

PFC CCM Synchro 2-Phase $V_{in}=200V$ $I_{in}=5A$

Input :
 $V_{in}=200V_{ac}$ $I_{in}=5A_{ac}$
 $f_{ps}=50Hz$

Output : $V_o=500V_{dc}$

Gate Drive : $V_d=10V$
 $R_{source}=5\Omega$
 $R_{sink}=2\Omega$

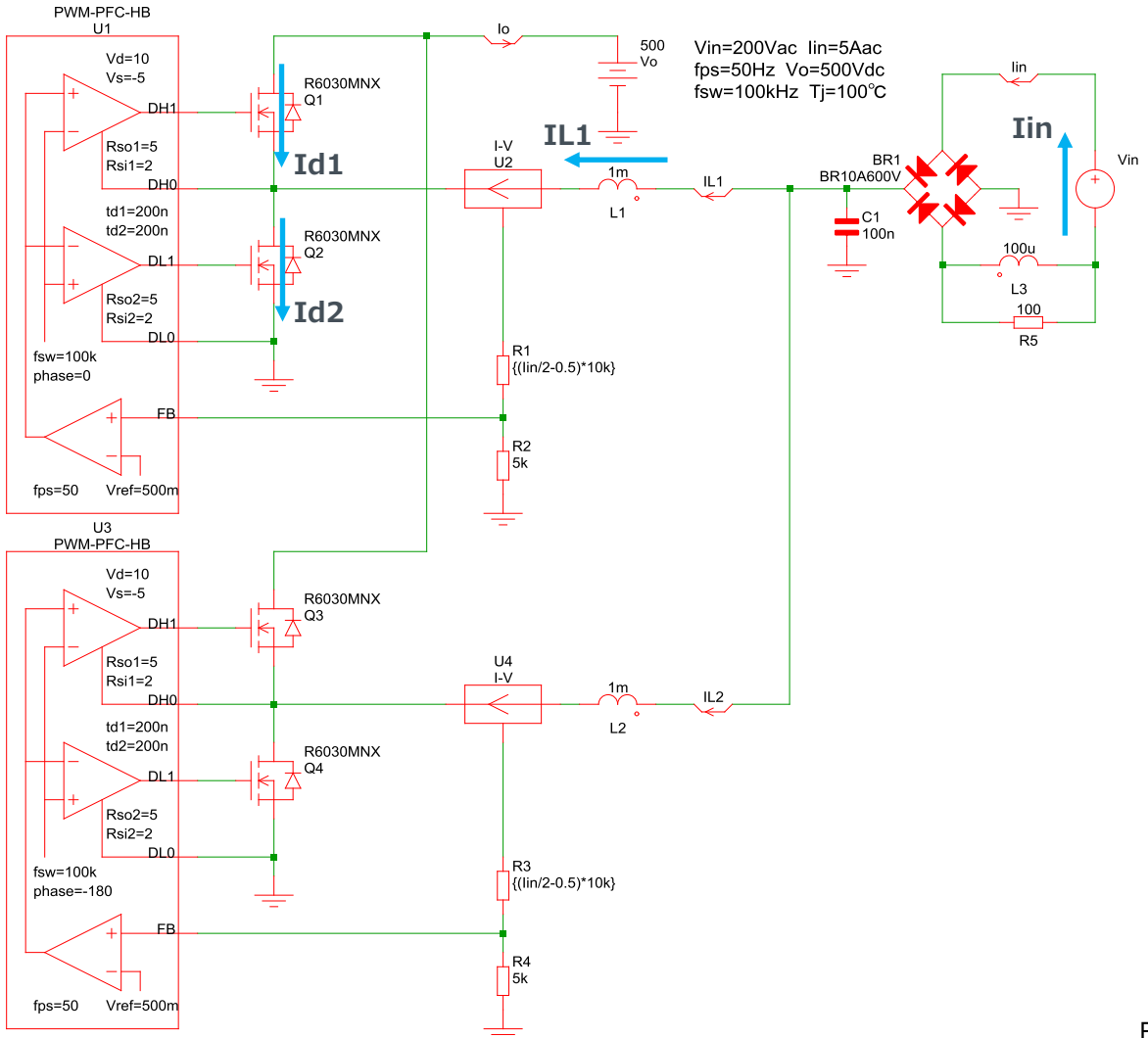
$Q1, Q2, Q3, Q4 : R6030MNX$
MOSFET (600V 30A)

