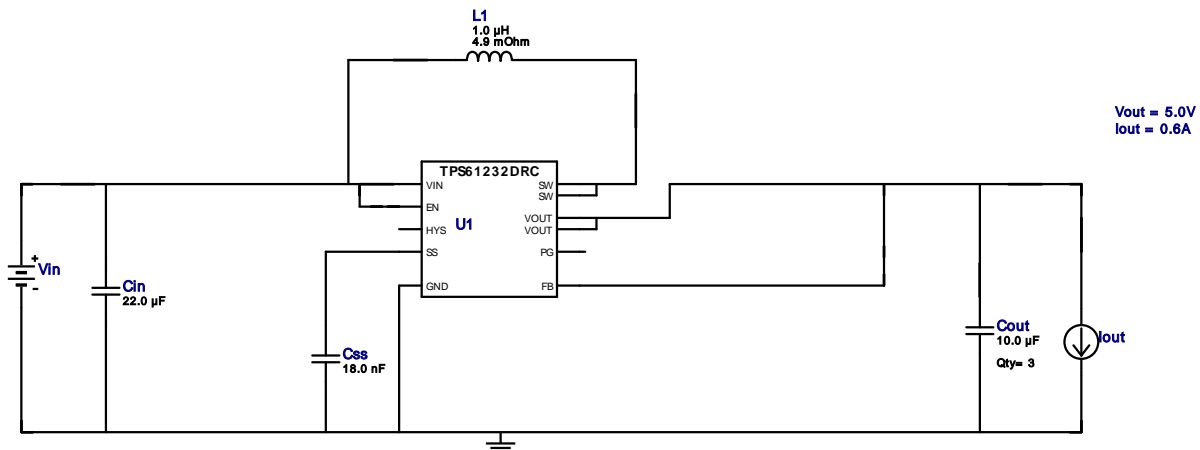


## WEBENCH® Design Report






Design : 3918487/149 TPS61232DRCR  
TPS61232DRCR 3.0V-4.3V to 5.00V @ 0.6A

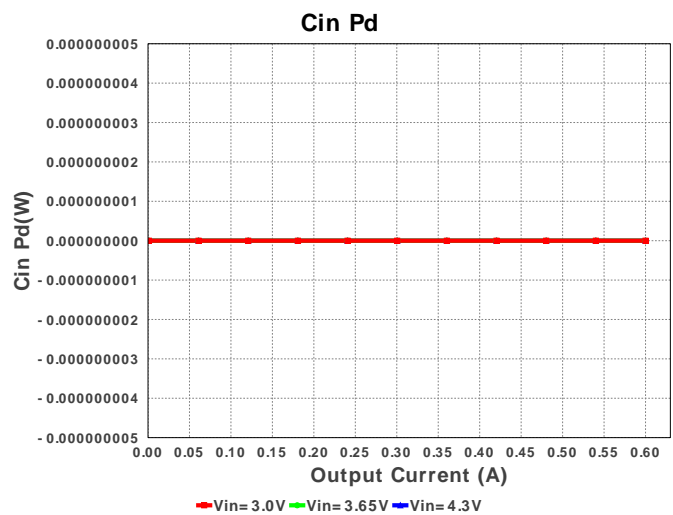
