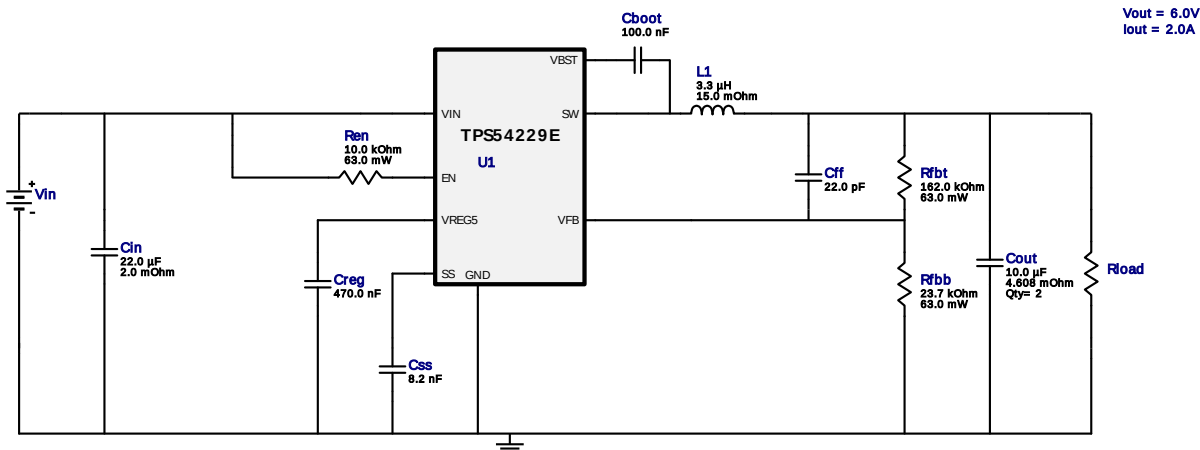


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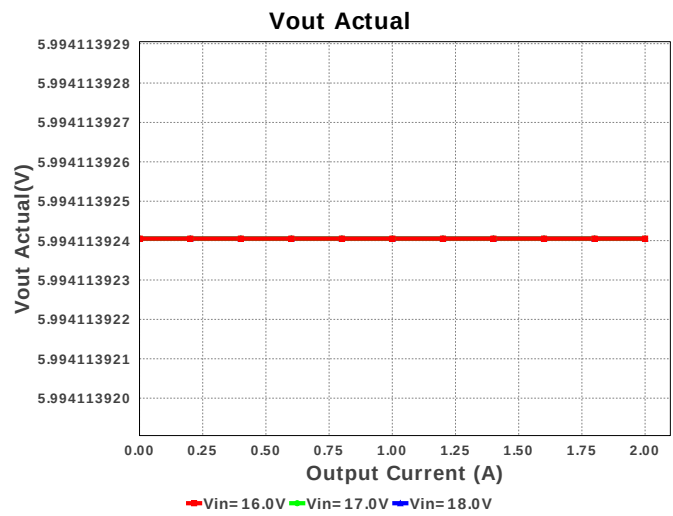
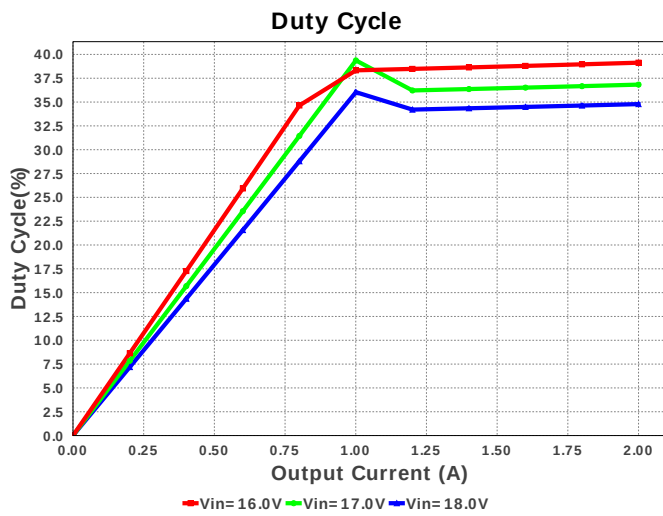
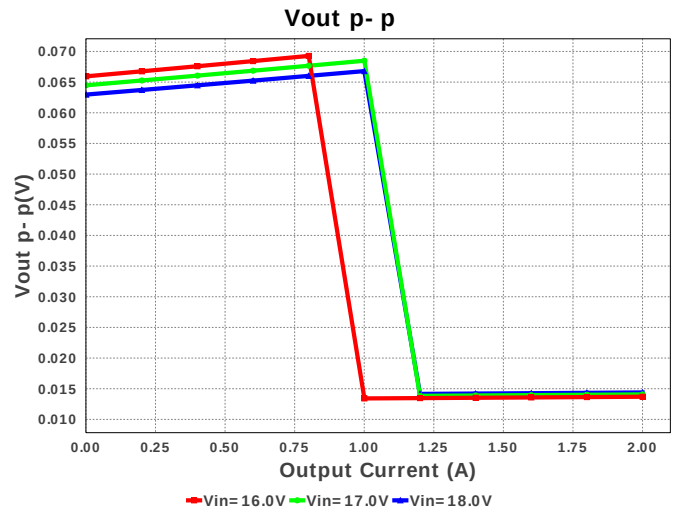
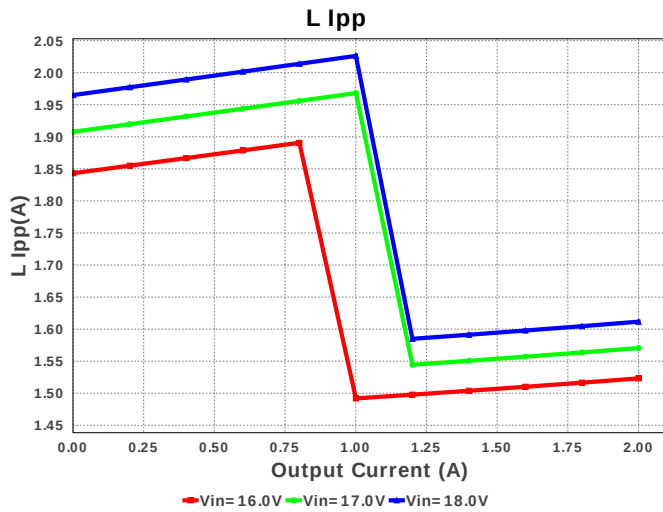
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TPS54229EDDAR 16.0V-18.0V to 6.00V @ 2.0A

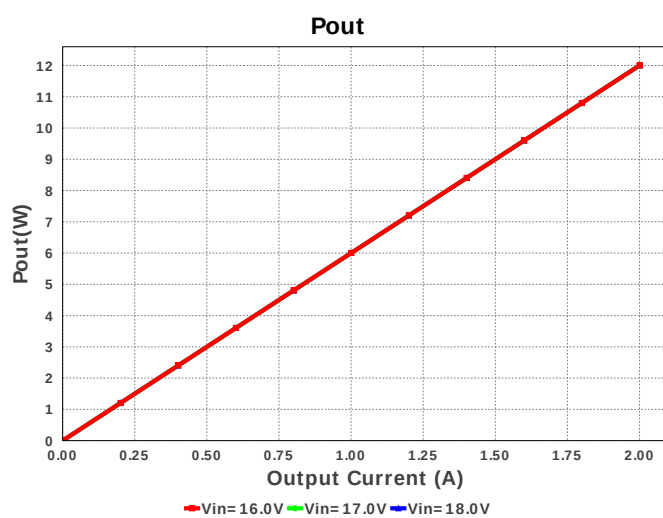
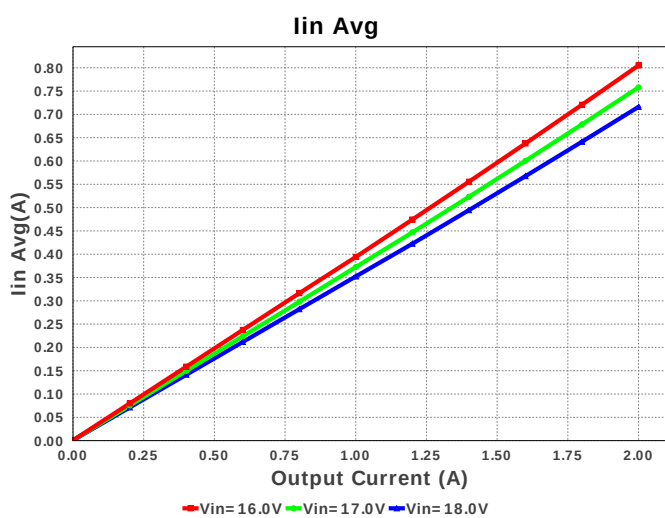
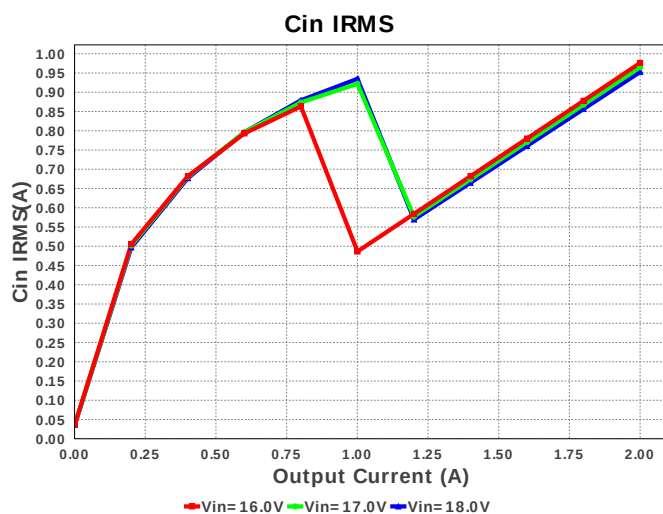
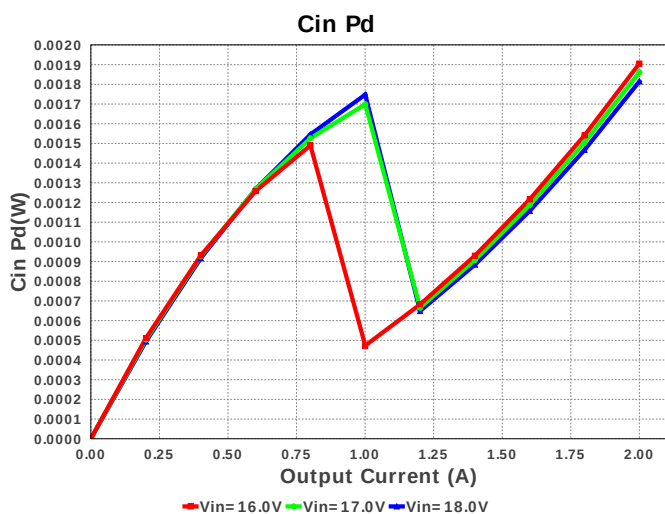
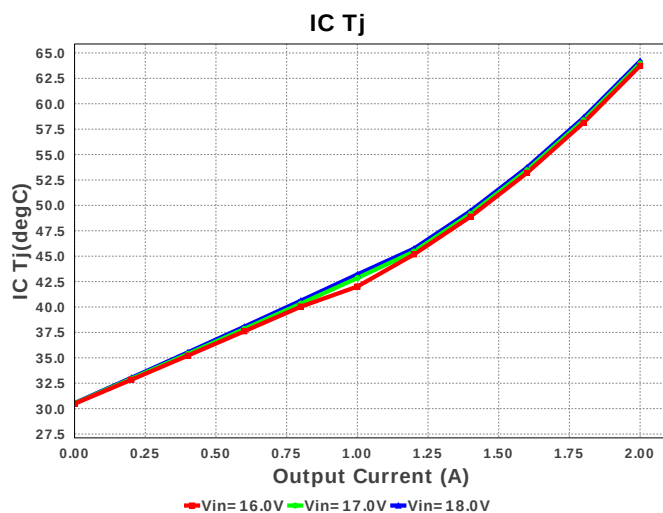
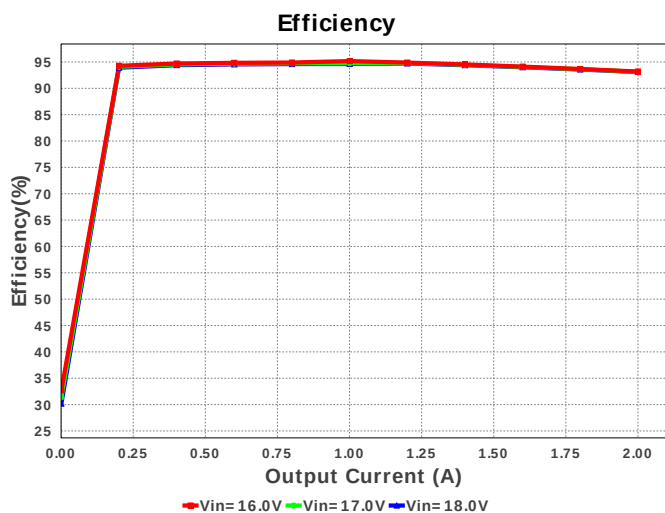


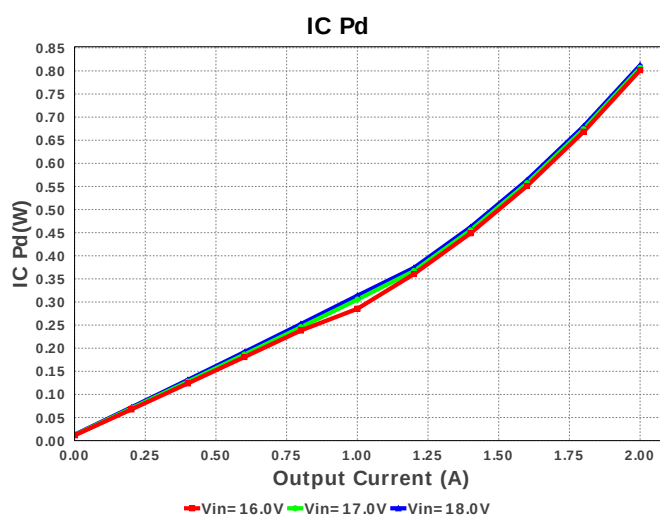
