

DC-DC LLC Buck Converter $V_o=12V$ $I_o=50A$

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Input : $V_{in}=800V_{dc}$

**Output : $V_o=12V_{dc}$
 $I_o=50A_{dc}$**

**Gate Drive : $V_d=18V$
 $R_{source}=5\Omega$
 $R_{sink}=2\Omega$**

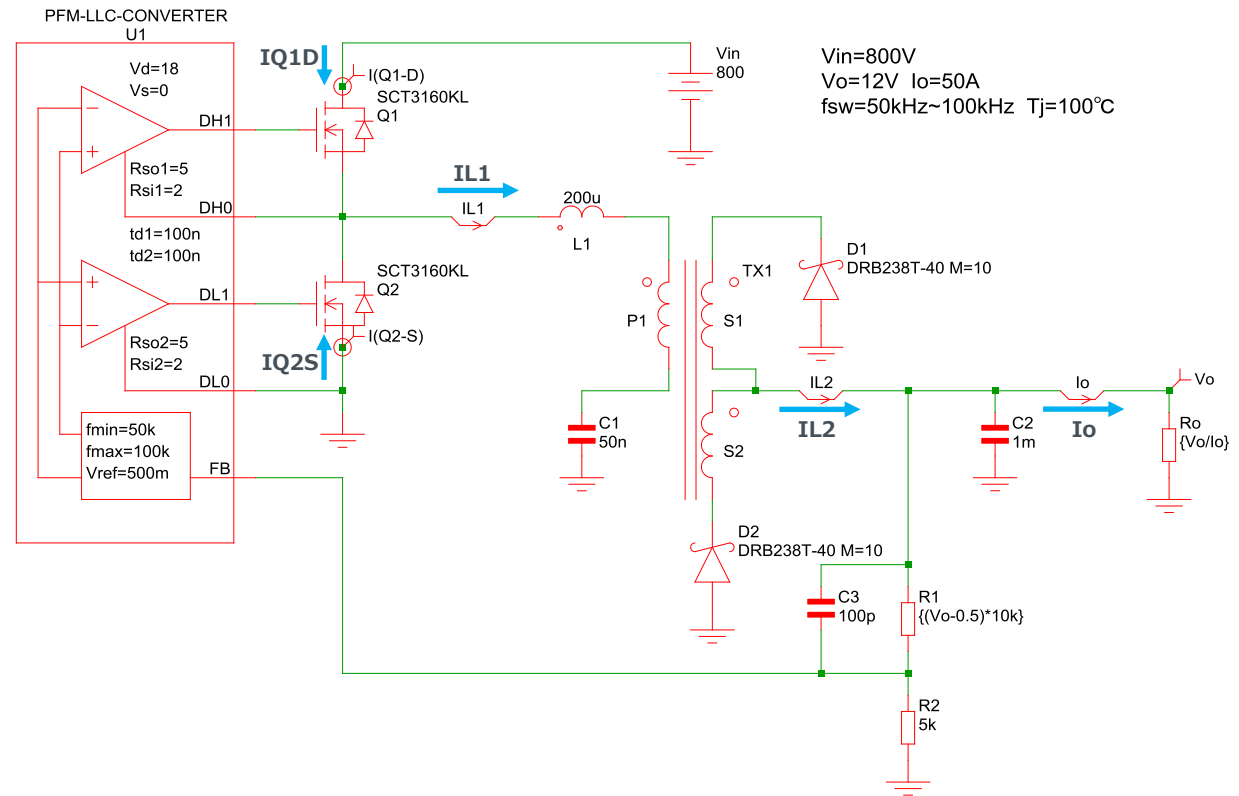
**Q1,Q2 : SCT3160KL
SiC MOSFET(1200V 17A)**

