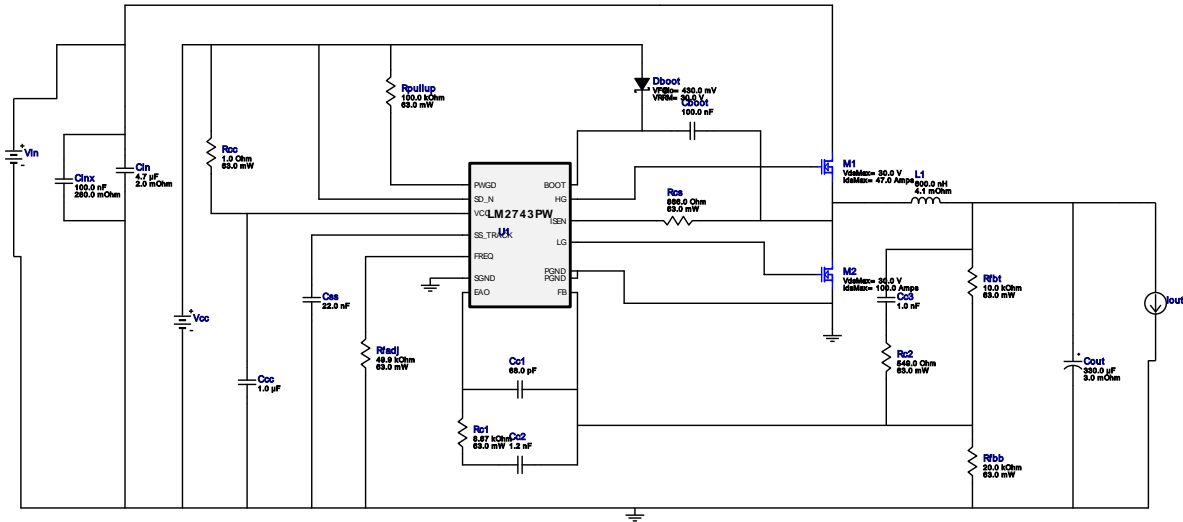


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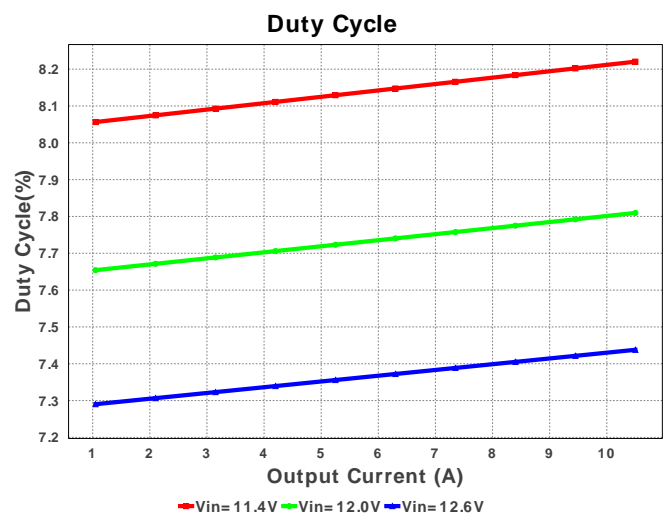
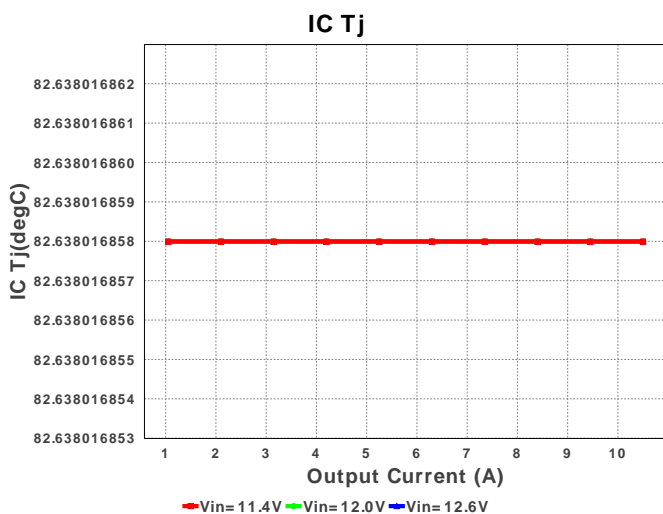
 Design : 1228111/434 LM2743MTCX/NOPB
 LM2743MTCX/NOPB 11.4V-12.6V to .90V @ 10.5A

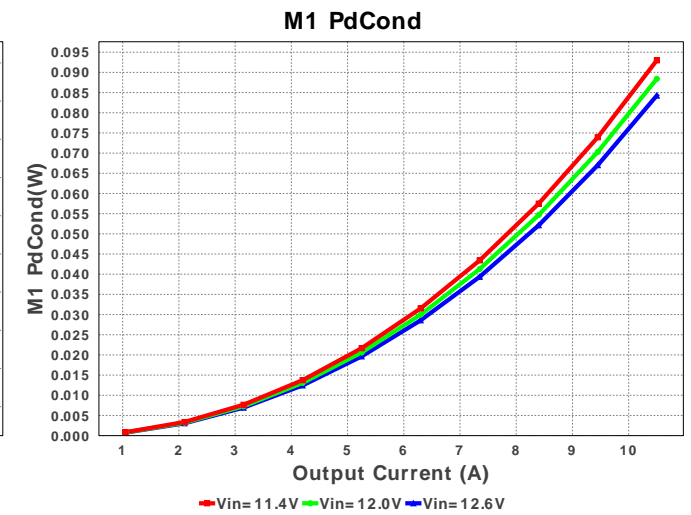
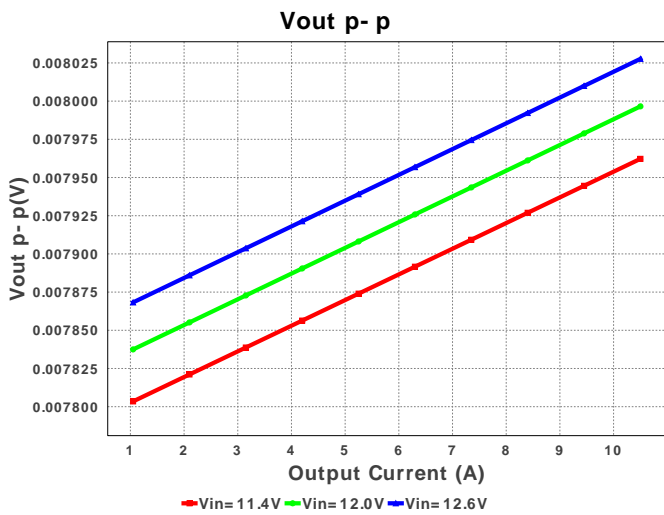
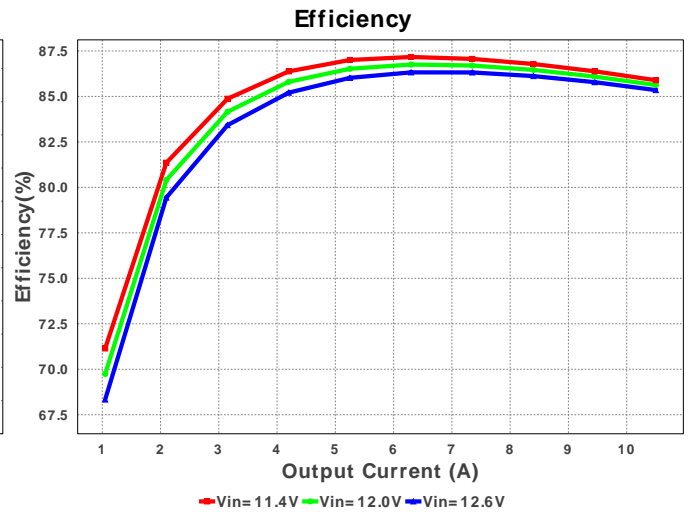
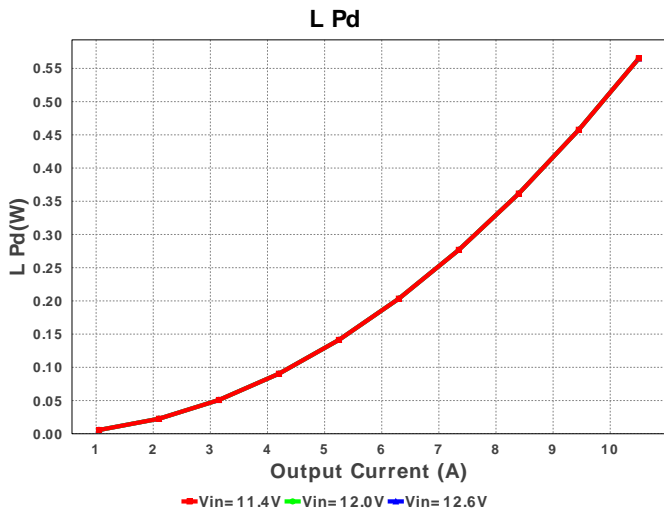
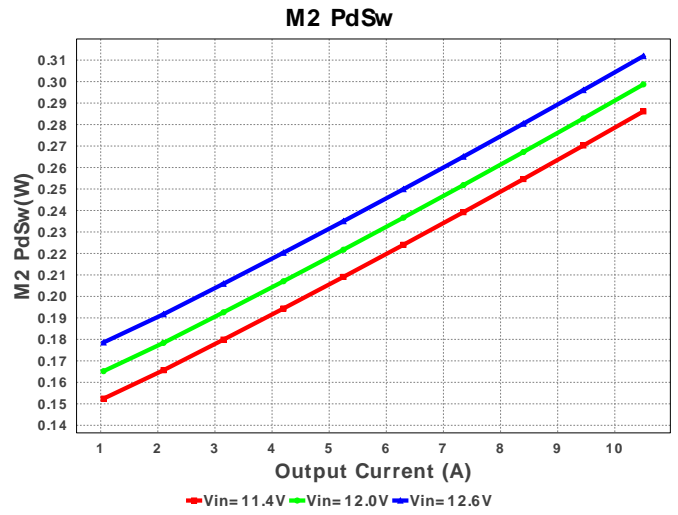
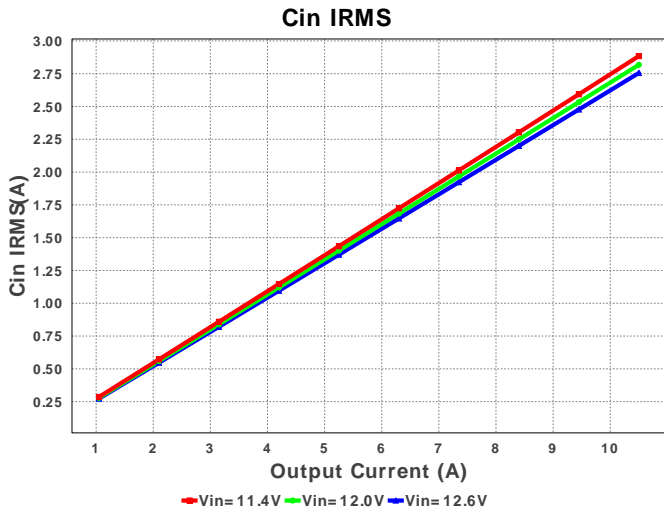
 VinMin = 11.4V
 VinMax = 12.6V

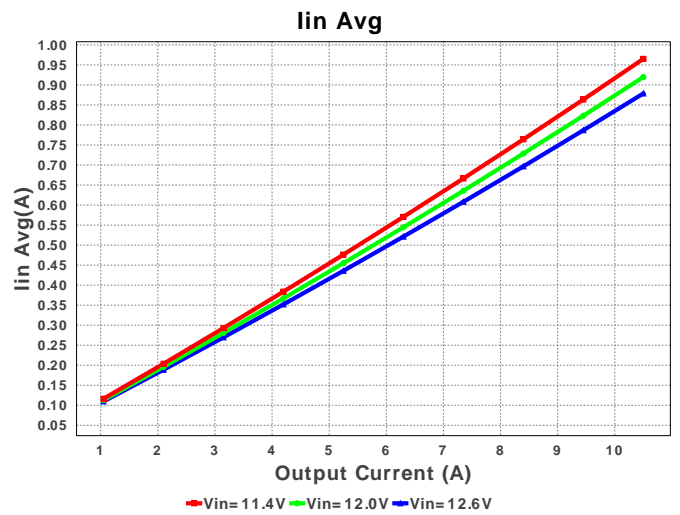
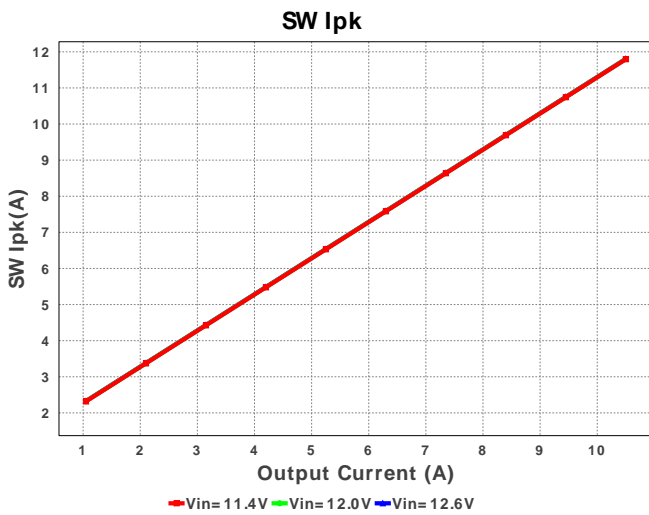
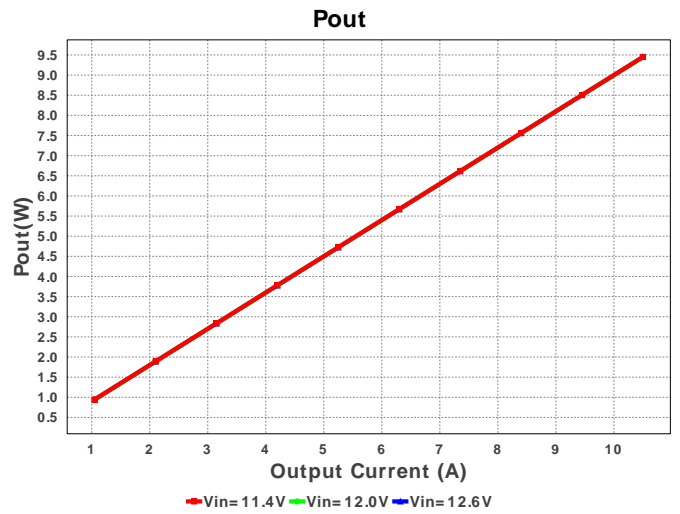
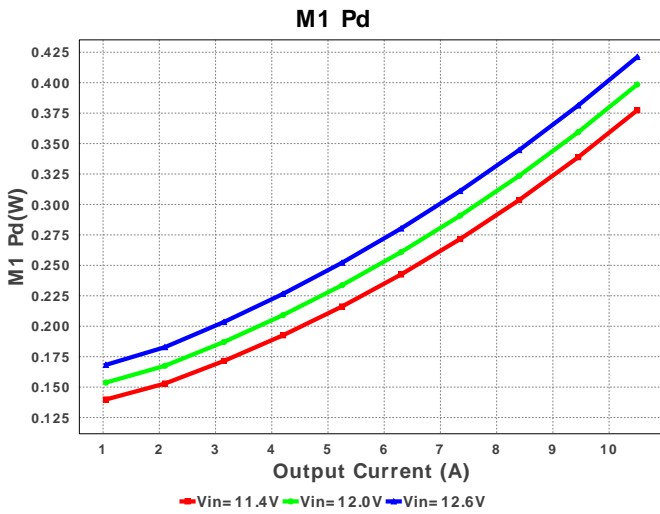
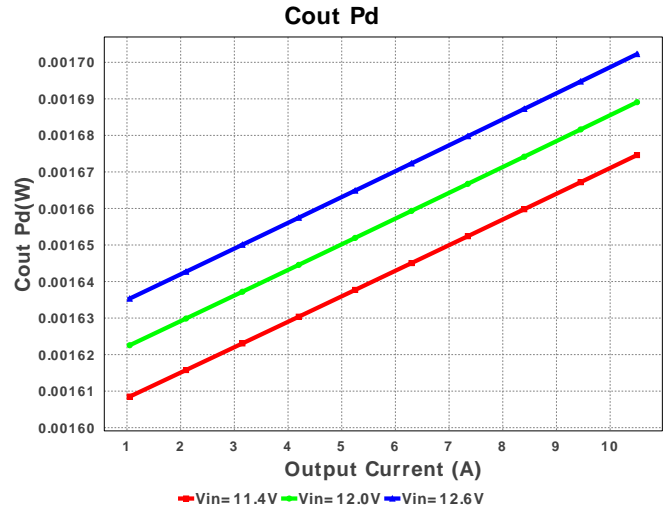
