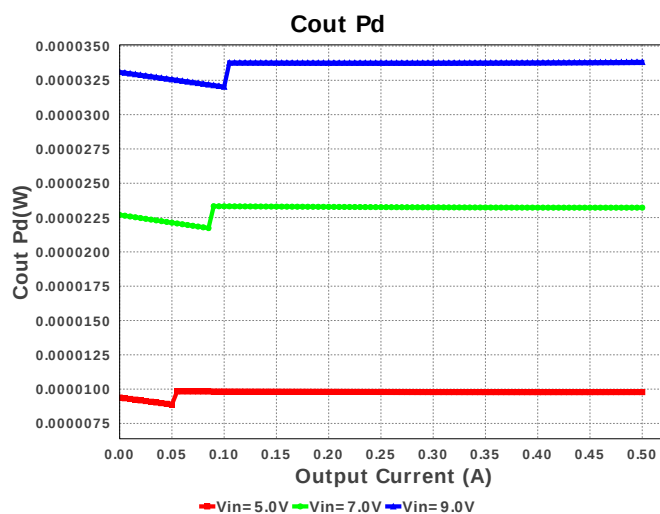
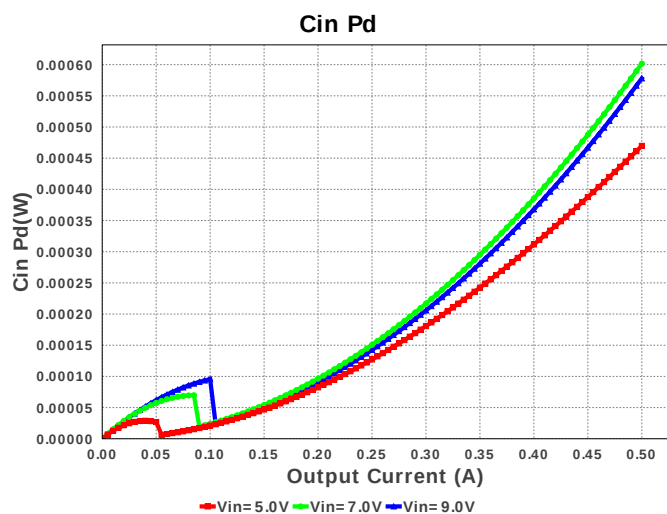
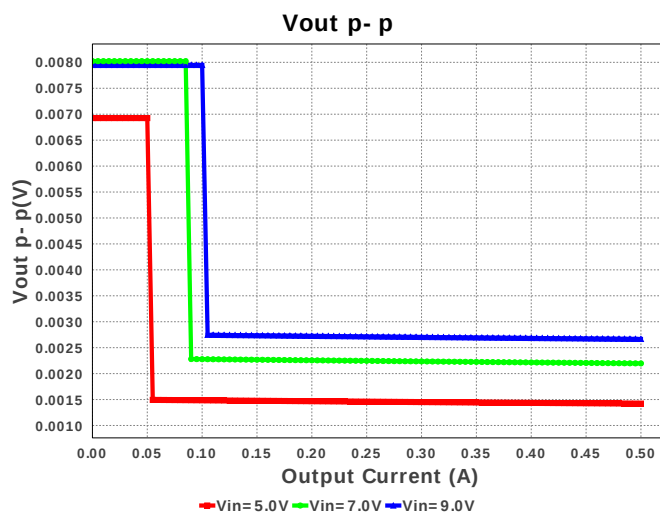
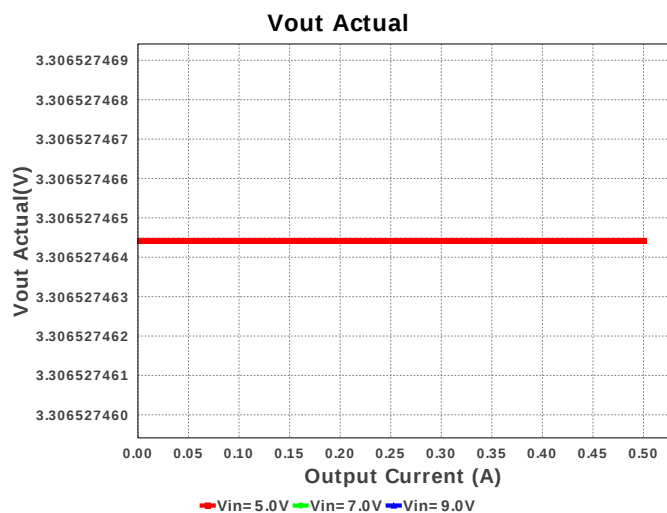
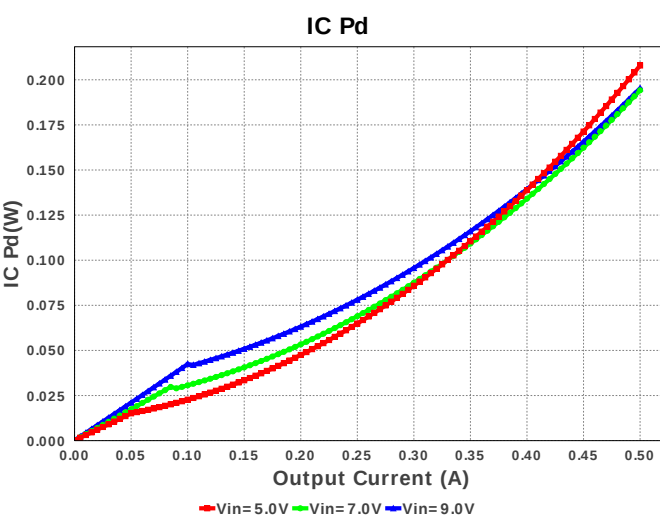
