

PFC CCM 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 : $V_d=18V$
 $R_{source}=5\Omega$
 $R_{sink}=2\Omega$

$Q1, Q2$: SCT2450KE
 SiC MOSFET (1200V 10A)

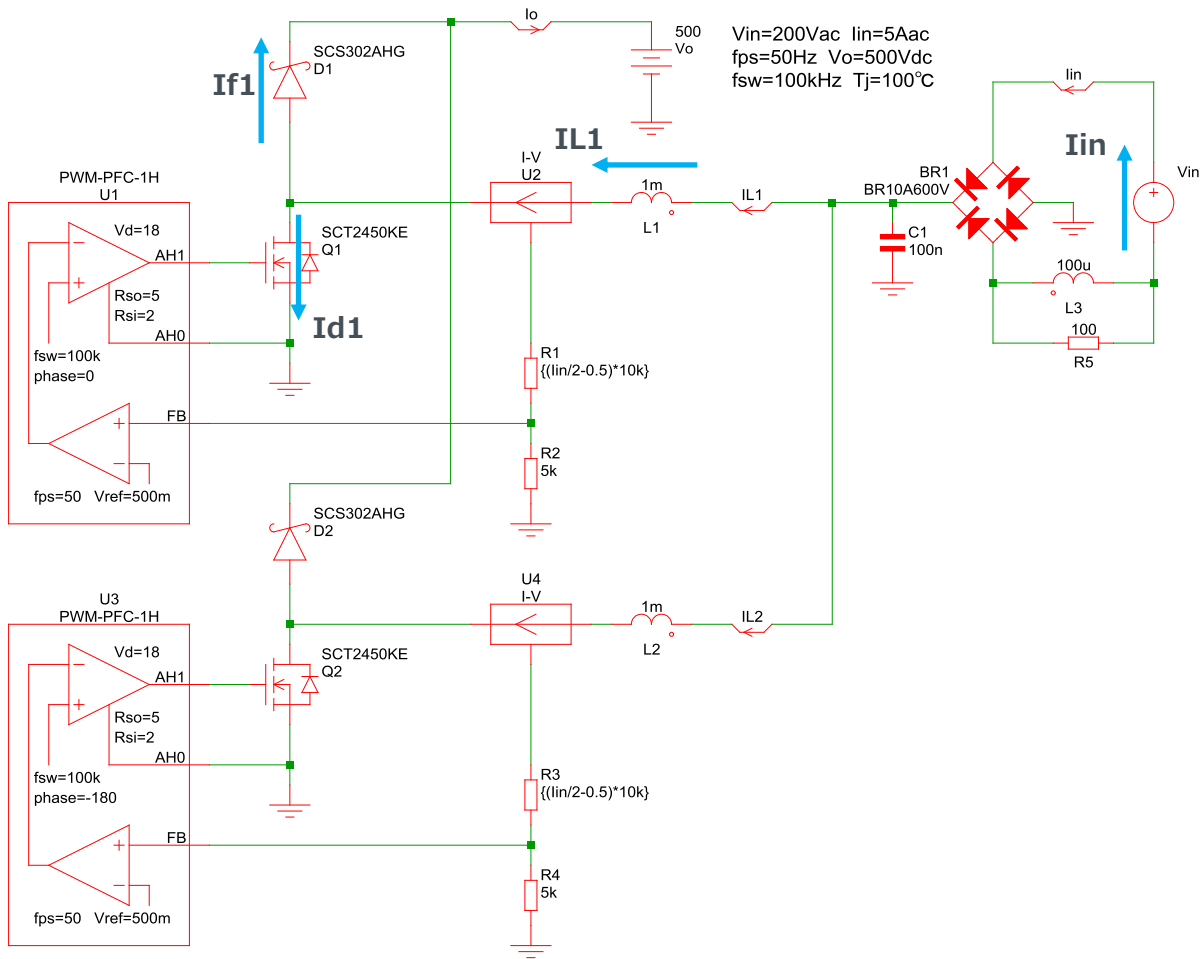
$D1, D2$: SCS302AHG
 SiC SBD (650V 2A)