$L1, L2 : 1mH$ $L3 : 100\mu H$

$C1 : 100nF$

$T_j : 100^\circ C$

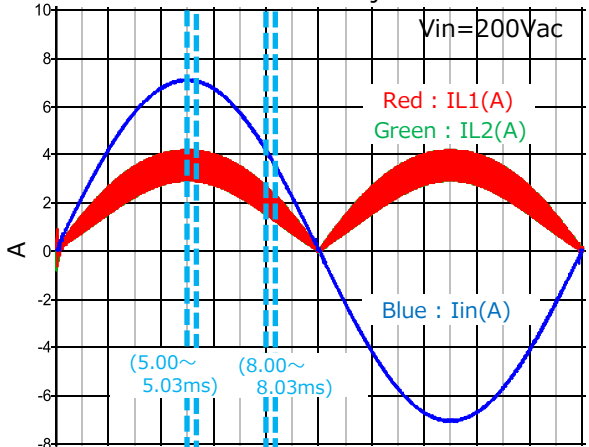
PFC Continuous Current Mode Synchro 2-Phase $V_{in}=200V$ $I_{in}=5A$ Simulation Circuit



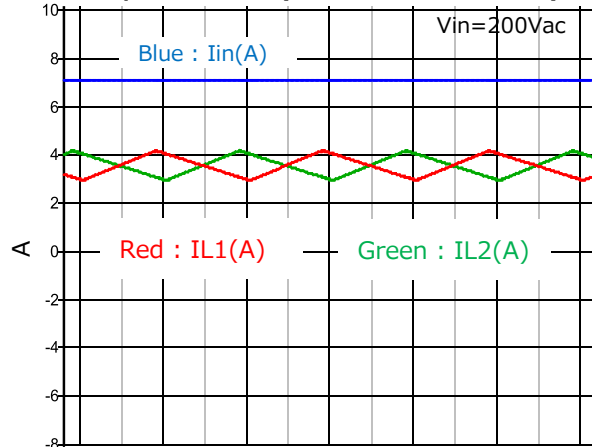
Simulation Waveform 1

IL1, IL2, Iin

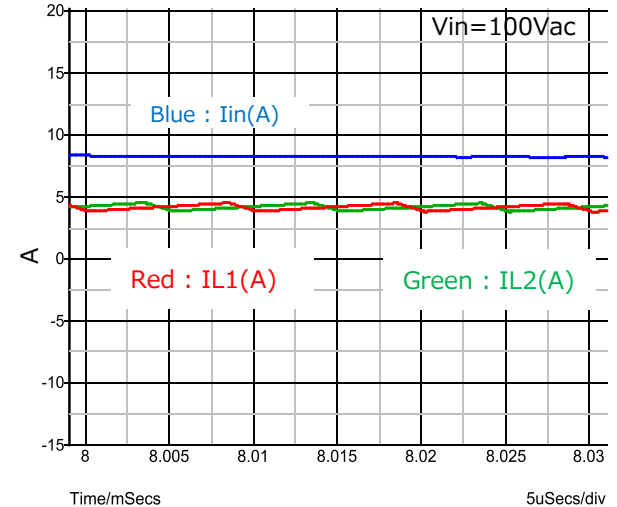
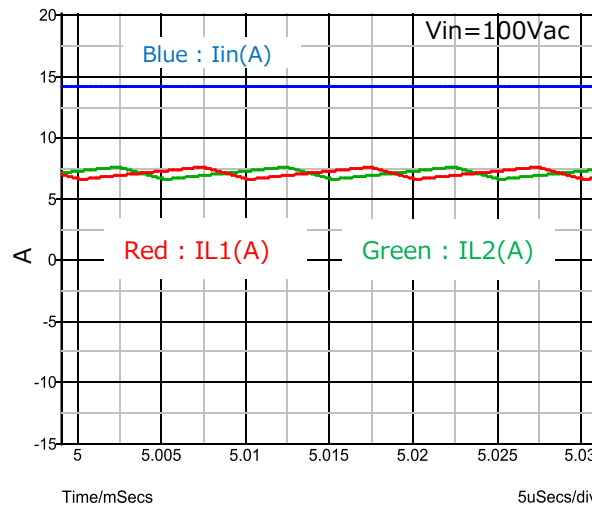
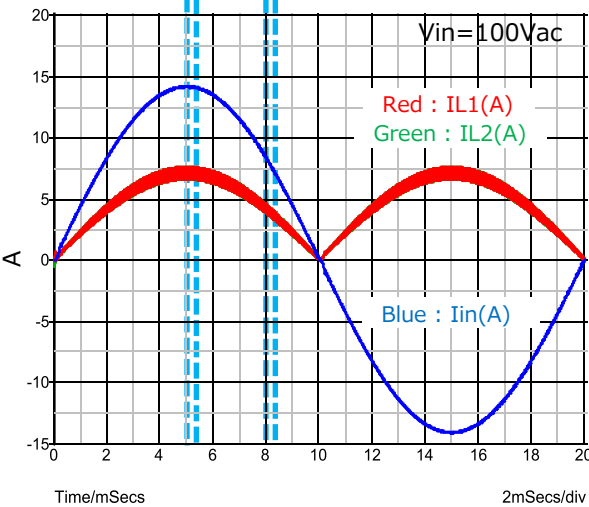
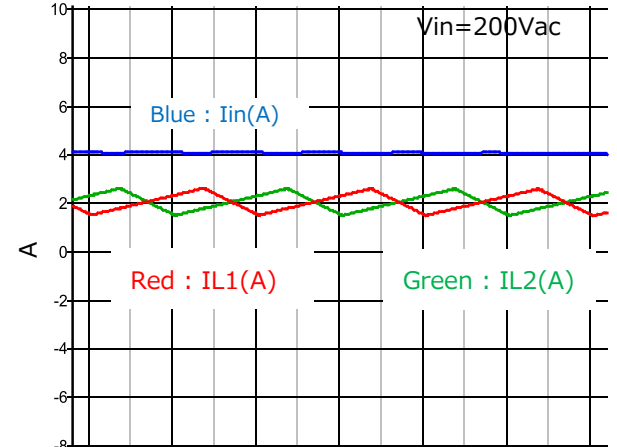
Pin=1kW Vo=500Vdc
Tj=100°C