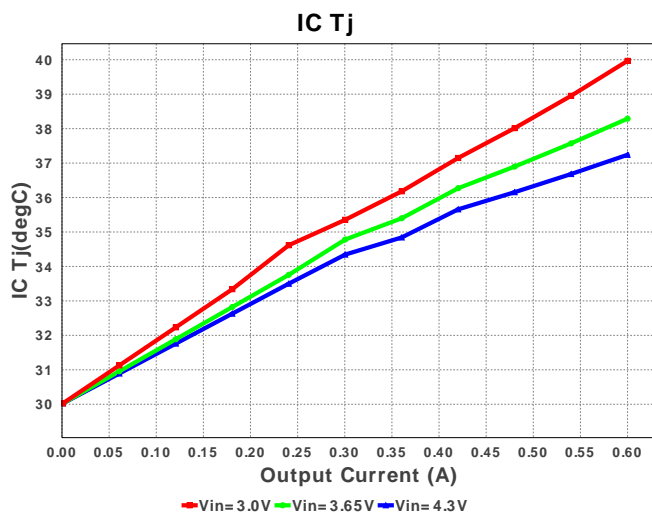
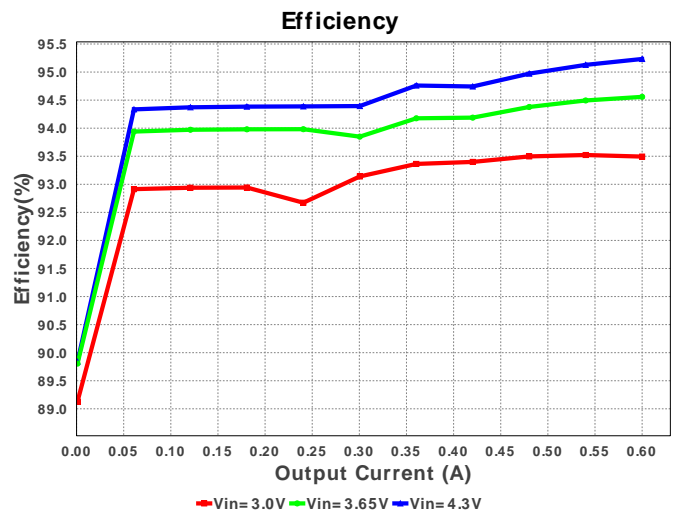
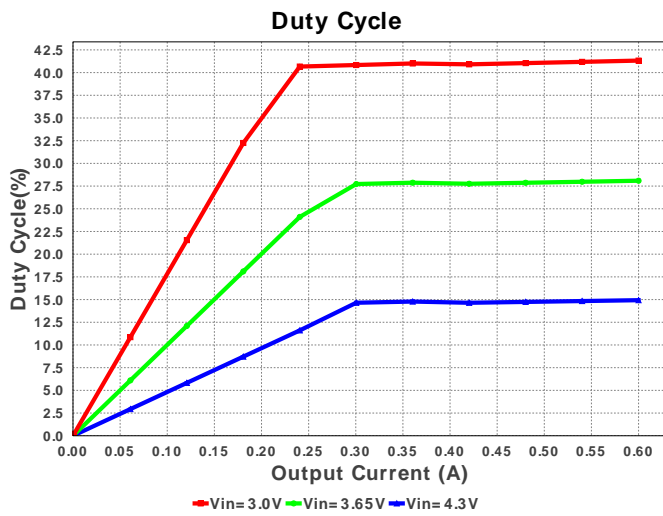
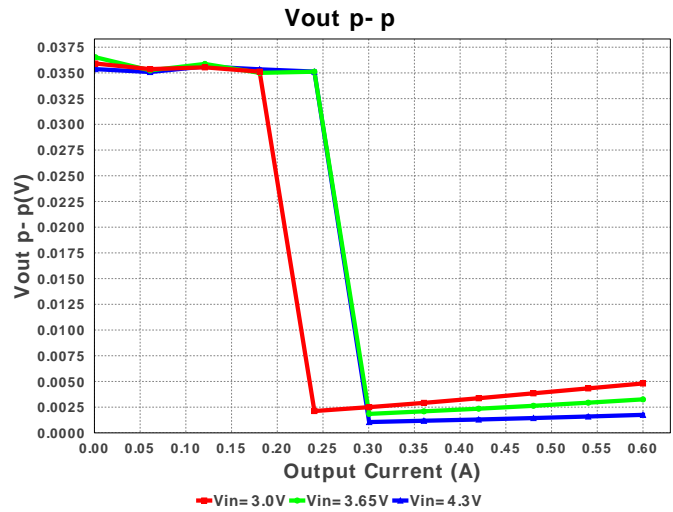
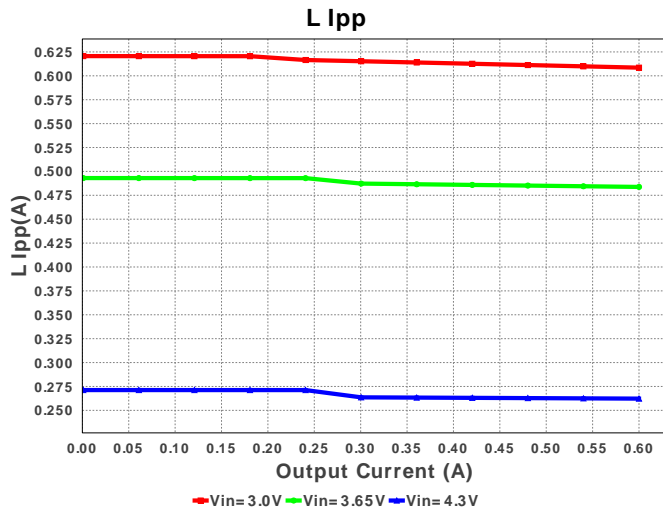


