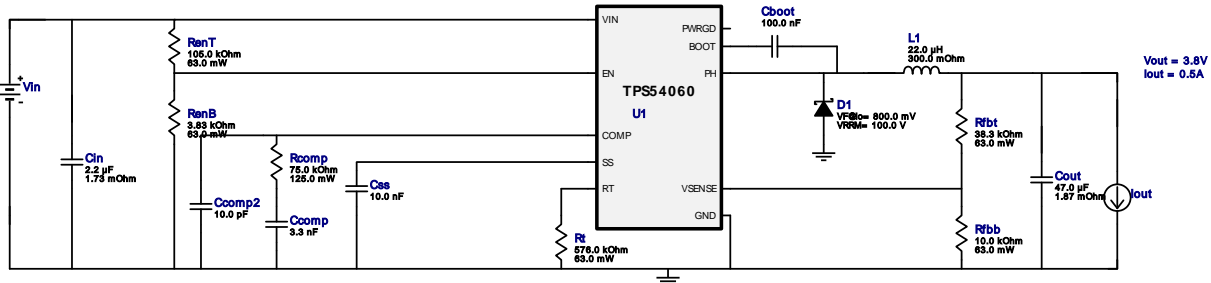



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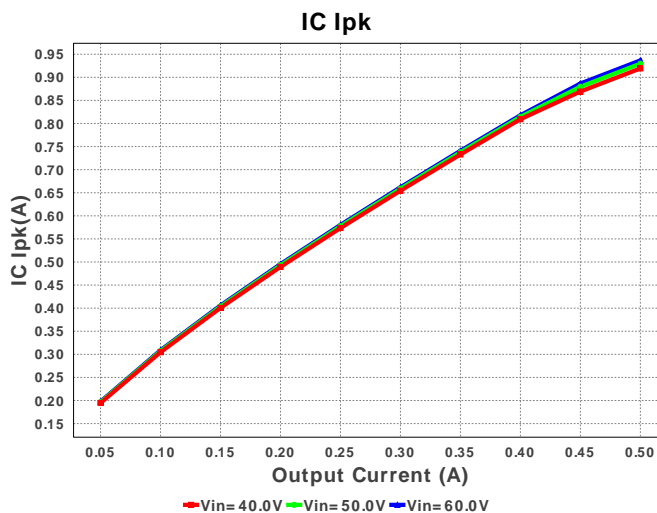
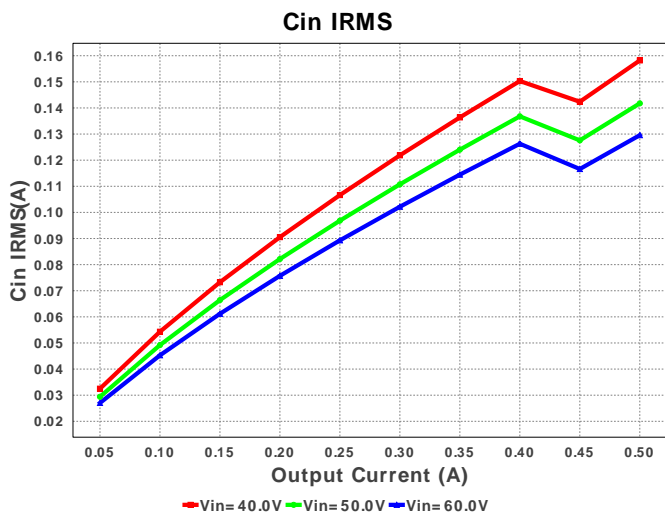
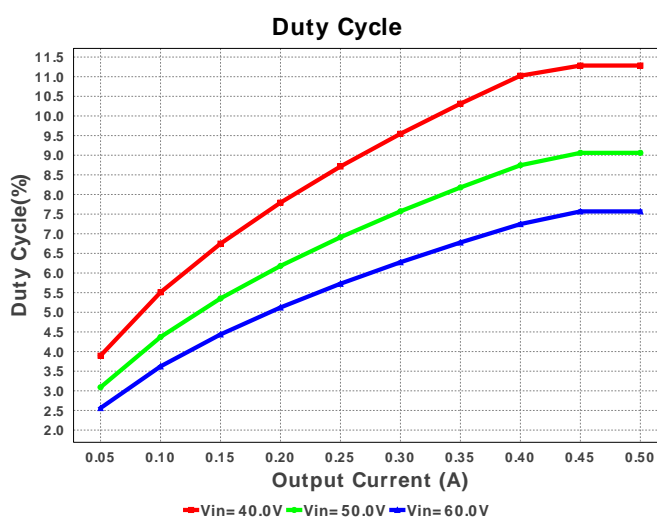
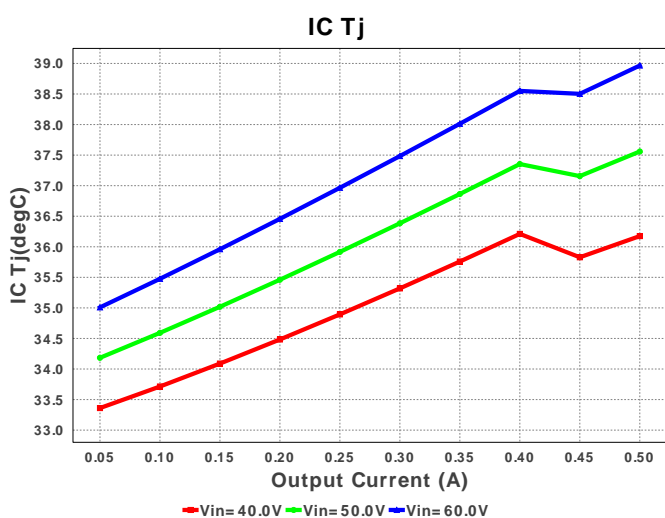
 Design : 4521224/50 TPS54060DGQR
 TPS54060DGQR 40.0V-60.0V to 3.80V @ 0.5A

My Comments

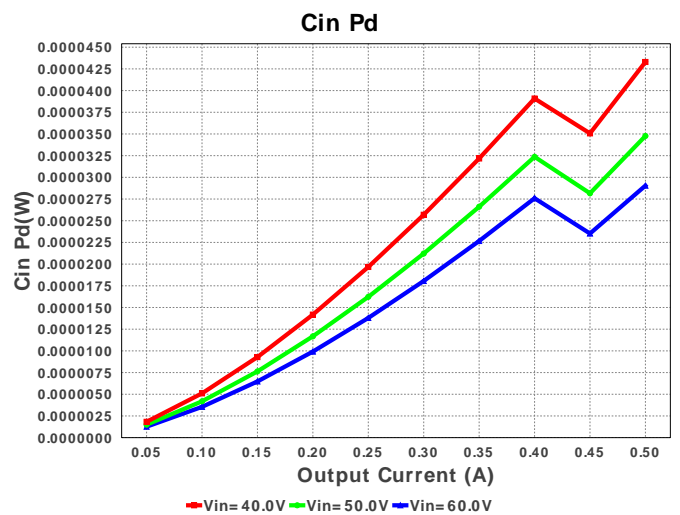
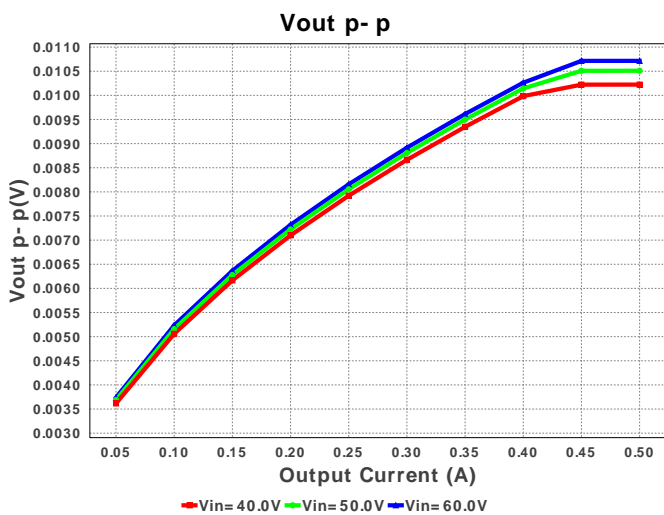
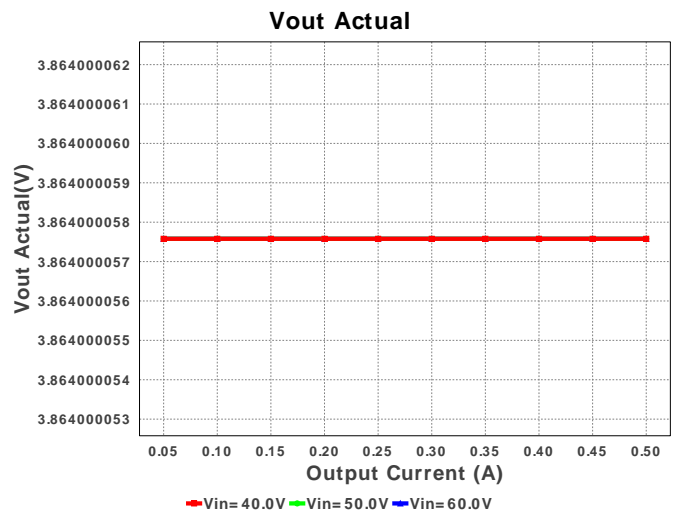
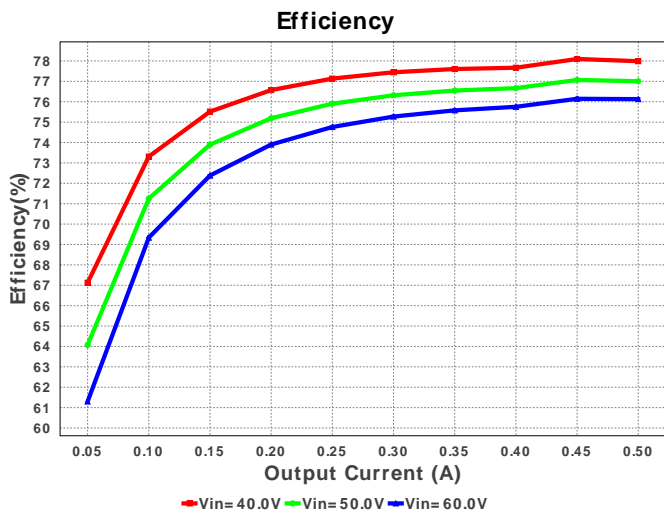
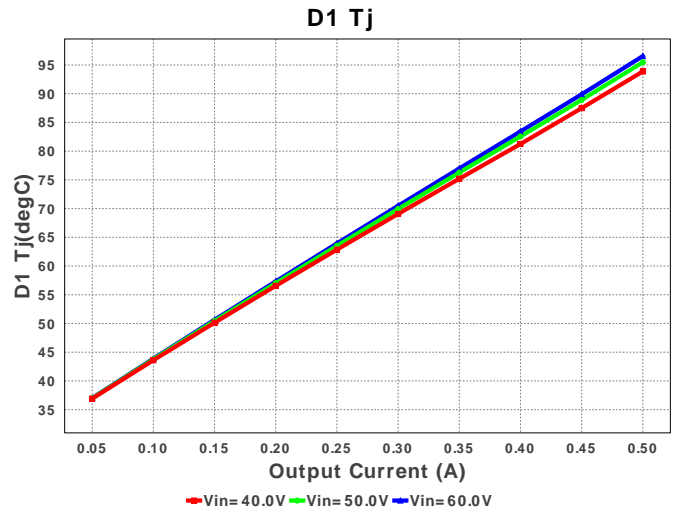
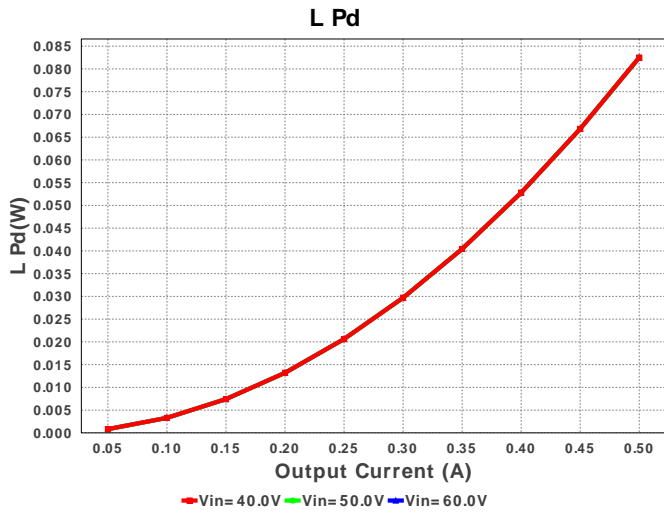
No comments

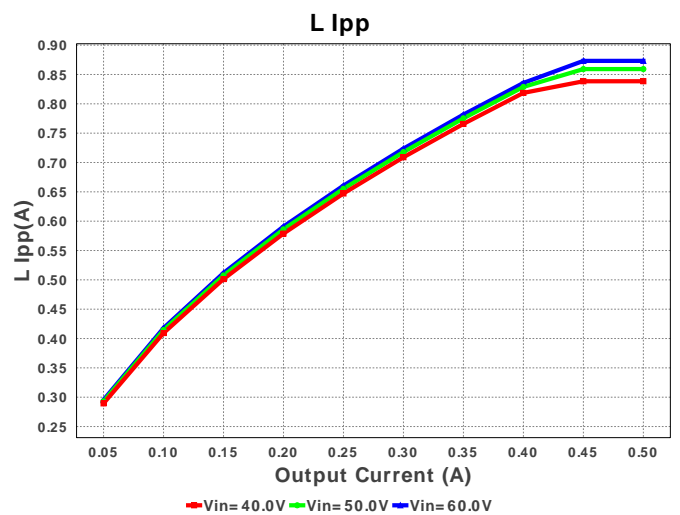
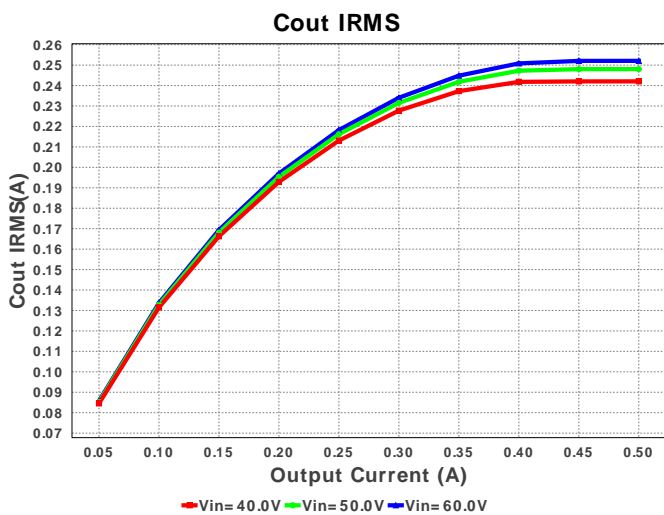