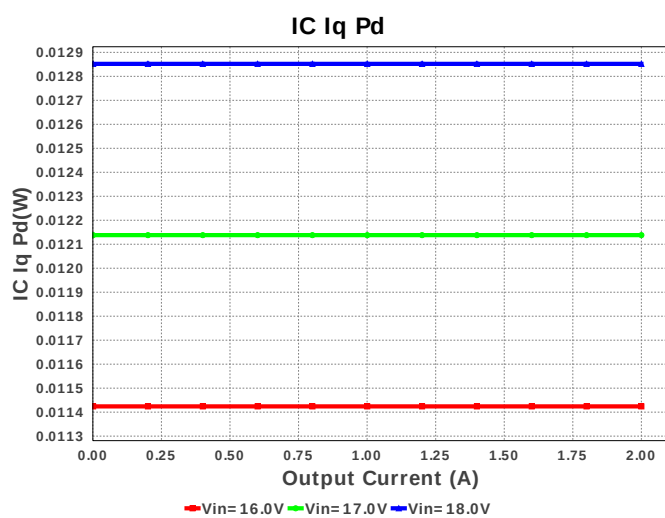
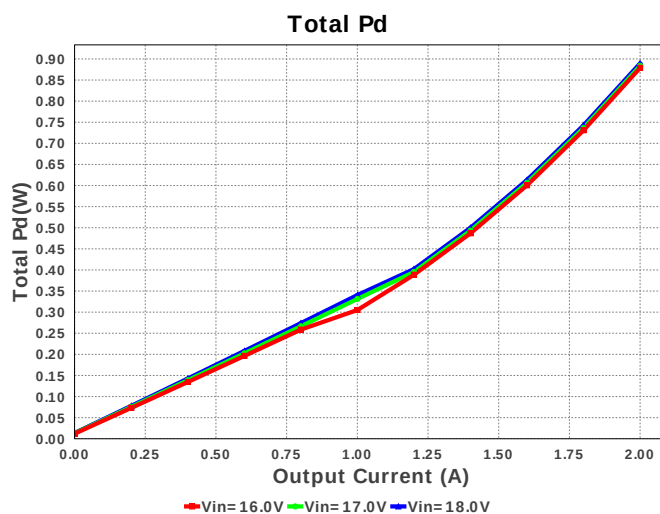
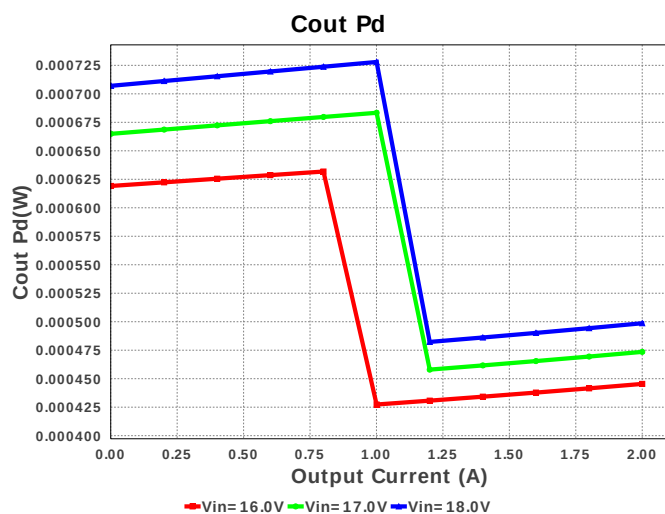
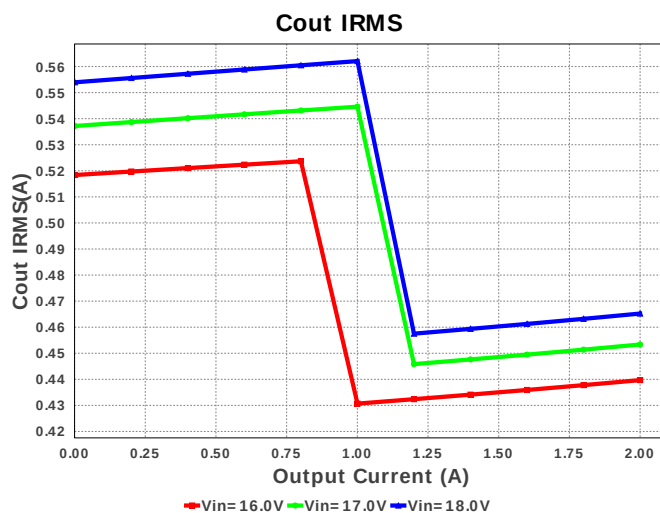
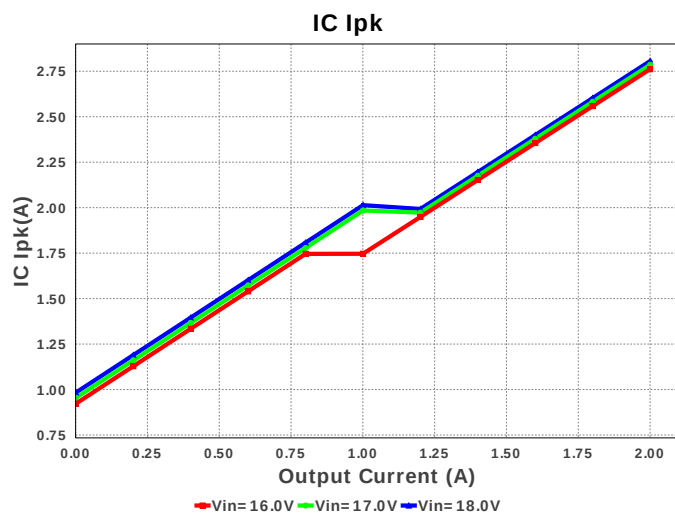
Electrical BOM

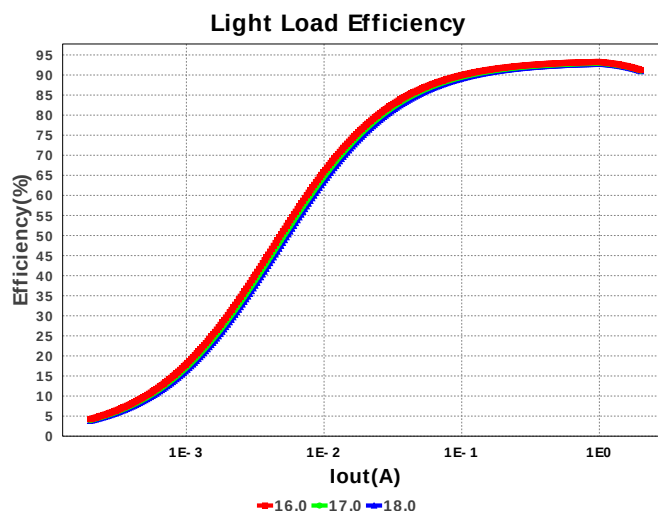
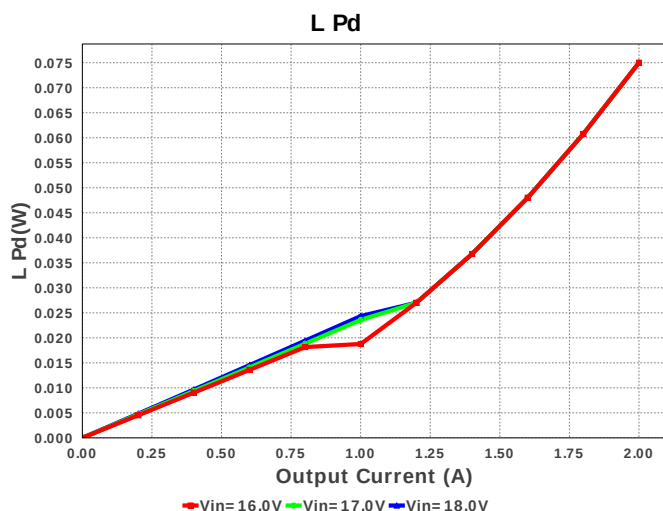
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
2.	Cff	MuRata	GRM0225C1C220JD05L Series= C0G/NP0	Cap= 22.0 pF VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	01005 2 mm ²
3.	Cin	MuRata	GRM32ER61E226KE15L Series= X5R	Cap= 22.0 uF ESR= 2.0 mOhm VDC= 25.0 V IRMS= 3.67 A	1	\$0.16	1210 15 mm ²
