

DC-DC Buck Converter $V_o=250V$ $I_o=20A$

DC-DC Buck Converter $V_o=250V$ $I_o=20A$ Simulation Circuit

Input : $V_{in}=800V$

Output : $V_o=250V$
 $I_o=20A$

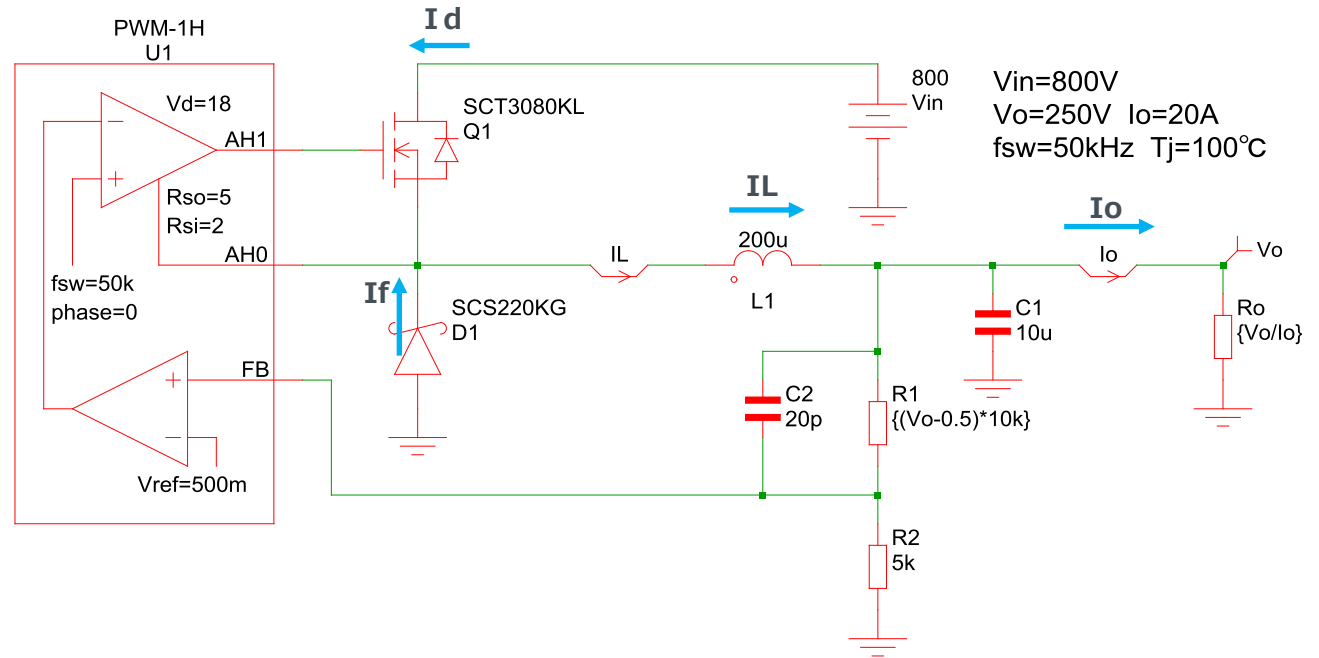
Gate Drive : $V_d=18V$
 $R_{source}=5\Omega$
 $R_{sink}=2\Omega$

Q1 : SCT3080KL
SiC MOSFET(1200V 31A)
D1 : SCS220KG
SiC SBD(1200V 20A)