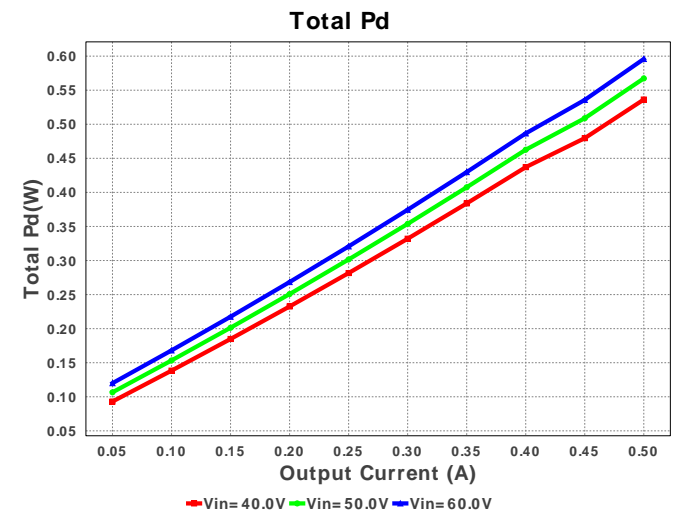
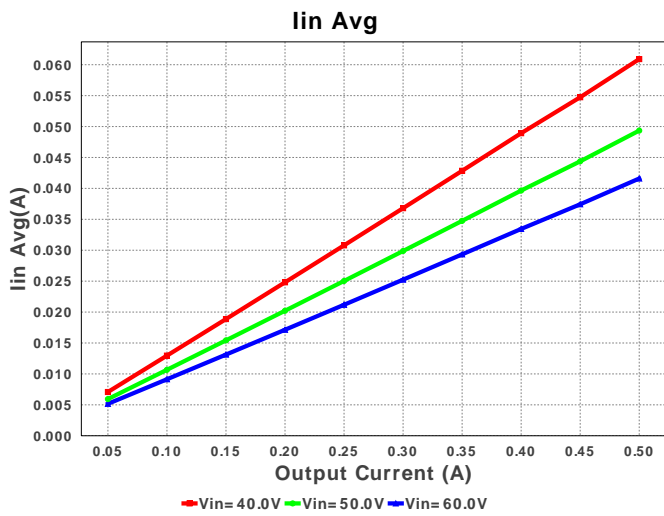
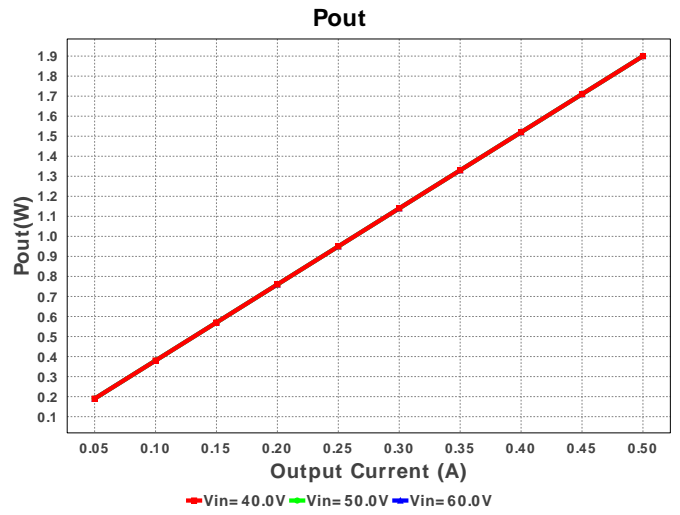
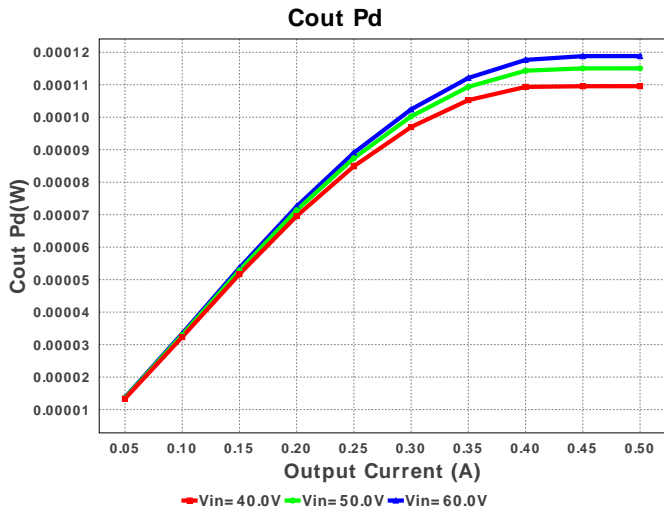
Electrical BOM

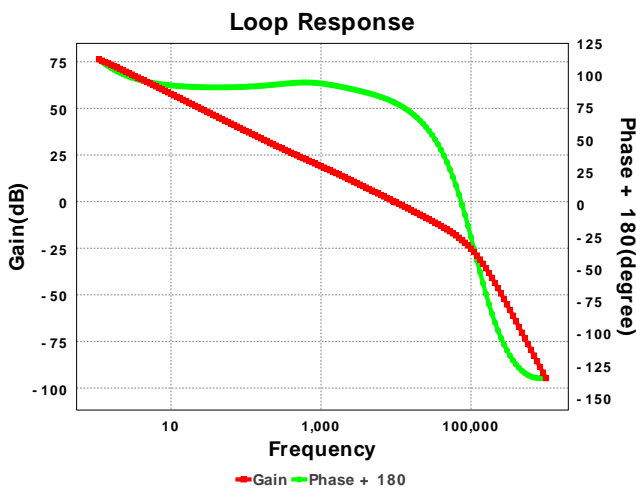
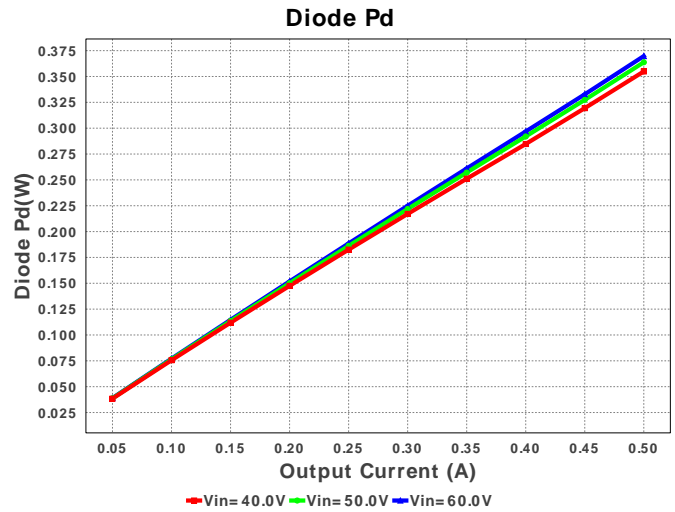
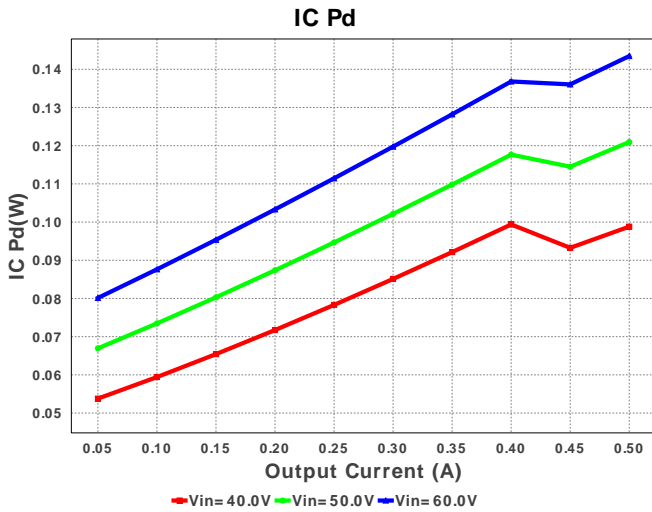
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
2.	Ccomp	Yageo America	CC0805KRX7R9BB332 Series= X7R	Cap= 3.3 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
3.	Ccomp2	Kemet	C0805C100K5GACTU Series= C0G/NP0	Cap= 10.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
4.	Cin	TDK	C3225X7R2A225K230AB Series= X7R	Cap= 2.2 uF ESR= 1.73 mOhm VDC= 100.0 V IRMS= 5.5932 A	1	\$0.20	1210_250 15 mm ²