4.	Cout	MuRata	GRM319R61C106KE15D Series= X5R	Cap= 10.0 uF ESR= 4.608 mOhm VDC= 16.0 V IRMS= 2.54841 A	2	\$0.04	1206 11 mm ²
5.	Creg	MuRata	GRM155R61A474KE15D Series= X5R	Cap= 470.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
6.	Css	MuRata	GRM033R61A822KA01D Series= X5R	Cap= 8.2 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0201 2 mm ²
7.	L1	Bourns	SDR1005-3R3ML	L= 3.3 µH DCR= 15.0 mOhm	1	\$0.26	SDR1005 176 mm ²
8.	Ren	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
9.	Rfbb	Vishay-Dale	CRCW040223K7FKED Series= CRCW..e3	Res= 23.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
10.	Rfbb	Vishay-Dale	CRCW0402162KFKED Series= CRCW..e3	Res= 162.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11. U1		Texas Instruments	TPS54229EDDAR	Switcher	1	\$0.63	 DDA0008E 57 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	952.585 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	465.227 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.806 A	Current	Peak switch current in IC
4.	Iin Avg	716.09 mA	Current	Average input current
5.	L Ipp	1.612 A	Current	Peak-to-peak inductor ripple current
6.	BOM Count	12	General	Total Design BOM count
7.	FootPrint	289.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	784.911 kHz	General	Switching frequency
9.	Mode	CCM	General	Conduction Mode
10.	Pout	12.0 W	General	Total output power