L1 : 200uH

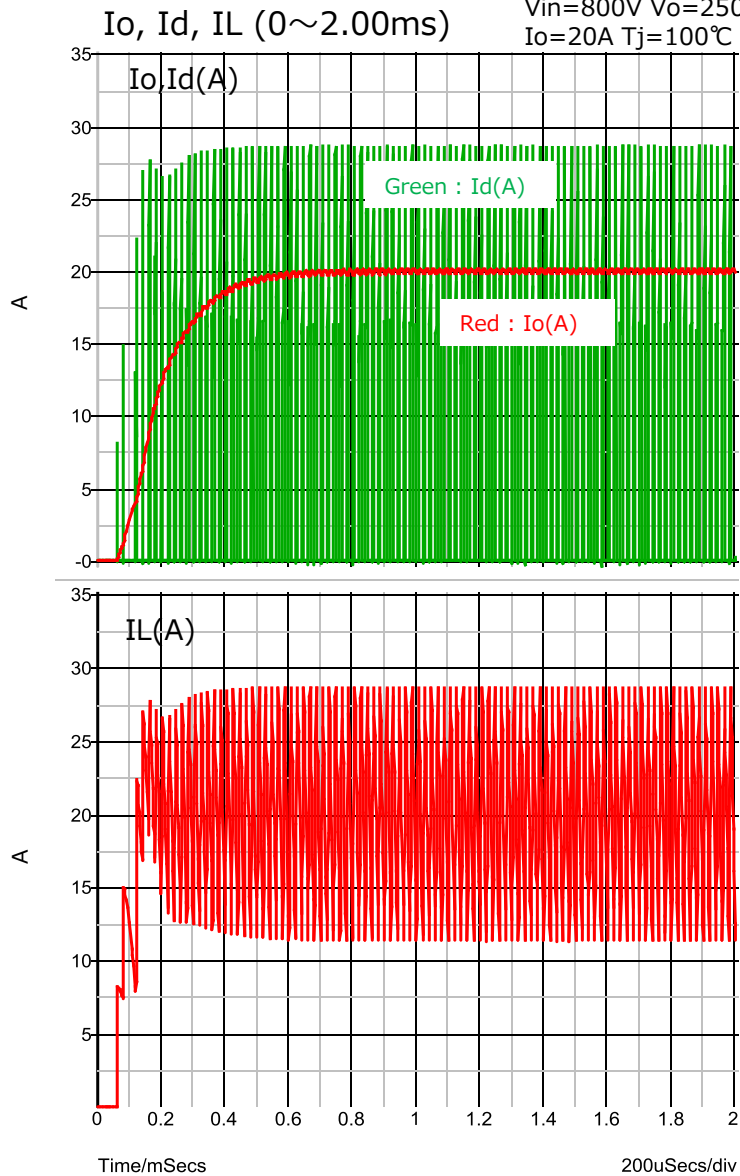
C1 : 10uF C2 : 20pF

$T_j=100^\circ C$