5.	Cout	CUSTOM	CUSTOM Series= ?	Cap= 47.0 uF ESR= 1.87 mOhm VDC= 7.6 V IRMS= 500.0 mA	1	NA	CUSTOM 0 mm ²
6.	Css	Yageo America	CC0805KRX7R9BB103 Series= X7R	Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
7.	D1	Fairchild Semiconductor	SSA210	VF@Io= 800.0 mV VRRM= 100.0 V	1	\$0.10	SMA 37 mm ²
8.	L1	CUSTOM	CUSTOM	L= 22.0 uH DCR= 300.0 mOhm	1	NA	CUSTOM 0 mm ²
9.	Rcomp	Panasonic	ERJ-6ENF7502V Series= ERJ-6E	Res= 75.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
10.	RenB	Vishay-Dale	CRCW04023K83FKED Series= CRCW..e3	Res= 3.83 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
11.	RenT	Vishay-Dale	CRCW0402105KFKED Series= CRCW..e3	Res= 105.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
12.	Rfbb	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
13.	Rfbt	Vishay-Dale	CRCW040238K3FKED Series= CRCW..e3	Res= 38.3 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
14.	Rt	Vishay-Dale	CRCW0402576KFKED Series= CRCW..e3	Res= 576.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
15.	U1	Texas Instruments	TPS54060DGQR	Switcher	1	\$1.10	 S-PDSO-G10 24 mm ²









Operating Values

#	Name	Value	Category	Description
1.	BOM Count	15		Total Design BOM count
2.	Total BOM	\$0.0		Total BOM Cost
3.	Cin IRMS	129.57 mA	Current	Input capacitor RMS ripple current
4.	Cout IRMS	252.074 mA	Current	Output capacitor RMS ripple current
