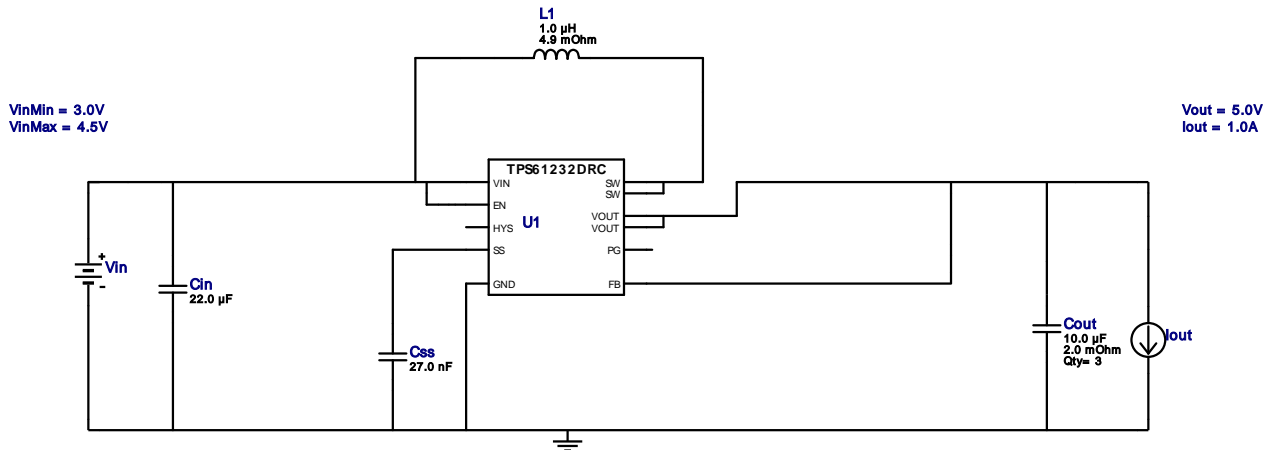



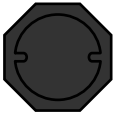

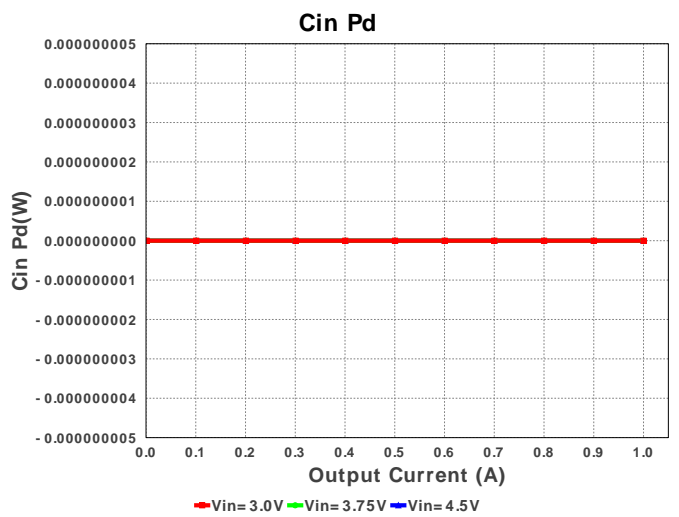
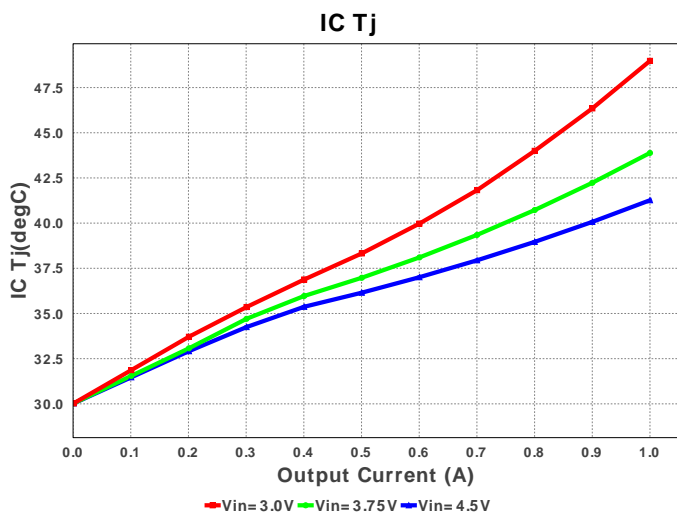
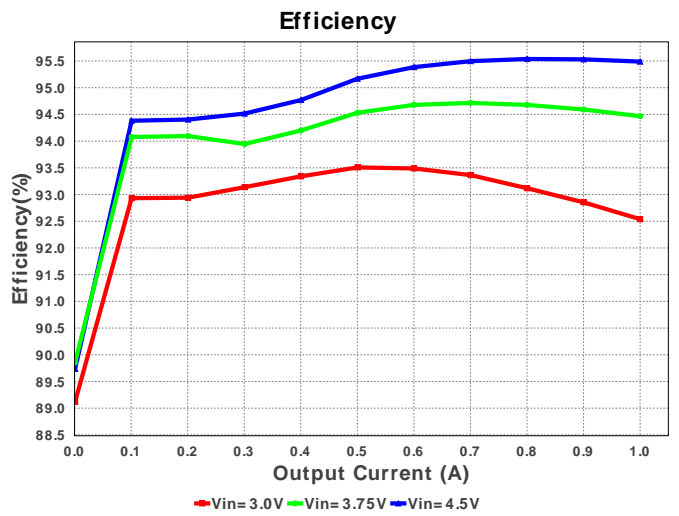
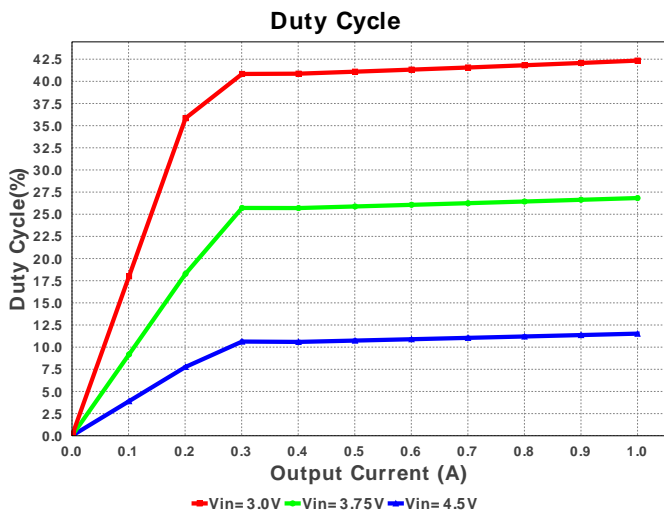
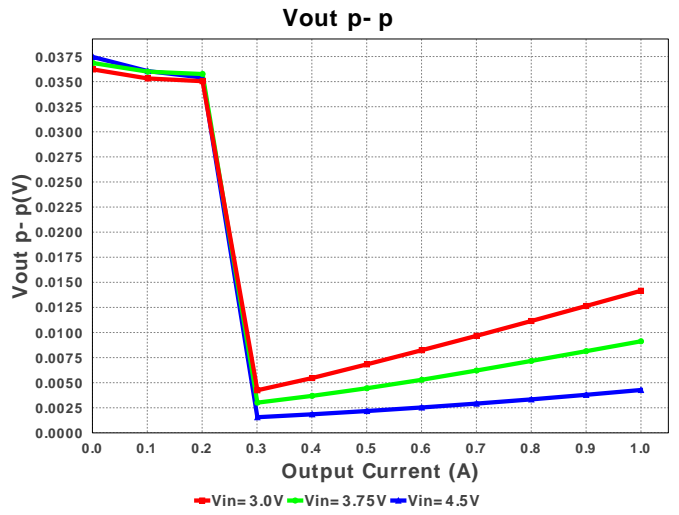
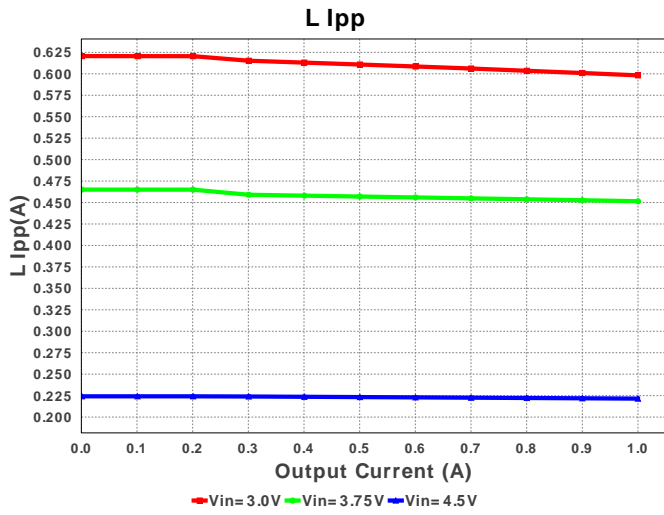
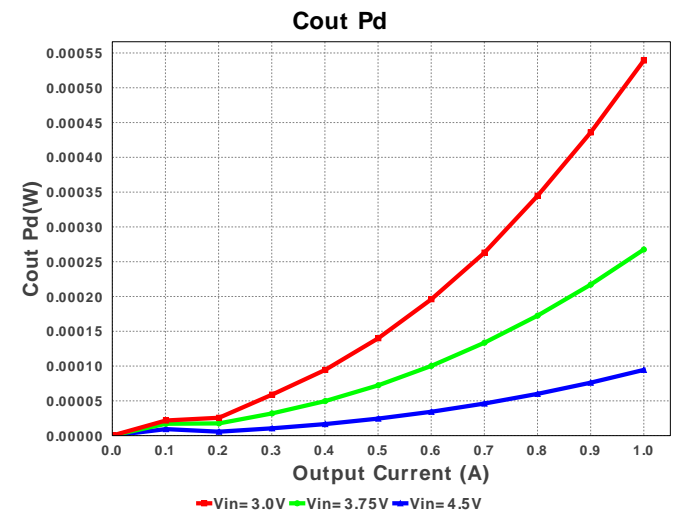
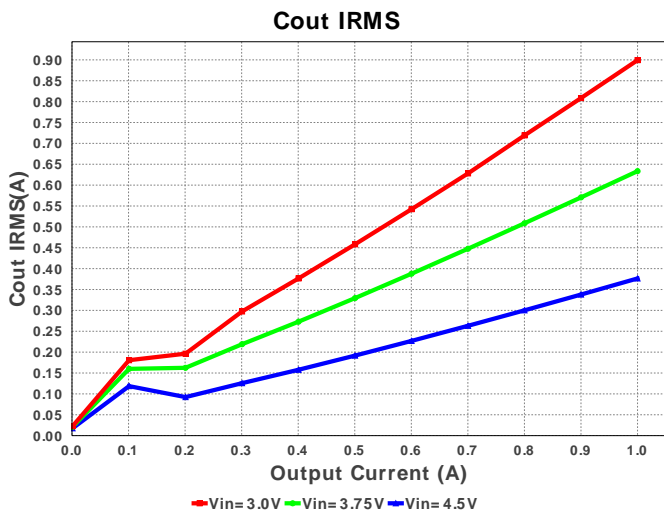
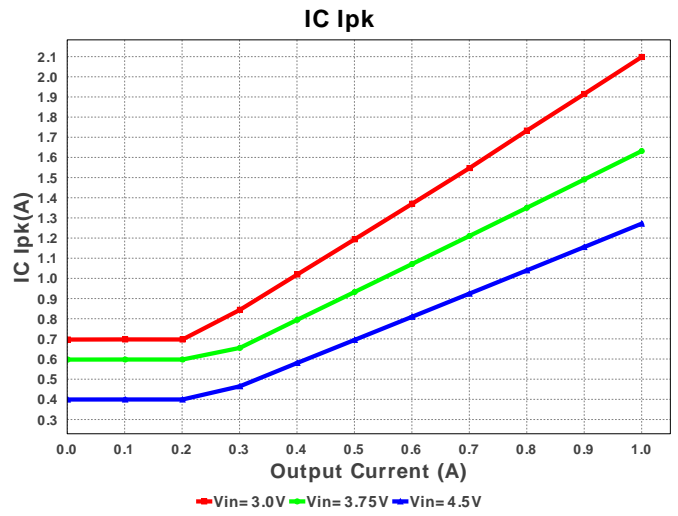
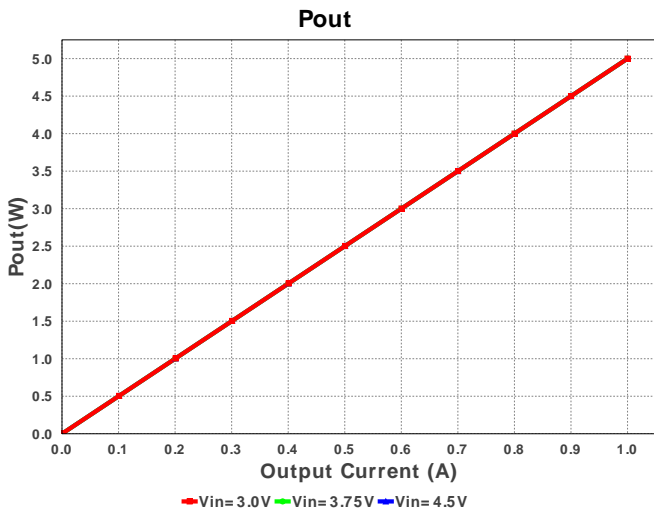