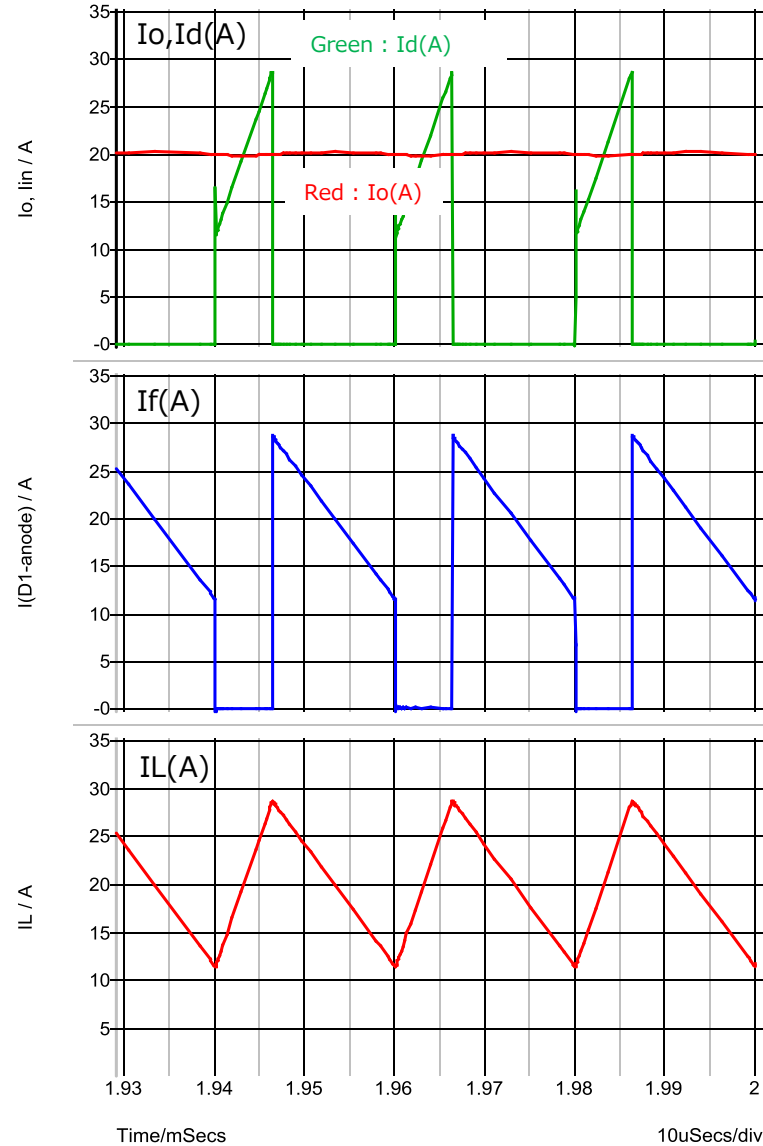


Simulation Waveform 1

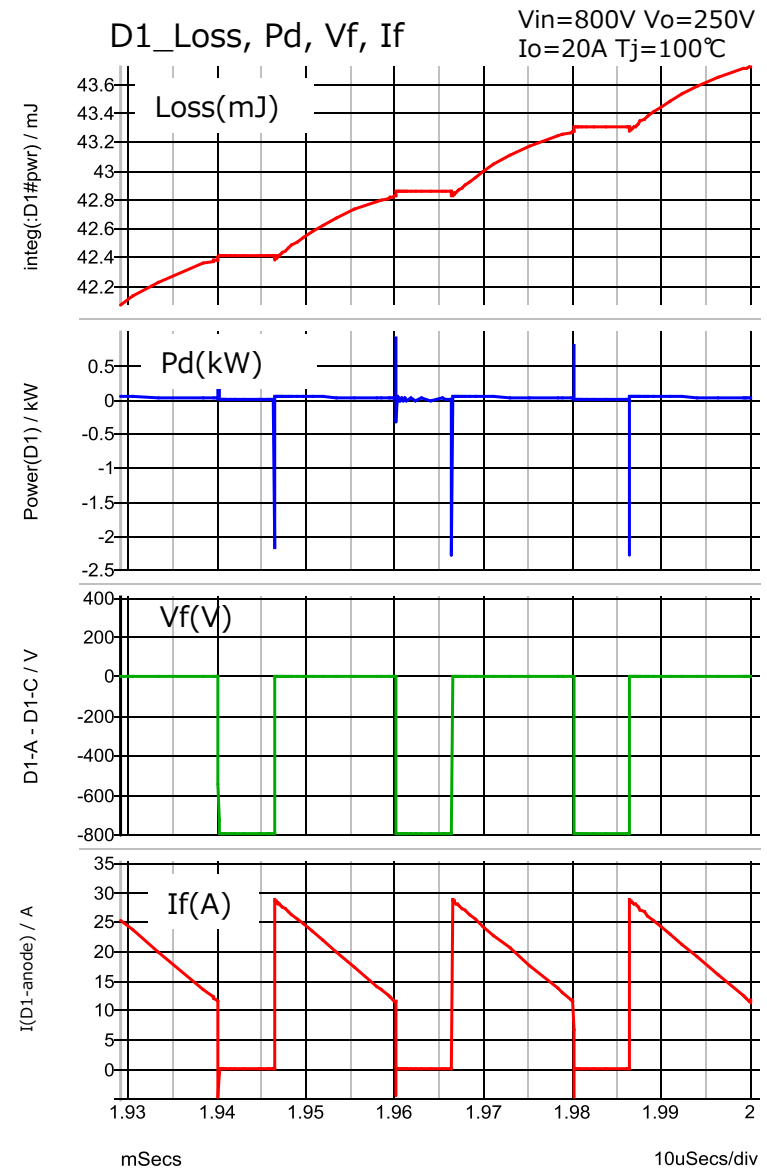