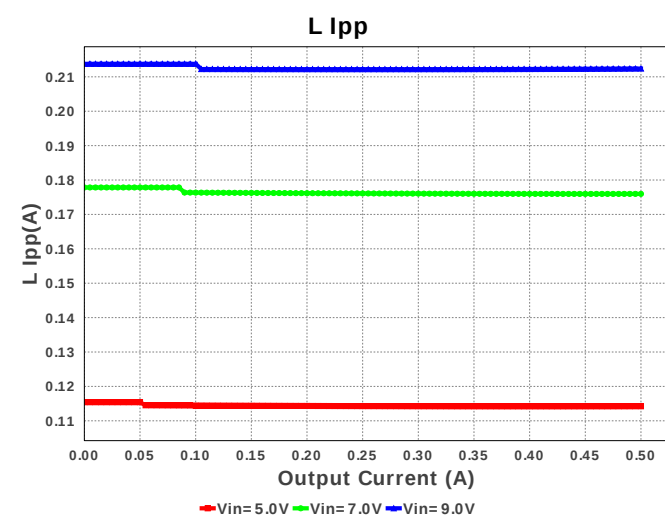
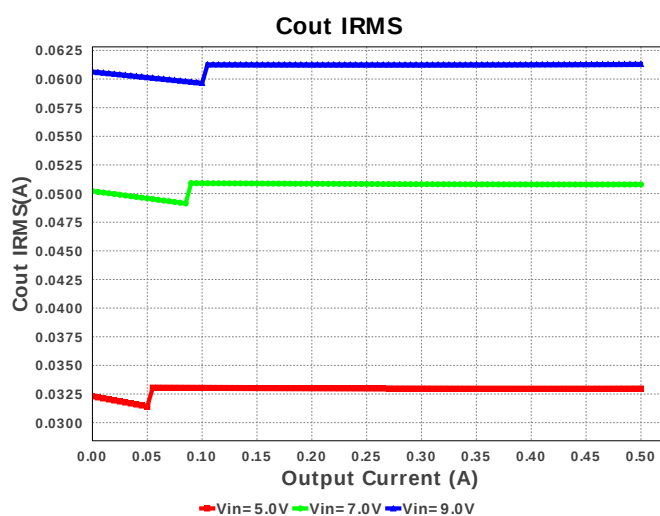
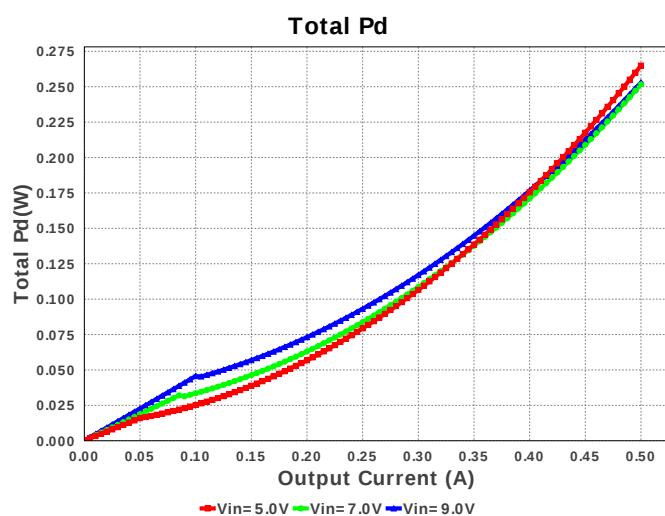
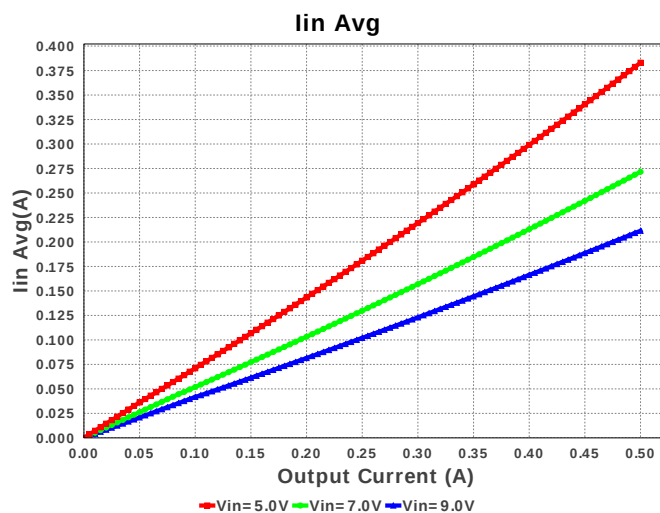
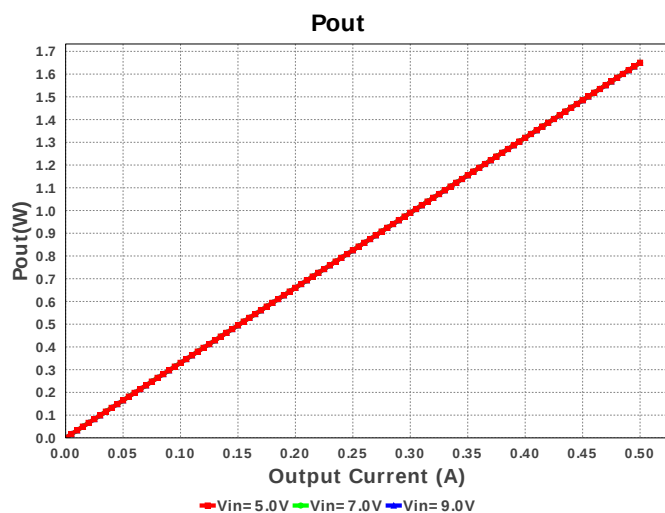