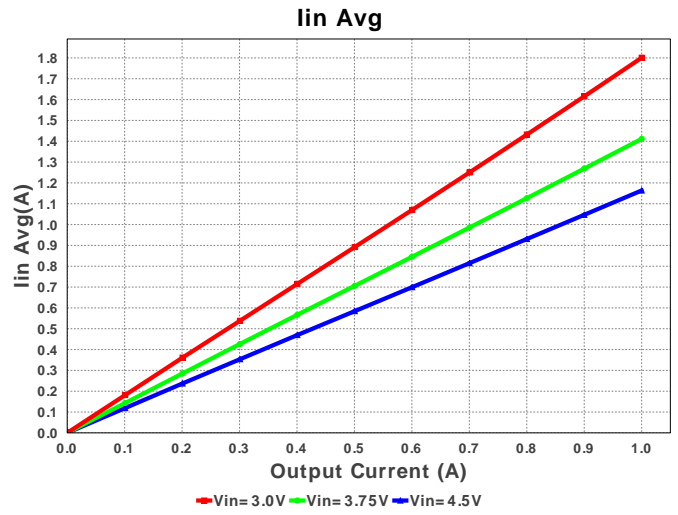
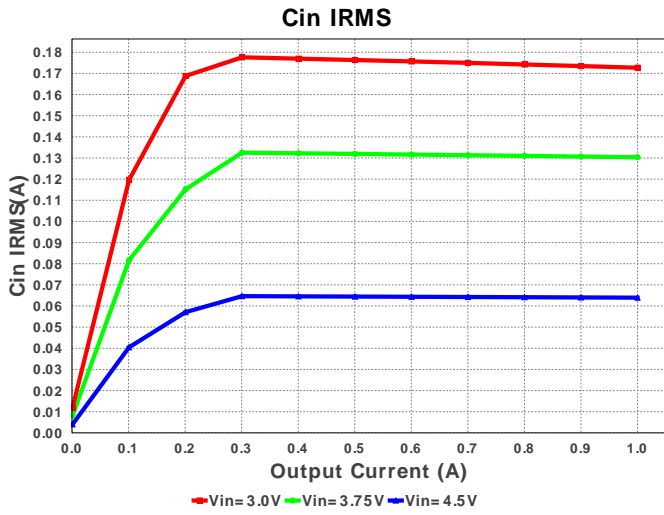


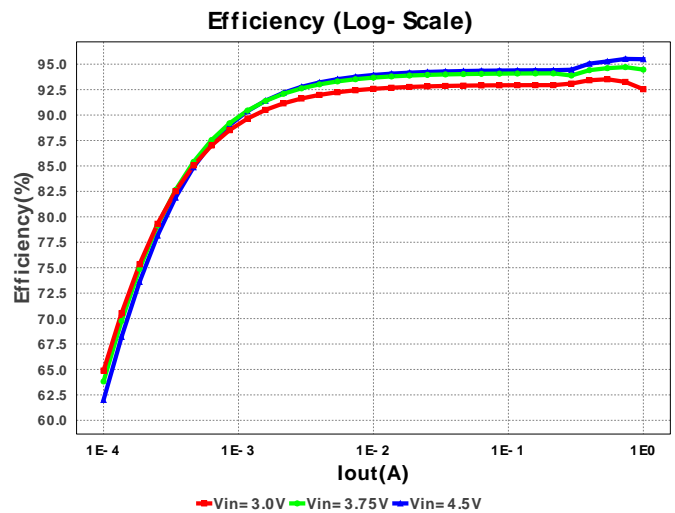
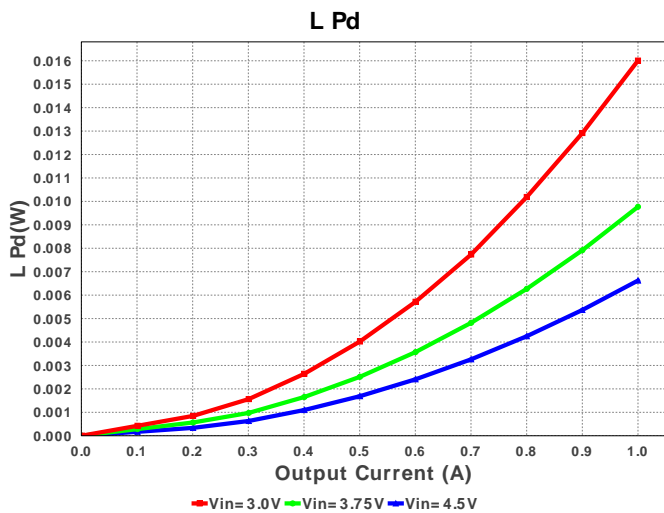
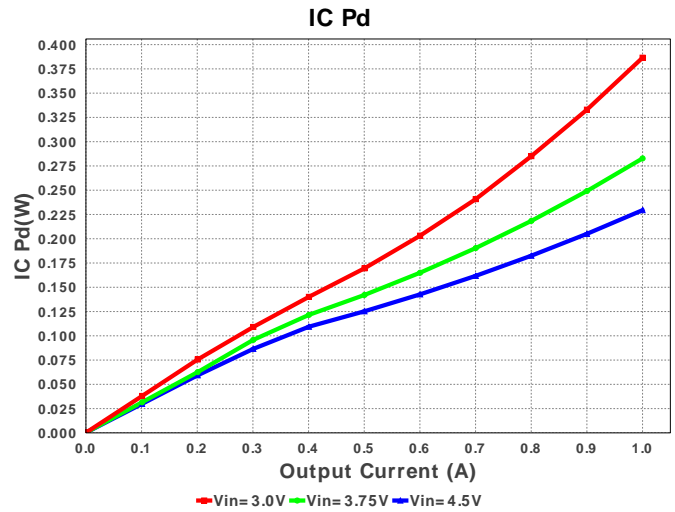
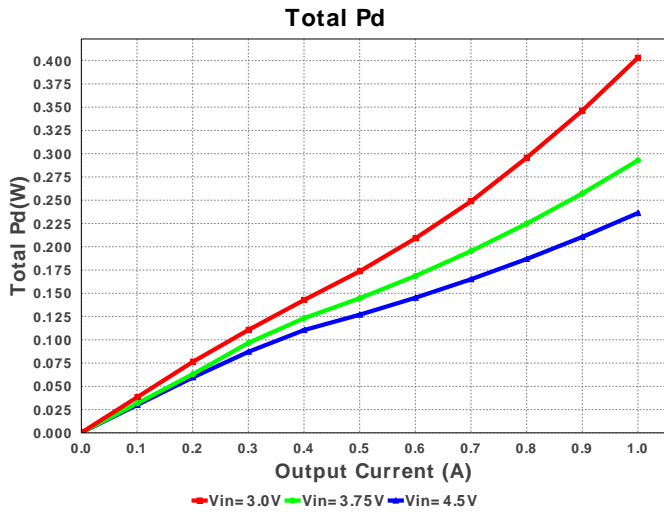
WEBENCH[®] Design Report

 Design : 4214217/10 TPS61232DRCR
 TPS61232DRCR 3.0V-4.5V to 5.00V @ 1.0A

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	TDK	C2012X5R0J226M Series= X5R	Cap= 22.0 uF VDC= 6.3 V IRMS= 0.0 A	1	\$0.06	 0805 7 mm ²