**D1,D2 : RB238T-40
SBD (40V 40A)**

L1 : 200uH

C1 : 50nF C2 : 1mF C3 : 100pF

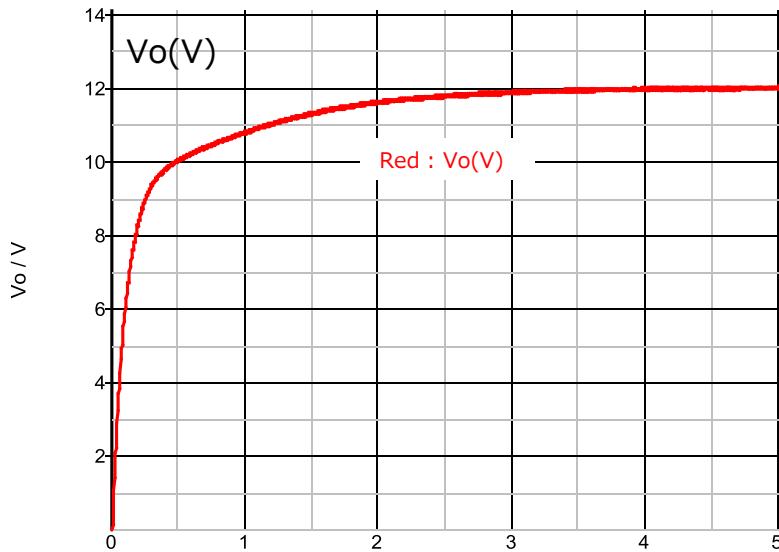
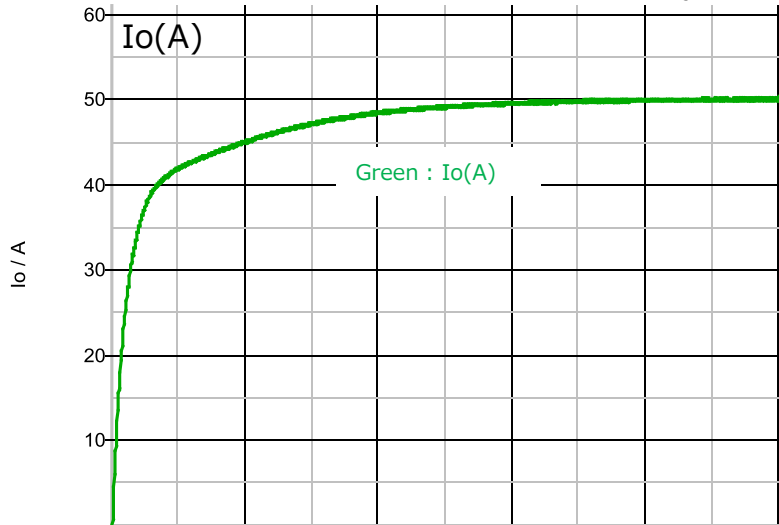
$T_j=100^\circ C$



Simulation Waveform

Io, Vo (0.00m~5.00ms)

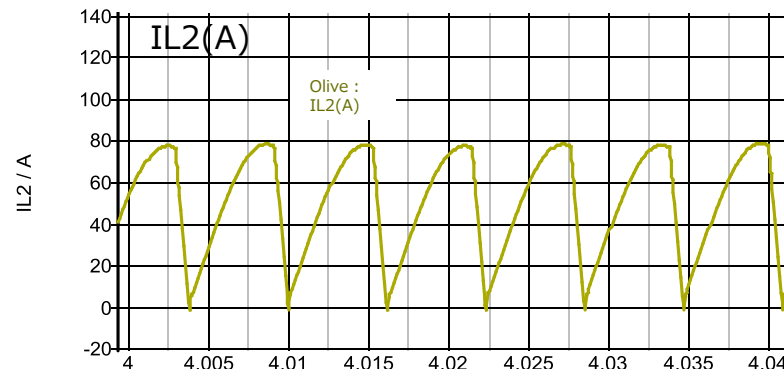
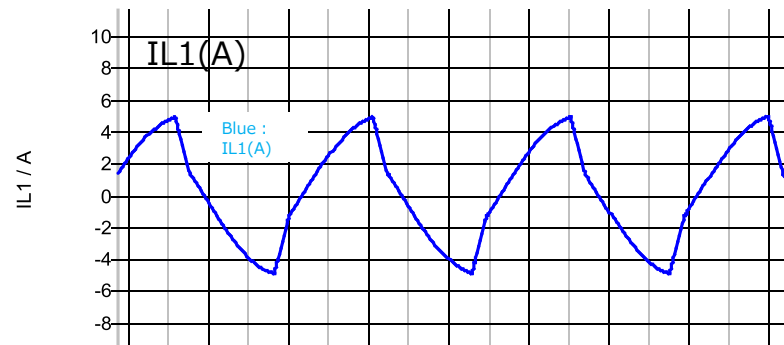
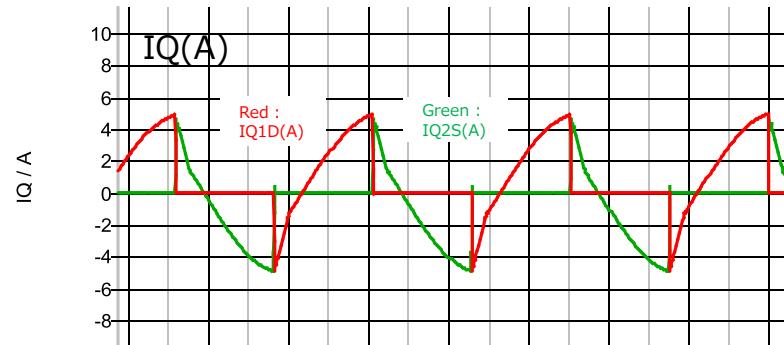
Vin=800V Vo=12V
Io=50A Tj=100°C