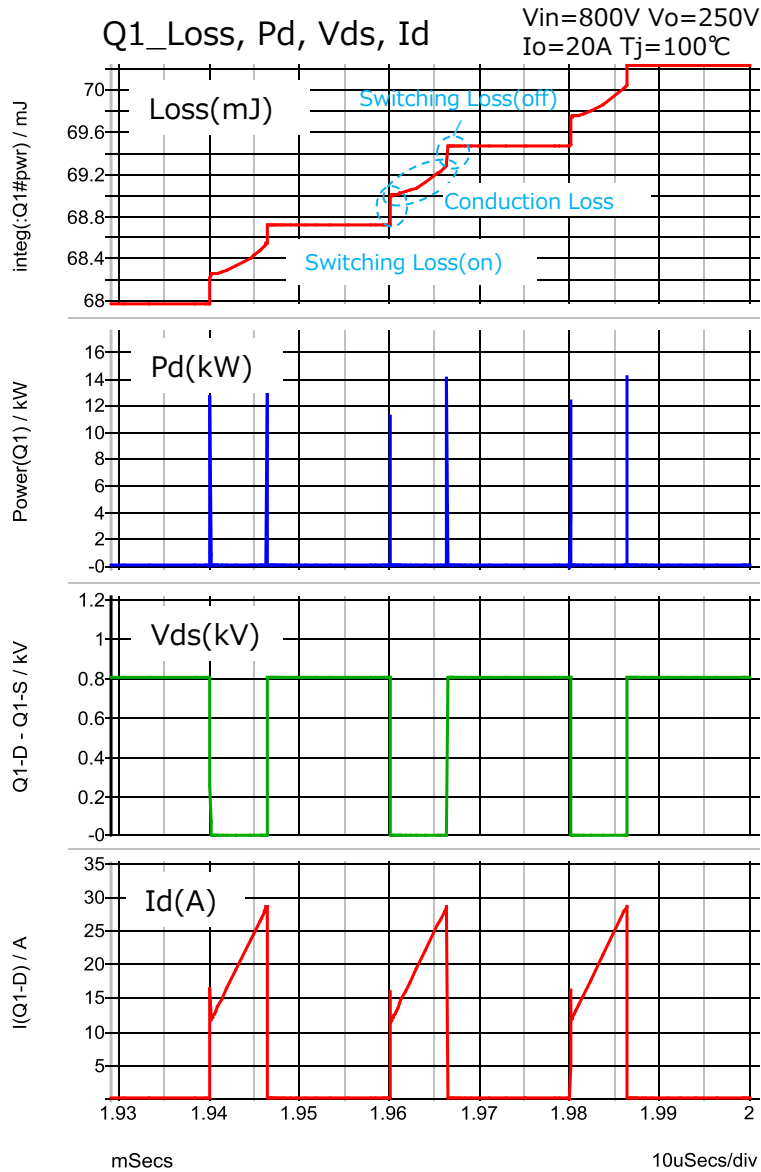
$V_{in}=800V$ $V_o=250V$
 $I_o=20A$ $T_j=100^{\circ}C$