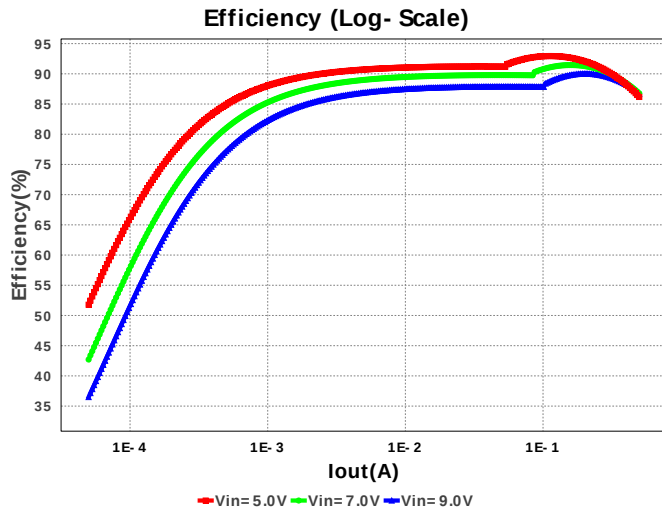


Device = TPS62175DQCR  
Topology = Buck  
Created = 7/21/16 4:04:51 AM  
BOM Cost = \$1.04  
BOM Count = 7  
Total Pd = 0.25W