1mSecs/div

IQ, IL1, IL2 (4.00m~4.04ms)

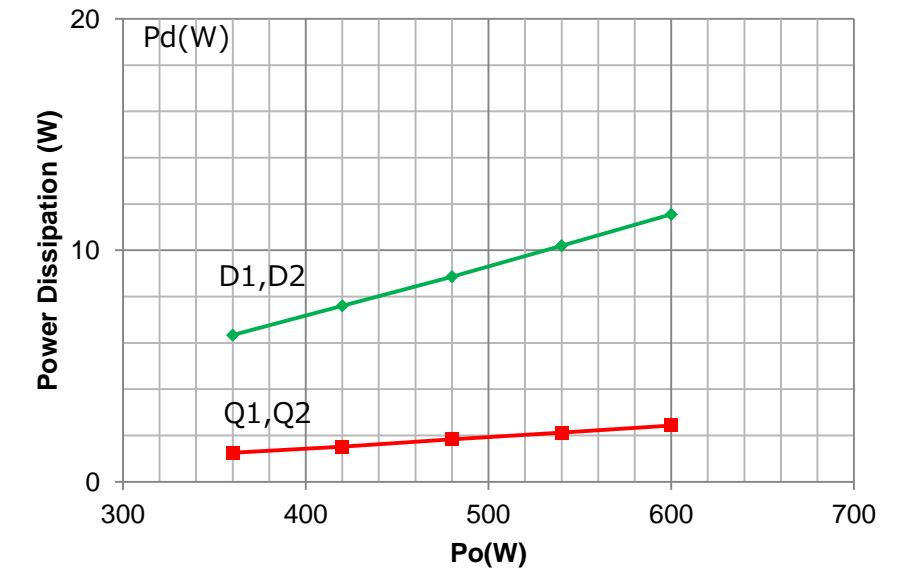
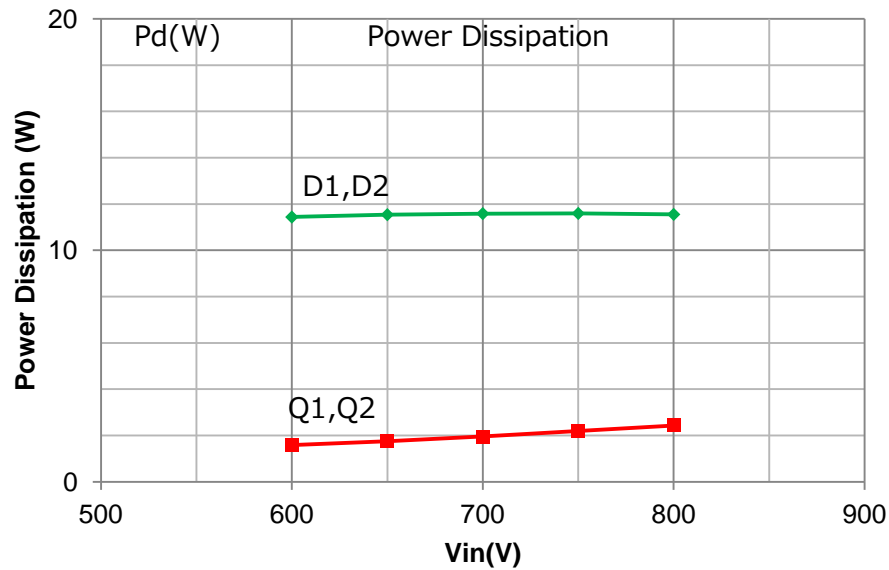
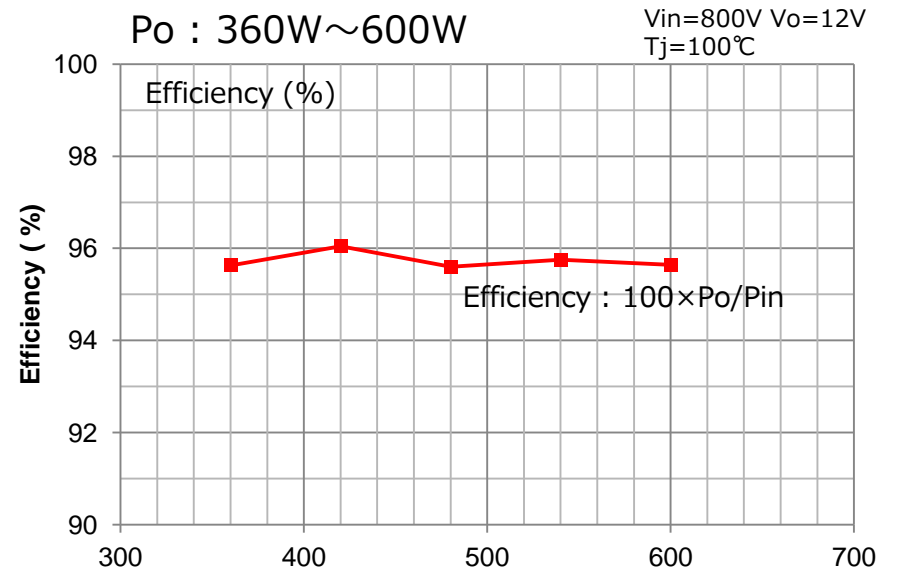