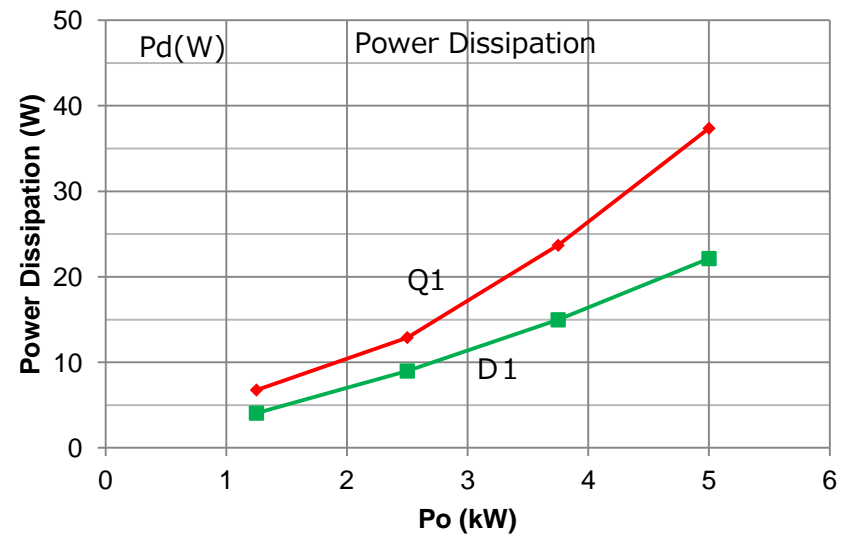
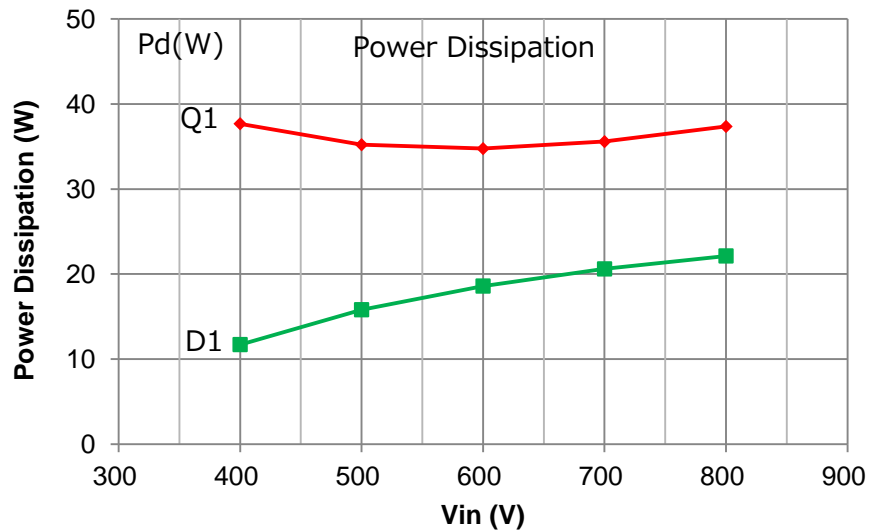
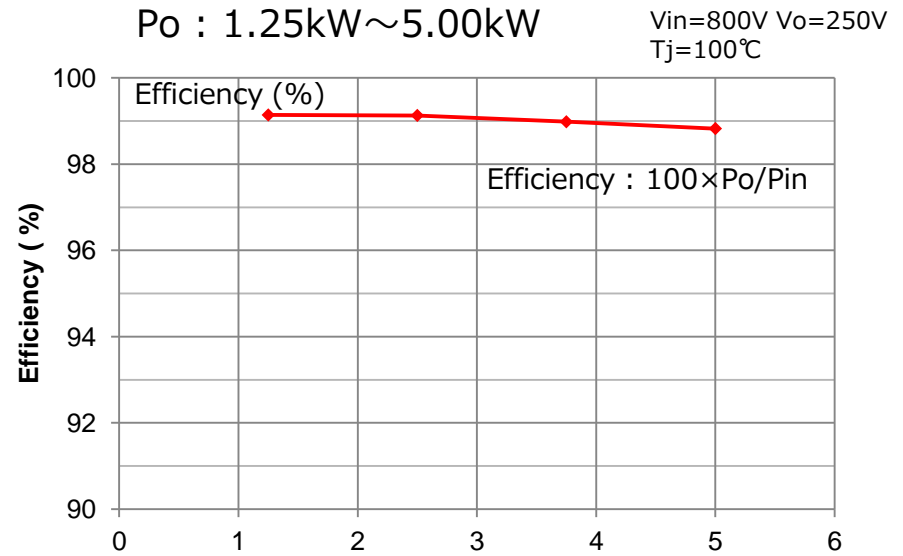
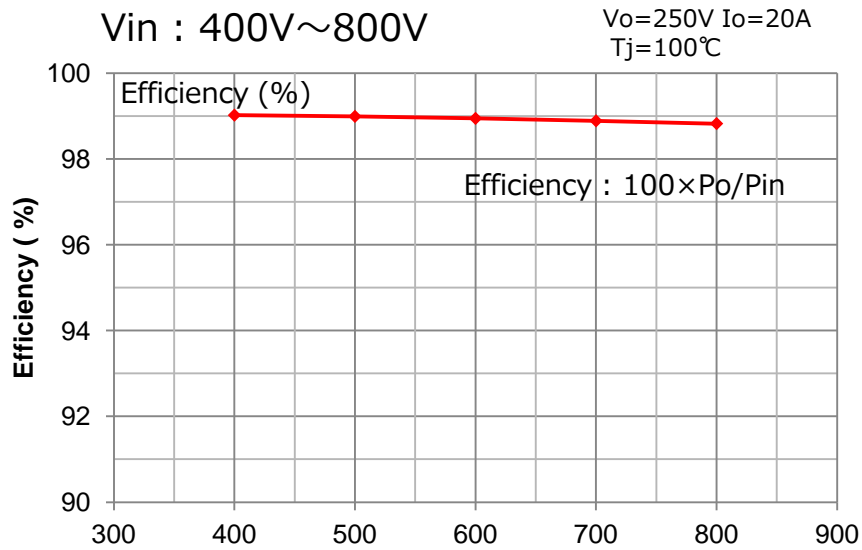
Io, Id, If, IL (1.96ms~2.00ms)



Simulation Waveform 2



Efficiency, Power Dissipation 1



Efficiency, Power Dissipation 2