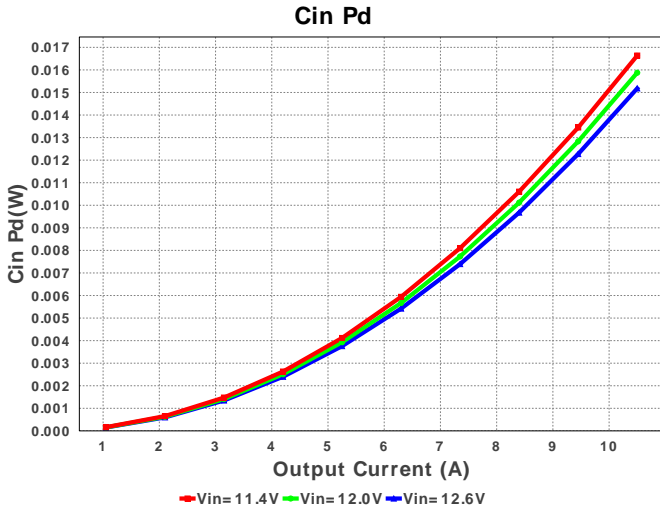
 Vout = 0.9V
 Iout = 10.5A

Electrical BOM

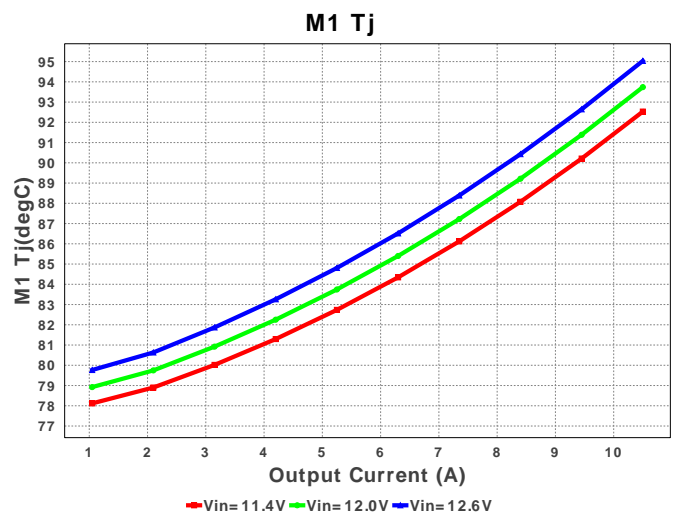
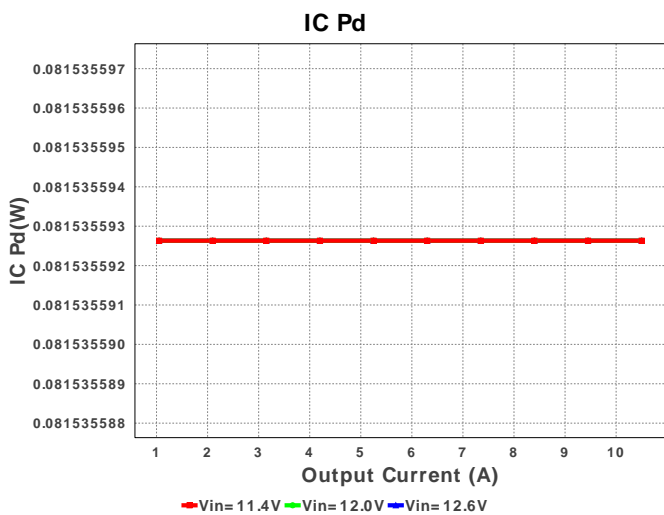
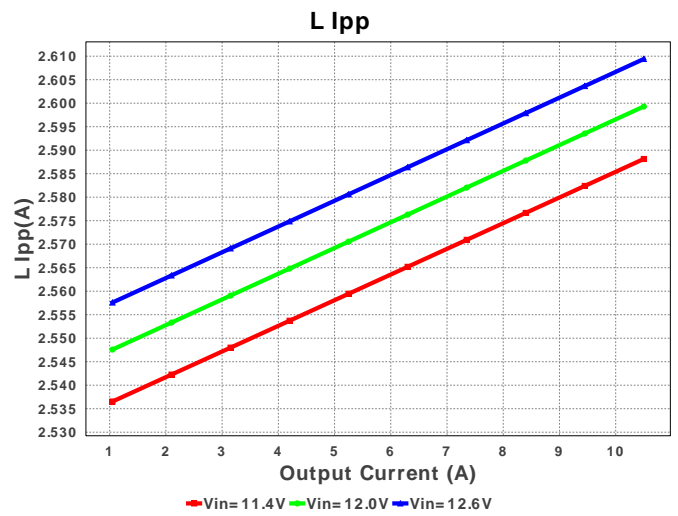
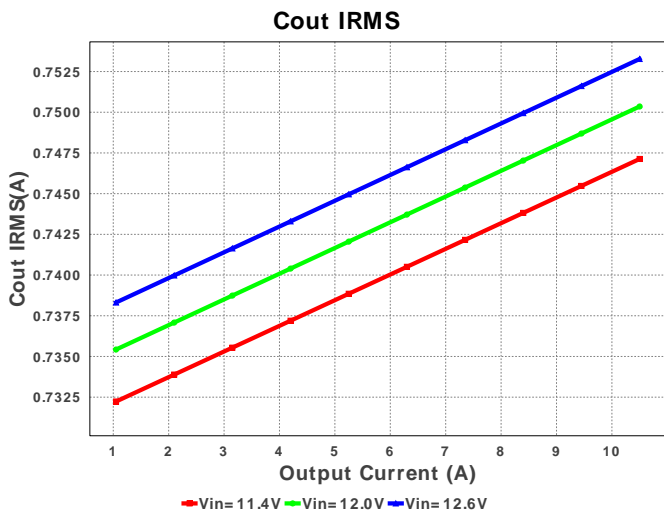
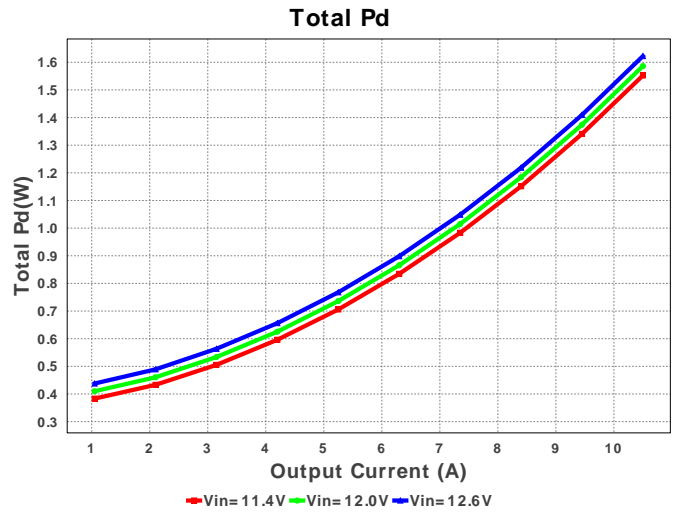
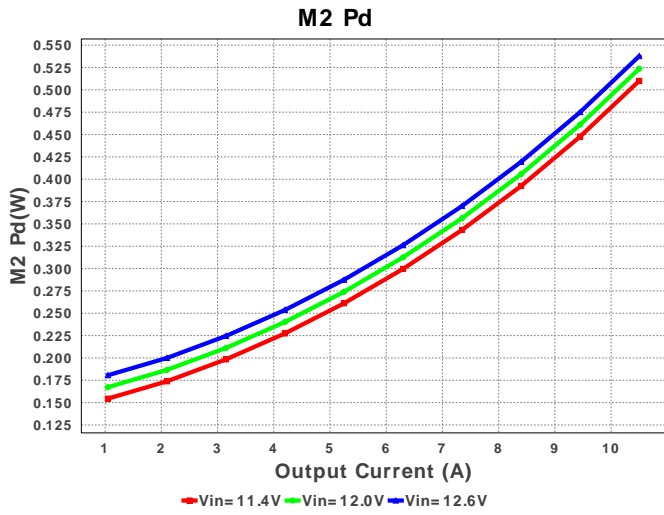
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155R61C104KA88D Series= X5R	Cap= 100.0 nF VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
2.	Cc1	Kemet	C0805C680K5GACTU Series= C0G	Cap= 68.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
3.	Cc2	MuRata	GRM216R71E122KA01D Series= X7R	Cap= 1.2 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
4.	Cc3	Samsung Electro-Mechanics	CL21C102JBCNFNC Series= C0G	Cap= 1.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