Expansion (5.00~5.03ms)



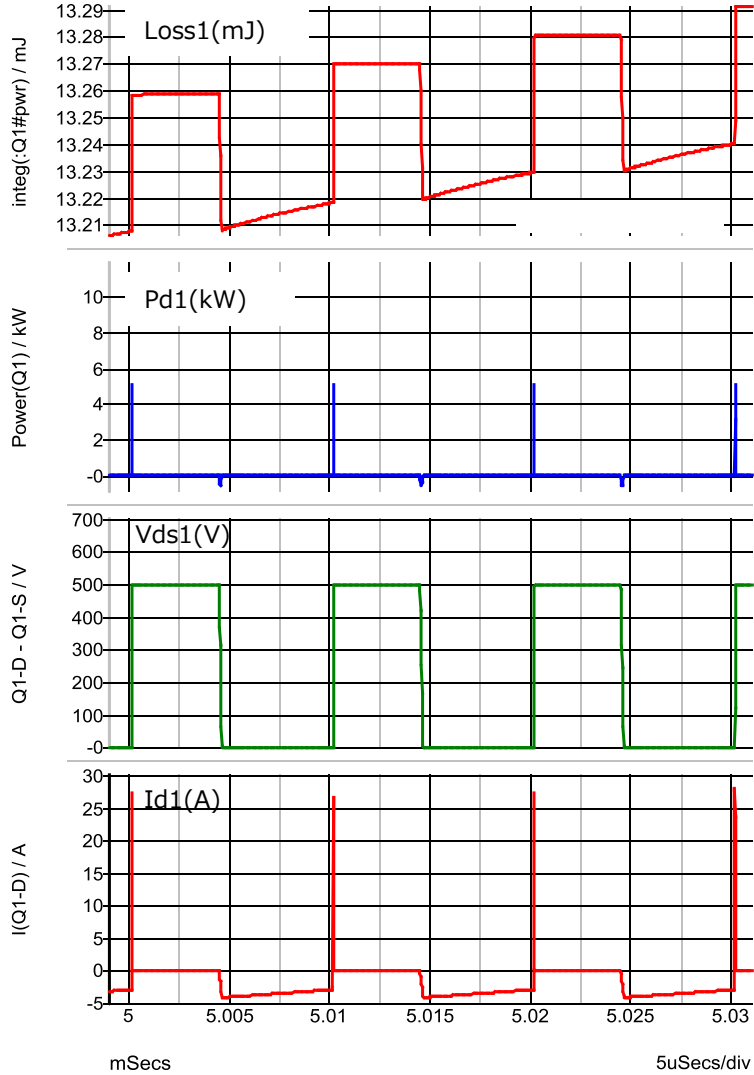
Expansion (8.00~8.03ms)