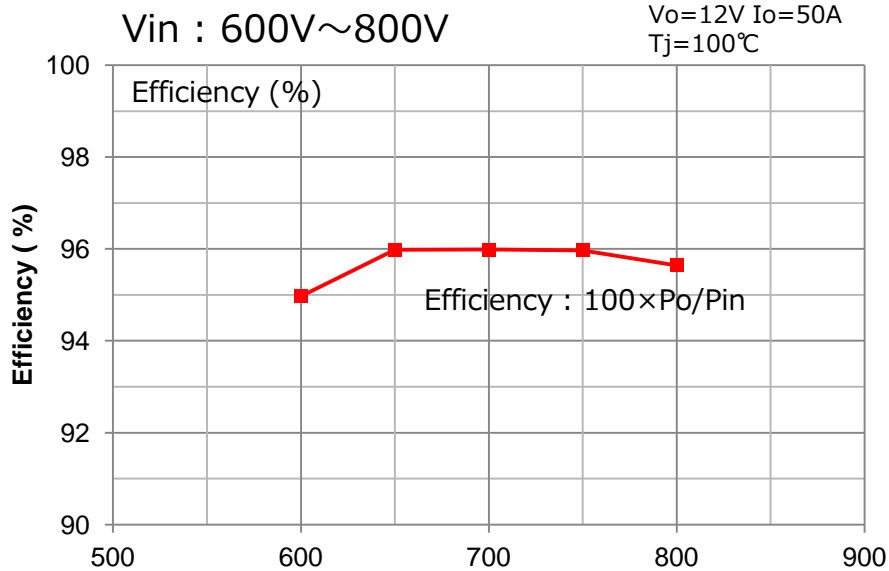
Vin=800V Vo=12V
Io=50A Tj=100°C



Time/mSecs

5uSecs/div

Efficiency, Power Dissipation 1



Efficiency, Power Dissipation 2