5.	Ccc	MuRata	GRM155R61A105KE15D Series= X5R	Cap= 1.0 uF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
6.	Cin	MuRata	GRM21BR61E475MA12L Series= X5R	Cap= 4.7 uF ESR= 2.0 mOhm VDC= 25.0 V IRMS= 7.29 A	1	\$0.06	0805 7 mm ²
7.	Cinx	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
8.	Cout	Panasonic	EEFGX0D331R Series= 1266	Cap= 330.0 uF ESR= 3.0 mOhm VDC= 2.0 V IRMS= 4.0 A	1	\$0.58	7343-20 59 mm ²
9.	Css	MuRata	GRM033C80J223KE01D Series= 379	Cap= 22.0 nF VDC= 6.3 V IRMS= 0.0 A	1	\$0.01	0201 2 mm ²
10.	Dboot	ON Semiconductor	MBR0530T1G	VF@I _o = 430.0 mV VRRM= 30.0 V	1	\$0.06	SOD-123 13 mm ²

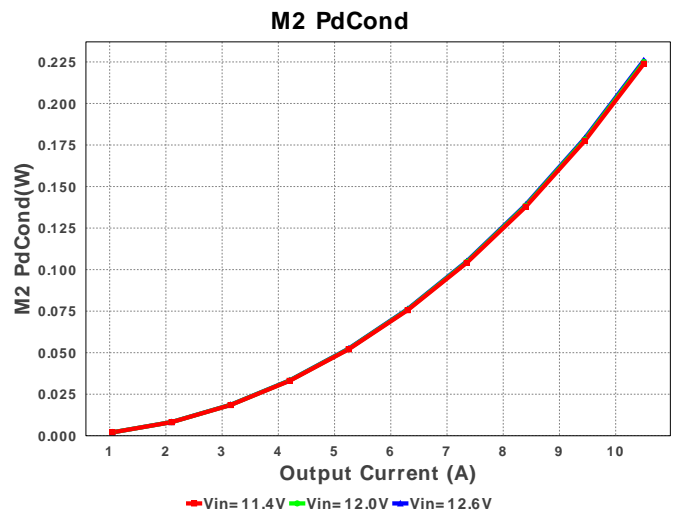
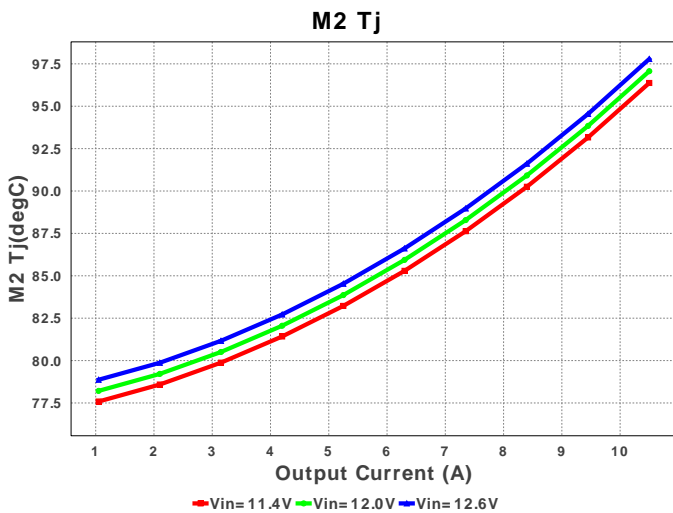
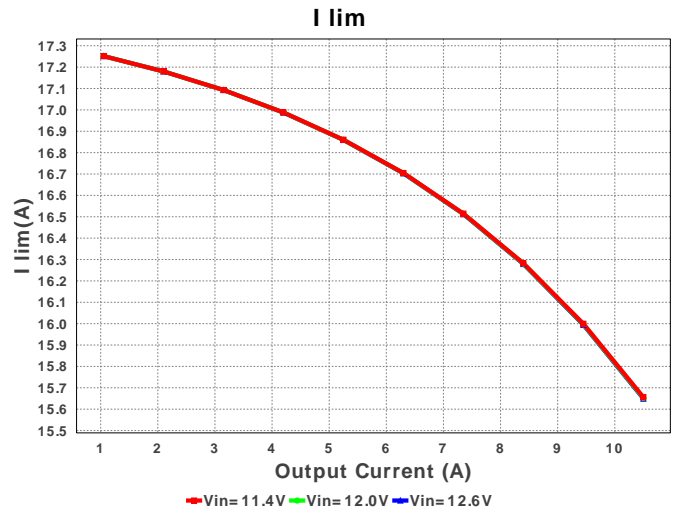