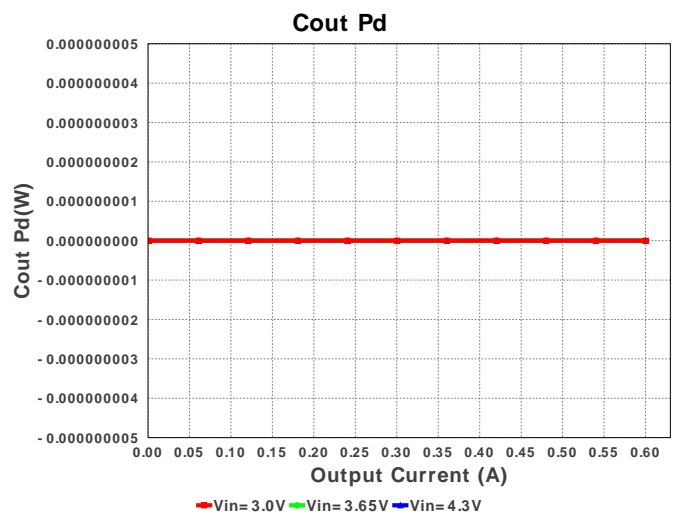
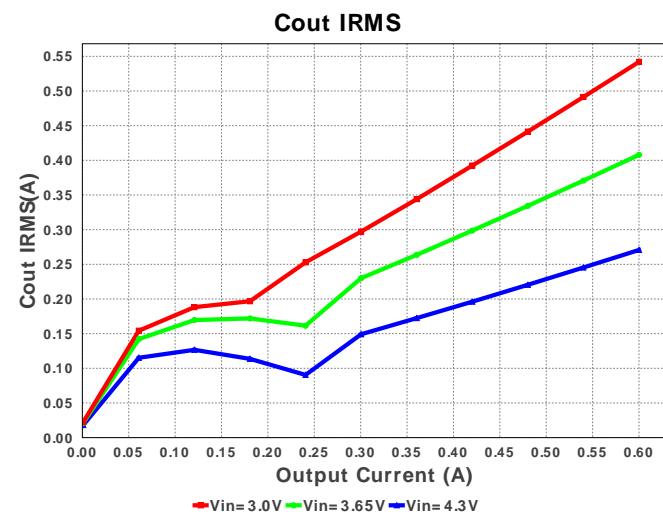
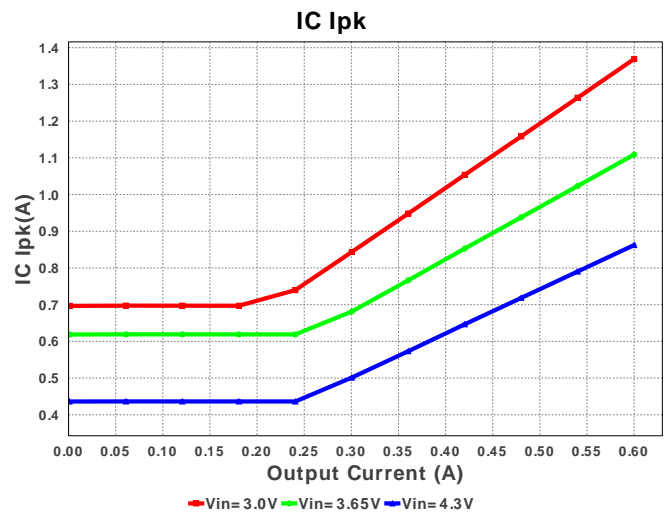