Simulation Waveform 2

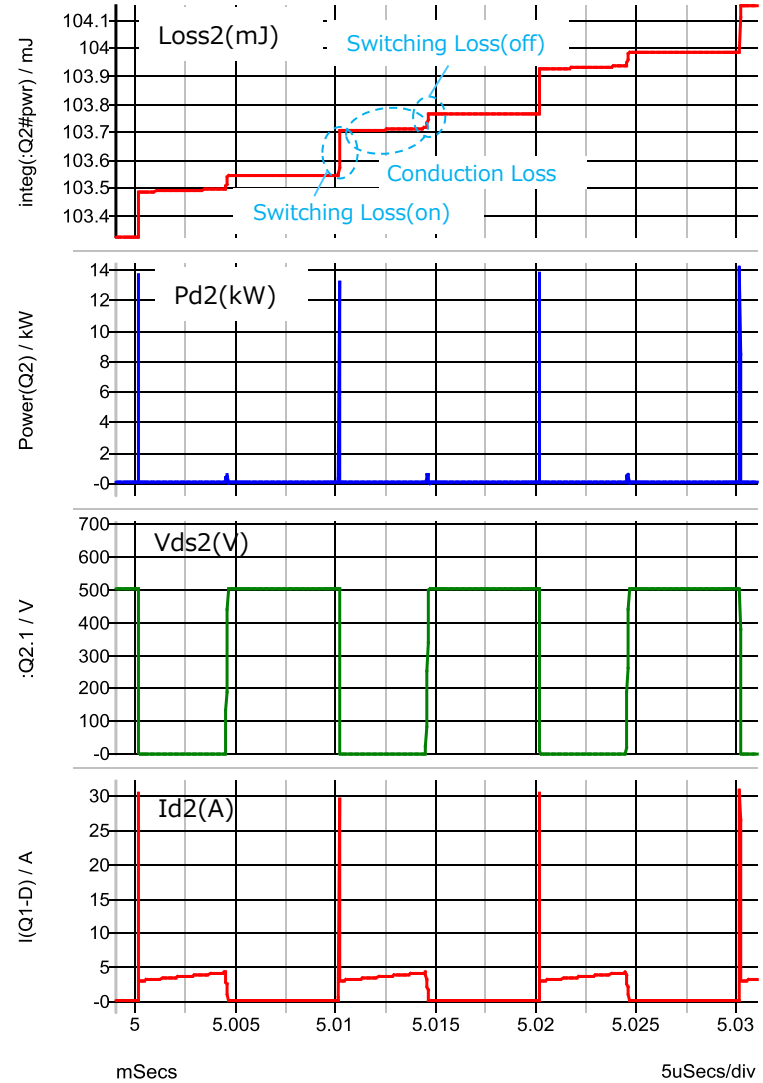
Q1_Loss1, Pd1, Vds1, Id1

Vin=200Vac Iin=5Aac
Vo=500Vdc Tj=100°C

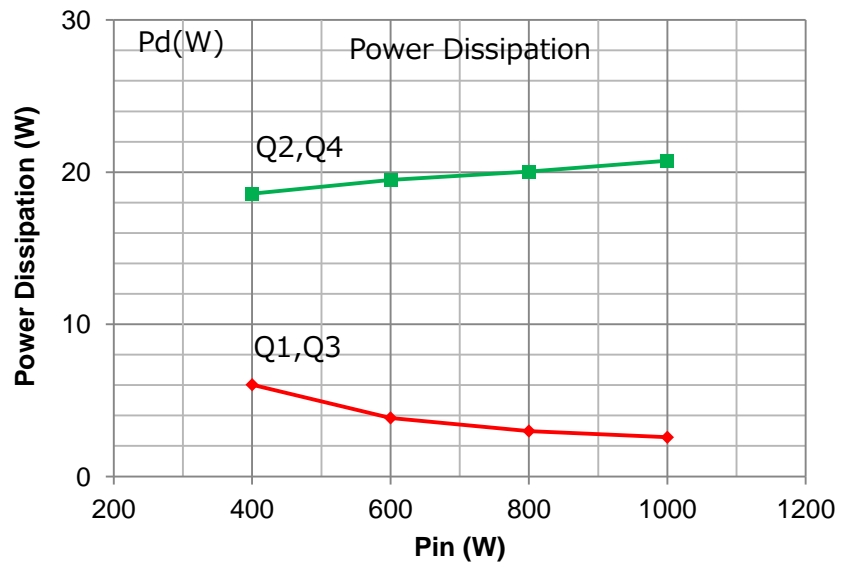
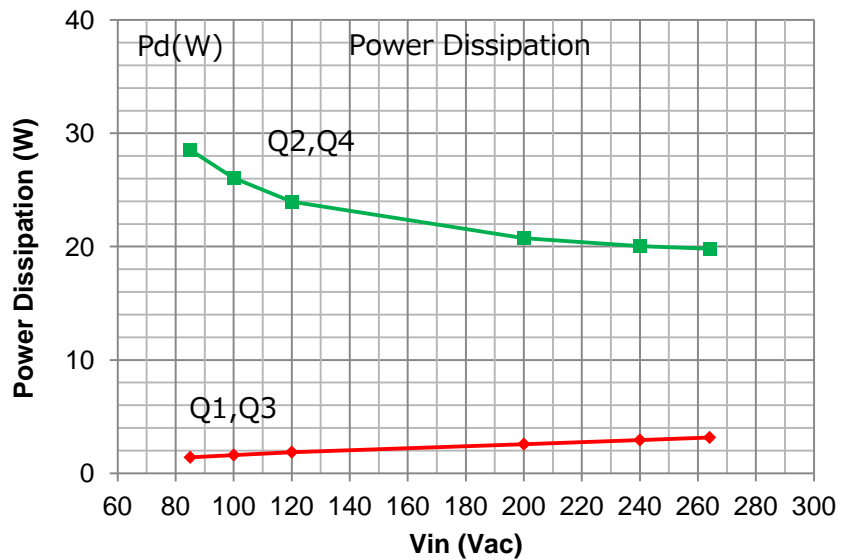