2.	Cout	MuRata	GRM21BR61A106KE19L Series= X5R	Cap= 10.0 uF ESR= 2.0 mOhm VDC= 10.0 V IRMS= 0.0 A	3	\$0.03	 0805 7 mm ²
3.	Css	MuRata	GRM155R61A273KA01D Series= X5R	Cap= 27.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm ²
4.	L1	Bourns	SRU1028-1R0Y	L= 1.0 uH DCR= 4.9 mOhm	1	\$0.33	 SRU1028 144 mm ²
5.	U1	Texas Instruments	TPS61232DRCR	Switcher	1	\$1.15	 DRC0010G 16 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	172.682 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	899.325 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.098 A	Current	Peak switch current in IC
4.	Iin Avg	1.801 A	Current	Average input current
5.	L Ipp	598.19 mA	Current	Peak-to-peak inductor ripple current
6.	BOM Count	7	General	Total Design BOM count
7.	FootPrint	190.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	2.0 MHz	General	Switching frequency
9.	Pout	5.0 W	General	Total output power
10.	Total BOM	\$1.64	General	Total BOM Cost
11.	Duty Cycle	42.341 %	Op_point	Duty cycle
12.	Efficiency	92.539 %	Op_point	Steady state efficiency
13.	IC Tj	48.978 degC	Op_point	IC junction temperature
14.	ICThetaJA	49.1 degC/W	Op_point	IC junction-to-ambient thermal resistance
15.	IOUT_OP	1.0 A	Op_point	Iout operating point
16.	VIN_OP	3.0 V	Op_point	Vin operating point
17.	Vout p-p	14.157 mV	Op_point	Peak-to-peak output ripple voltage
18.	Cin Pd	0.0 W	Power	Input capacitor power dissipation
19.	Cout Pd	539.191 μW	Power	Output capacitor power dissipation
20.	IC Pd	386.509 mW	Power	IC power dissipation
21.	L Pd	16.007 mW	Power	Inductor power dissipation
22.	Total Pd	403.118 mW	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	Iout1	1.0	Output Current #1
3.	VinMax	4.5	Maximum input voltage
4.	VinMin	3.0	Minimum input voltage
5.	Vout	5.0	Output Voltage

#	Name	Value	Description
6.	Vout1	5.0	Output Voltage #1
7.	base_pn	TPS61232	Base Product Number
8.	source	DC	Input Source Type
9.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS61232** Product Folder : <http://www.ti.com/product/TPS61232> : contains the data sheet and other resources.

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