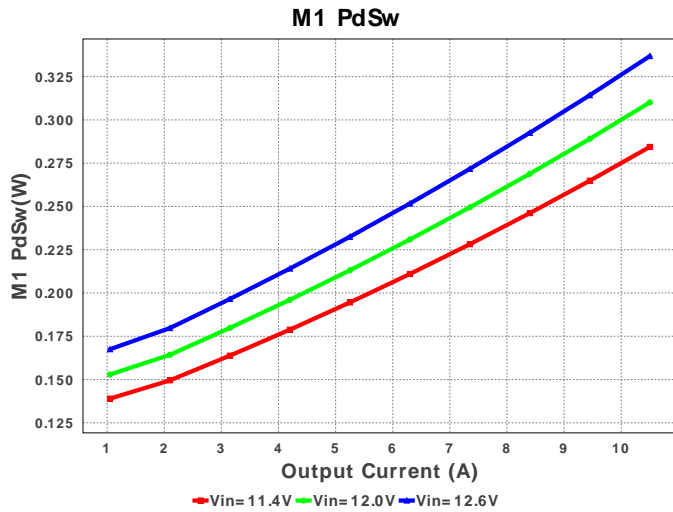
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	L1	Coilcraft	XAL5030-601MEB	L= 600.0 nH DCR= 4.1 mOhm	1	\$0.63	 XAL5030 54 mm ²
12.	M1	Texas Instruments	CSD17308Q3	VdsMax= 30.0 V IdsMax= 47.0 Amps	1	\$0.34	 TRANS_NexFET_Q3 19 mm ²
13.	M2	Texas Instruments	CSD17303Q5	VdsMax= 30.0 V IdsMax= 100.0 Amps	1	\$0.73	 TRANS_NexFET_Q5 55 mm ²
14.	Rc1	Vishay-Dale	CRCW04028K87FKED Series= CRCW..e3	Res= 8.87 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
15.	Rc2	Vishay-Dale	CRCW0402549RFKED Series= CRCW..e3	Res= 549.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
16.	Rcc	Vishay-Dale	CRCW04021R00FKED Series= CRCW..e3	Res= 1.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