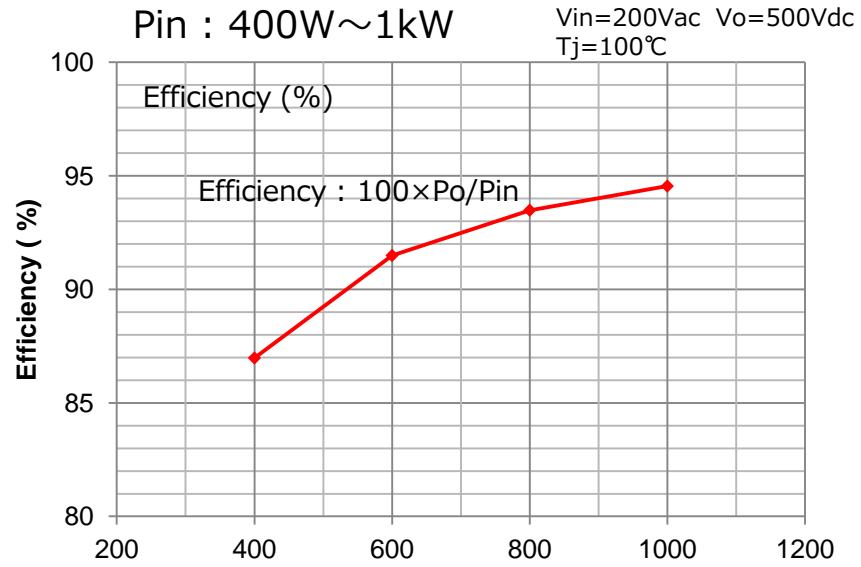
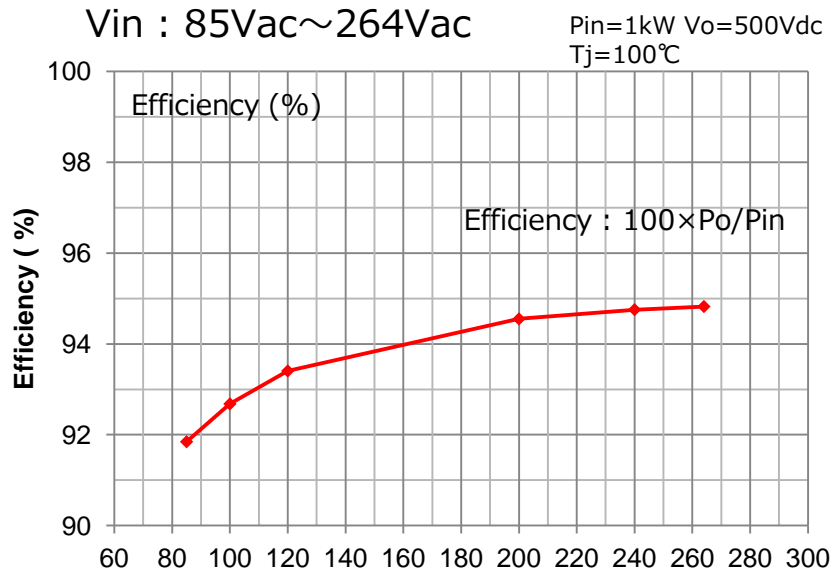


Q2_Loss2, Pd2, Vds2, Id2

Vin=200Vac Iin=5Aac
Vo=500Vdc Tj=100°C



Efficiency, Power Dissipation 1



Efficiency, Power Dissipation 2