11.	Total BOM	\$1.2	General	Total BOM Cost
12.	Vout Actual	5.994 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
13.	Vout OP	6.0 V	Op_Point	Operational Output Voltage
14.	Duty Cycle	34.786 %	Op_point	Duty cycle
15.	Efficiency	93.099 %	Op_point	Steady state efficiency
16.	IC Tj	64.196 degC	Op_point	IC junction temperature
17.	ICThetaJA	42.1 degC/W	Op_point	IC junction-to-ambient thermal resistance
18.	IOUT_OP	2.0 A	Op_point	Iout operating point
19.	VIN_OP	18.0 V	Op_point	Vin operating point
20.	Vout p-p	13.129 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	1.815 mW	Power	Input capacitor power dissipation
22.	Cout Pd	498.67 μ W	Power	Output capacitor power dissipation
23.	IC Iq Pd	12.852 mW	Power	IC Iq Pd
24.	IC Pd	812.258 mW	Power	IC power dissipation
25.	L Pd	75.0 mW	Power	Inductor power dissipation
26.	Total Pd	889.513 mW	Power	Total Power Dissipation
27.	Vout Tolerance	3.625 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	2.0	Maximum Output Current
2.	VinMax	18.0	Maximum input voltage
3.	VinMin	16.0	Minimum input voltage
4.	Vout	6.0	Output Voltage
5.	base_pn	TPS54229E	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS54229E** Product Folder : <http://www.ti.com/product/TPS54229E> : contains the data sheet and other resources.

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