17.	Rcs	Vishay-Dale	CRCW0402866RFKED Series= CRCW..e3	Res= 866.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
18.	Rfadj	Vishay-Dale	CRCW040249K9FKED Series= CRCW..e3	Res= 49.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
19.	Rfbb	Vishay-Dale	CRCW040220K0FKED Series= CRCW..e3	Res= 20.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
20.	Rfbt	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
21.	Rpullup	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
22.	U1	Texas Instruments	LM2743MTCX/NOPB	Switcher	1	\$0.80	 MTC14 59 mm ²











Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	2.755 A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	753.271 mA	Current	Output capacitor RMS ripple current
3.	I lim	15.654 A	Current	Current limit threshold
4.	Iin Avg	878.75 mA	Current	Average input current
5.	L Ipp	2.609 A	Current	Peak-to-peak inductor ripple current
6.	SW Ipk	11.805 A	Current	Peak switch current
7.	BOM Count	22	General	Total Design BOM count
8.	FootPrint	325.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	555.826 kHz	General	Switching frequency
10.	IC Tolerance	12.0 mV	General	IC Feedback Tolerance
11.	Pout	9.45 W	General	Total output power
12.	Total BOM	\$3.35	General	Total BOM Cost
13.	Cross Freq	81.919 kHz	Op_point	Bode plot crossover frequency
14.	Duty Cycle	7.438 %	Op_point	Duty cycle
15.	Efficiency	85.349 %	Op_point	Steady state efficiency
16.	IC Tj	82.638 degC	Op_point	IC junction temperature
17.	IOUT_OP	10.5 A	Op_point	Iout operating point