## Operating Values

| #   | Name           | Value                | Category | Description                                                                                |
|-----|----------------|----------------------|----------|--------------------------------------------------------------------------------------------|
| 1.  | Cin IRMS       | 244.907 mA           | Current  | Input capacitor RMS ripple current                                                         |
| 2.  | Cout IRMS      | 61.315 mA            | Current  | Output capacitor RMS ripple current                                                        |
| 3.  | IC Ipk         | 606.201 mA           | Current  | Peak switch current in IC                                                                  |
| 4.  | Iin Avg        | 211.44 mA            | Current  | Average input current                                                                      |
| 5.  | L Ipp          | 212.4 mA             | Current  | Peak-to-peak inductor ripple current                                                       |
| 6.  | M1 Irms        | 316.064 mA           | Current  | Q lavg                                                                                     |
| 7.  | BOM Count      | 7                    | General  | Total Design BOM count                                                                     |
| 8.  | FootPrint      | 60.0 mm <sup>2</sup> | General  | Total Foot Print Area of BOM components                                                    |
| 9.  | Frequency      | 1.072 MHz            | General  | Switching frequency                                                                        |
| 10. | IC Tolerance   | 24.0 mV              | General  | IC Feedback Tolerance                                                                      |
| 11. | M Vds Act      | 246.736 mV           | General  | Voltage drop across the MosFET                                                             |
| 12. | Pout           | 1.65 W               | General  | Total output power                                                                         |
| 13. | Total BOM      | \$1.04               | General  | Total BOM Cost                                                                             |
| 14. | Vout Actual    | 3.307 V              | Op_Point | Vout Actual calculated based on selected voltage divider resistors                         |
| 15. | Vout OP        | 3.3 V                | Op_Point | Operational Output Voltage                                                                 |
| 16. | Duty Cycle     | 39.959 %             | Op_point | Duty cycle                                                                                 |
| 17. | Efficiency     | 86.705 %             | Op_point | Steady state efficiency                                                                    |
| 18. | IC Tj          | 42.03 degC           | Op_point | IC junction temperature                                                                    |
| 19. | ICThetaJA      | 61.6 degC/W          | Op_point | IC junction-to-ambient thermal resistance                                                  |
| 20. | IOUT_OP        | 500.0 mA             | Op_point | Iout operating point                                                                       |
| 21. | VIN_OP         | 9.0 V                | Op_point | Vin operating point                                                                        |
| 22. | Vout p-p       | 2.668 mV             | Op_point | Peak-to-peak output ripple voltage                                                         |
| 23. | Cin Pd         | 578.02 μW            | Power    | Input capacitor power dissipation                                                          |
| 24. | Cout Pd        | 33.836 μW            | Power    | Output capacitor power dissipation                                                         |
| 25. | IC Pd          | 195.29 mW            | Power    | IC power dissipation                                                                       |
| 26. | L Pd           | 57.096 mW            | Power    | Inductor power dissipation                                                                 |
| 27. | Total Pd       | 252.999 mW           | Power    | Total Power Dissipation                                                                    |
| 28. | Vout Tolerance | 4.577 %              |          | Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable |

## Design Inputs

| #  | Name    | Value    | Description            |
|----|---------|----------|------------------------|
| 1. | Iout    | 500.0 m  | Maximum Output Current |
| 2. | VinMax  | 9.0      | Maximum input voltage  |
| 3. | VinMin  | 5.0      | Minimum input voltage  |
| 4. | Vout    | 3.3      | Output Voltage         |
| 5. | base_pn | TPS62175 | Base Product Number    |
| 6. | source  | DC       | Input Source Type      |
| 7. | Ta      | 30.0     | Ambient temperature    |

## Design Assistance

1. **TPS62175** Product Folder : <http://www.ti.com/product/TPS62175> : contains the data sheet and other resources.

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