5.	IC Ipk	936.606 mA	Current	Peak switch current in IC
6.	Iin Avg	41.597 mA	Current	Average input current
7.	L Ipp	873.211 mA	Current	Peak-to-peak inductor ripple current
8.	FootPrint	279.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	221.44 kHz	General	Switching frequency
10.	Mode	CCM	General	Conduction Mode
11.	Pout	1.9 W	General	Total output power
12.	D1 Tj	96.55 degC	Op_Point	D1 junction temperature
13.	Low Freq Gain	76.32 dB	Op_Point	Gain at 10Hz
14.	Vout Actual	3.864 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
15.	Vout OP	3.8 V	Op_Point	Operational Output Voltage
16.	Cross Freq	9.514 kHz	Op_point	Bode plot crossover frequency
17.	Duty Cycle	7.569 %	Op_point	Duty cycle
18.	Efficiency	76.127 %	Op_point	Steady state efficiency
19.	Gain Marg	-20.732 dB	Op_point	Bode Plot Gain Margin
20.	IC Tj	38.966 degC	Op_point	IC junction temperature
21.	ICThetaJA	62.5 degC/W	Op_point	IC junction-to-ambient thermal resistance
22.	IOUT_OP	500.0 mA	Op_point	Iout operating point
23.	Phase Marg	79.61 deg	Op_point	Bode Plot Phase Margin
24.	VIN_OP	60.0 V	Op_point	Vin operating point
25.	Vout p-p	10.715 mV	Op_point	Peak-to-peak output ripple voltage
26.	Cin Pd	29.044 μW	Power	Input capacitor power dissipation
27.	Cout Pd	118.823 μW	Power	Output capacitor power dissipation
28.	Diode Pd	369.722 mW	Power	Diode power dissipation
29.	IC Pd	143.451 mW	Power	IC power dissipation
30.	L Pd	82.5 mW	Power	Inductor power dissipation
31.	Total Pd	595.827 mW	Power	Total Power Dissipation

#	Name	Value	Category	Description
32.	Vout Tolerance	2.618 %		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.	SoftStart	3.0 ms	Soft Start Time (ms)
3.	VinMax	60.0	Maximum input voltage
4.	VinMin	40.0	Minimum input voltage
5.	Vout	3.8	Output Voltage
6.	base_pn	TPS54060	Base Product Number
7.	source	DC	Input Source Type
8.	Ta	30.0	Ambient temperature
9.	UserFsw	221.44 k	Customer Selected Frequency

Design Assistance

1. **TPS54060** Product Folder : <http://www.ti.com/product/TPS54060> : contains the data sheet and other resources.

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