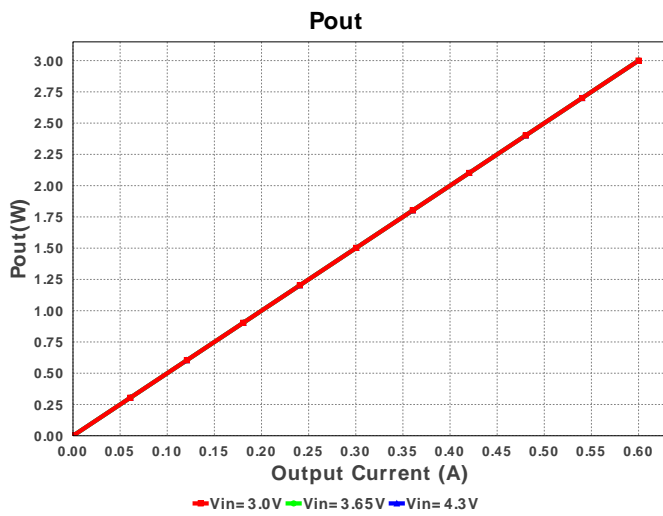
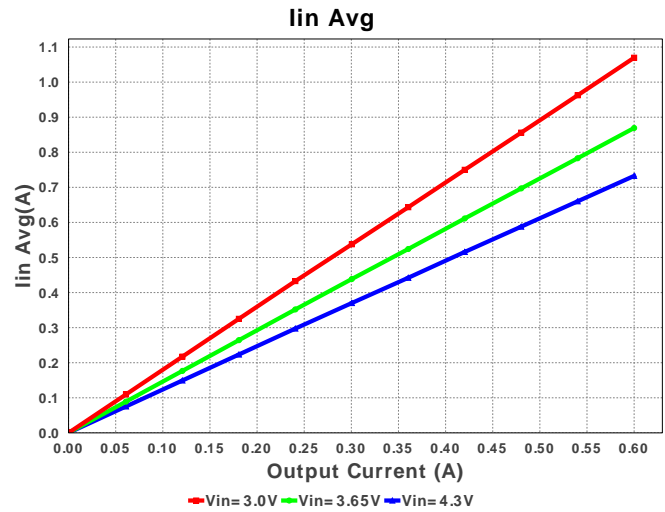
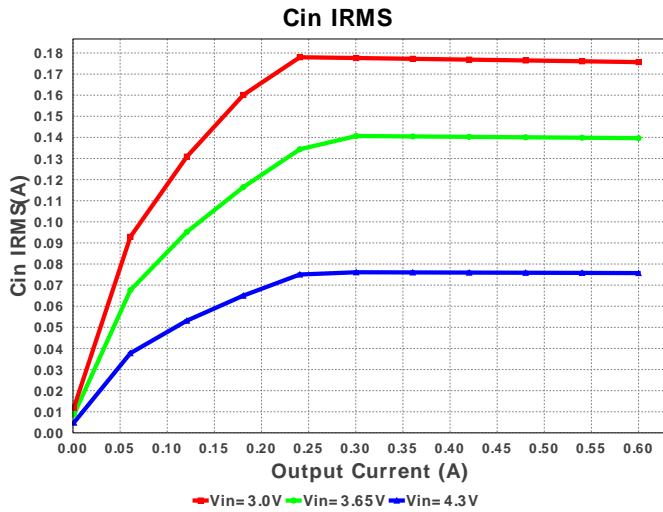
### My Comments