18.	M1 Tj	95.036 degC	Op_point	M1 MOSFET junction temperature
19.	M2 Tj	97.786 degC	Op_point	M2 MOSFET junction temperature
20.	Phase Marg	71.03 deg	Op_point	Bode Plot Phase Margin
21.	VIN_OP	12.6 V	Op_point	Vin operating point
22.	Vout p-p	8.028 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	15.181 mW	Power	Input capacitor power dissipation
24.	Cout Pd	1.702 mW	Power	Output capacitor power dissipation
25.	IC Pd	81.536 mW	Power	IC power dissipation
26.	L Pd	565.031 mW	Power	Inductor power dissipation
27.	M1 Pd	421.078 mW	Power	M1 MOSFET total power dissipation
28.	M1 PdCond	84.221 mW	Power	M1 MOSFET conduction losses
29.	M1 PdSw	336.858 mW	Power	M1 MOSFET switching losses
30.	M2 Pd	537.688 mW	Power	M2 MOSFET total power dissipation
31.	M2 PdCond	225.82 mW	Power	M2 MOSFET conduction losses

#	Name	Value	Category	Description
32.	M2 PdSw	311.868 mW	Power	M2 MOSFET switching losses
33.	Total Pd	1.622 W	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	10.5	Maximum Output Current
2.	Iout1	10.5	Output Current #1
3.	SoftStart	1.0 ms	Soft Start Time (ms)
4.	VinMax	12.6	Maximum input voltage
5.	VinMin	11.4	Minimum input voltage
6.	Vout	900.0 m	Output Voltage
7.	Vout1	900.0 m	Output Voltage #1
8.	base_pn	LM2743	Base Product Number
9.	source	DC	Input Source Type
10.	Ta	70.0	Ambient temperature
11.	UserFsw	555.826 k	Customer Selected Frequency

Design Assistance

1. **LM2743** Product Folder : <http://www.ti.com/product/lm2743> : contains the data sheet and other resources.

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