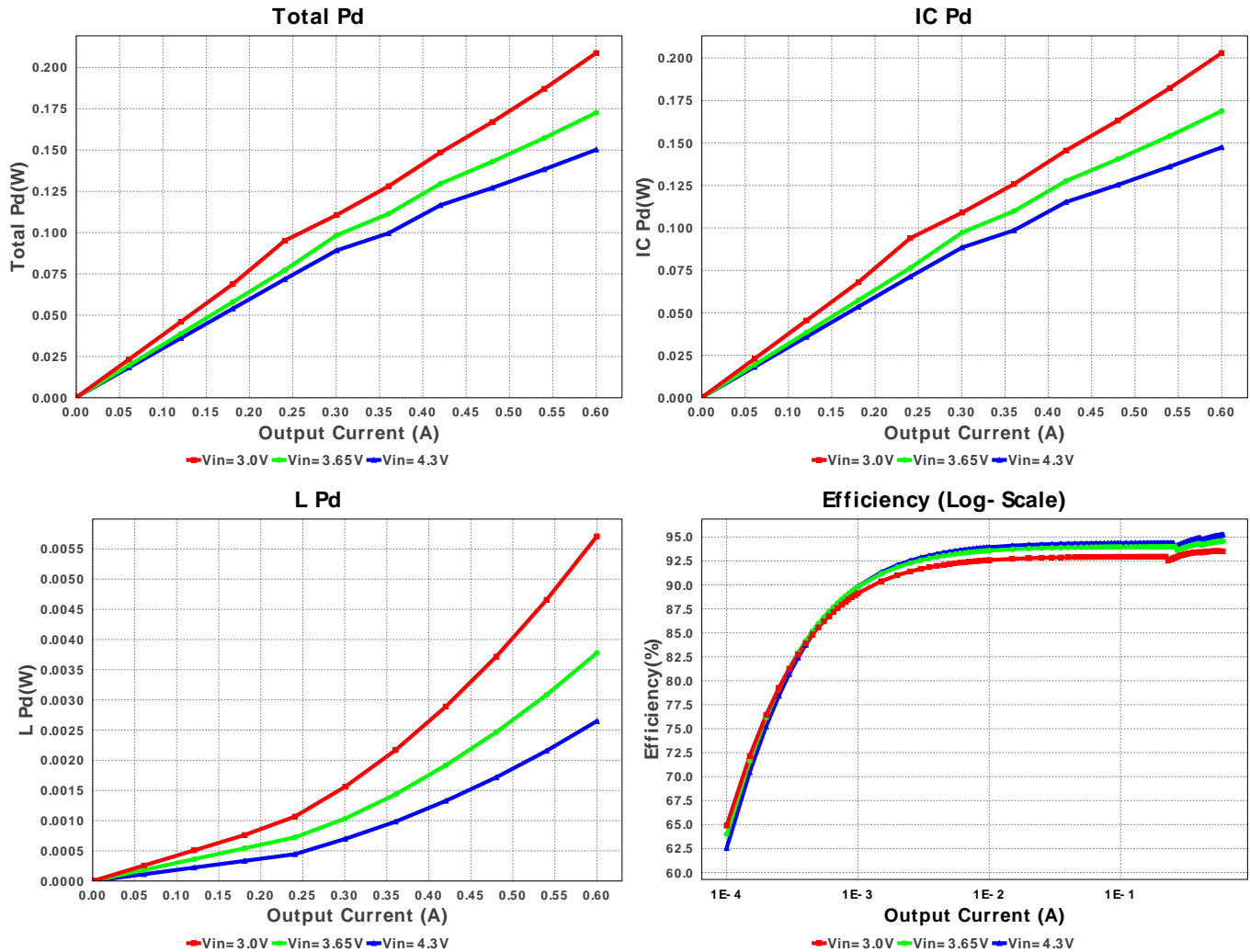
No comments

### Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	Taiyo Yuden	JMK212BJ226MG-T Series= X5R	Cap= 22.0 uF VDC= 6.3 V IRMS= 0.0 A	1	\$0.05	 0805 7 mm <sup>2</sup>
2.	Cout	Taiyo Yuden	LMK212BJ106KG-T Series= X5R	Cap= 10.0 uF VDC= 10.0 V IRMS= 0.0 A	3	\$0.03	 0805 7 mm <sup>2</sup>
3.	Css	MuRata	GRM155R71C183KA01D Series= X7R	Cap= 18.0 nF VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm <sup>2</sup>
4.	L1	Bourns	SRU1028-1R0Y	L= 1.0 µH DCR= 4.9 mOhm	1	\$0.33	 SRU1028 144 mm <sup>2</sup>
5.	U1	Texas Instruments	TPS61232DRCR	Switcher	1	\$0.95	 DRC0010G 16 mm <sup>2</sup>







## Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	175.667 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	541.986 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	1.369 A	Current	Peak switch current in IC
4.	Iin Avg	1.07 A	Current	Average input current
5.	L Ipp	608.53 mA	Current	Peak-to-peak inductor ripple current
6.	BOM Count	7	General	Total Design BOM count
7.	FootPrint	190.0 mm <sup>2</sup>	General	Total Foot Print Area of BOM components
8.	Frequency	1.994 MHz	General	Switching frequency
9.	Mode	BOOST PWM CCM	General	PWM/PFM Mode
10.	Pout	3.0 W	General	Total output power
11.	Total BOM	\$1.43	General	Total BOM Cost
12.	Duty Cycle	41.321 %	Op_point	Duty cycle
13.	Efficiency	93.494 %	Op_point	Steady state efficiency
14.	IC Tj	39.967 degC	Op_point	IC junction temperature
15.	ICThetaJA	49.1 degC/W	Op_point	IC junction-to-ambient thermal resistance
16.	IOUT_OP	600.0 mA	Op_point	Iout operating point
17.	VIN_OP	3.0 V	Op_point	Vin operating point
18.	Vout p-p	4.805 mV	Op_point	Peak-to-peak output ripple voltage
19.	Cin Pd	0.0 W	Power	Input capacitor power dissipation
20.	Cout Pd	0.0 W	Power	Output capacitor power dissipation
21.	IC Pd	202.993 mW	Power	IC power dissipation
22.	L Pd	5.709 mW	Power	Inductor power dissipation
23.	Total Pd	208.765 mW	Power	Total Power Dissipation
24.	Vout Tolerance	2.0 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

## Design Inputs

#	Name	Value	Description
1.	Iout	600.0 m	Maximum Output Current
2.	VinMax	4.3	Maximum input voltage

#	Name	Value	Description
3.	VinMin	3.0	Minimum input voltage
4.	VinTyp	3.7	Typical input voltage
5.	Vout	5.0	Output Voltage
6.	base_pn	TPS61232	Base Product Number
7.	source	DC	Input Source Type
8.	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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