$L1, L2$: 1mH $L3$: 100uH

$C1$: 100nF

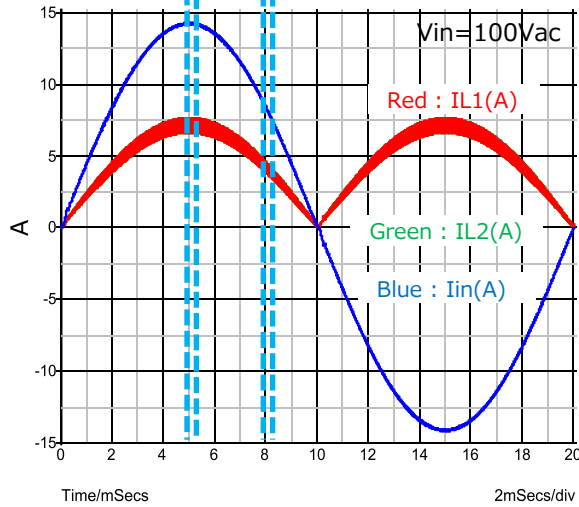
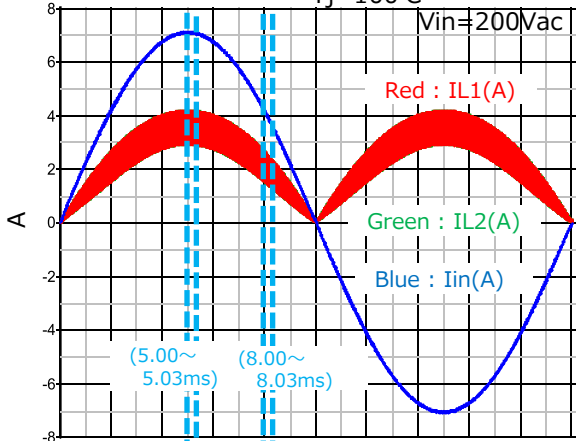
T_j : 100°C

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

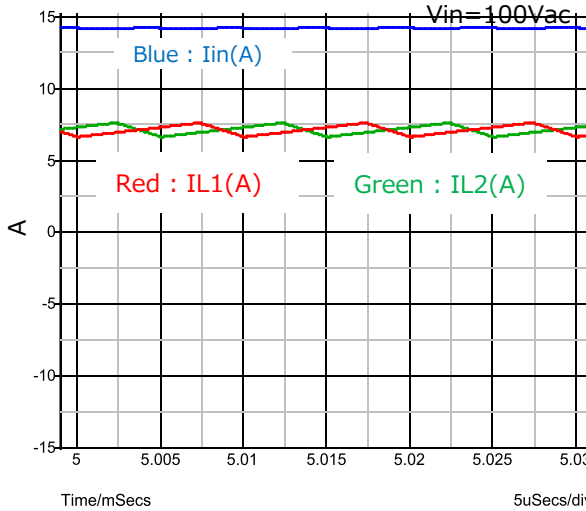
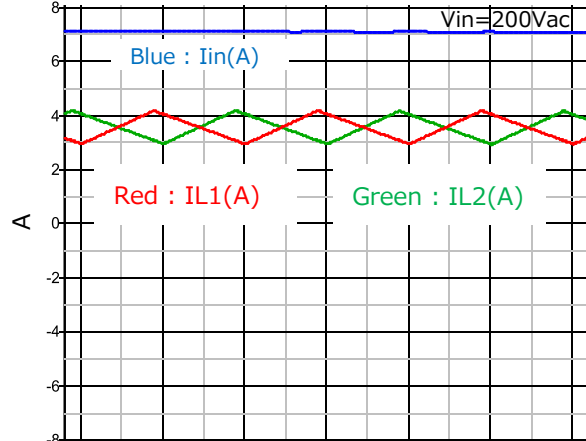


Simulation Waveform 1

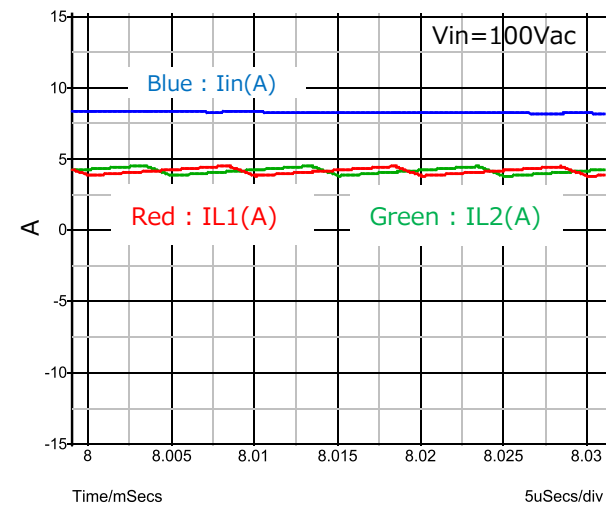
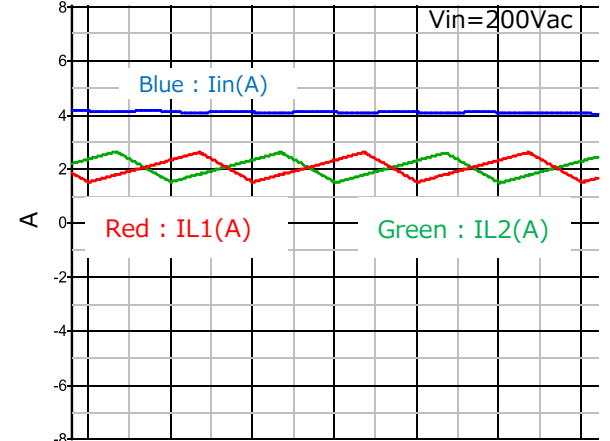
IL1, IL2, Iin Pin=1kW Vo=500Vdc
Tj=100°C



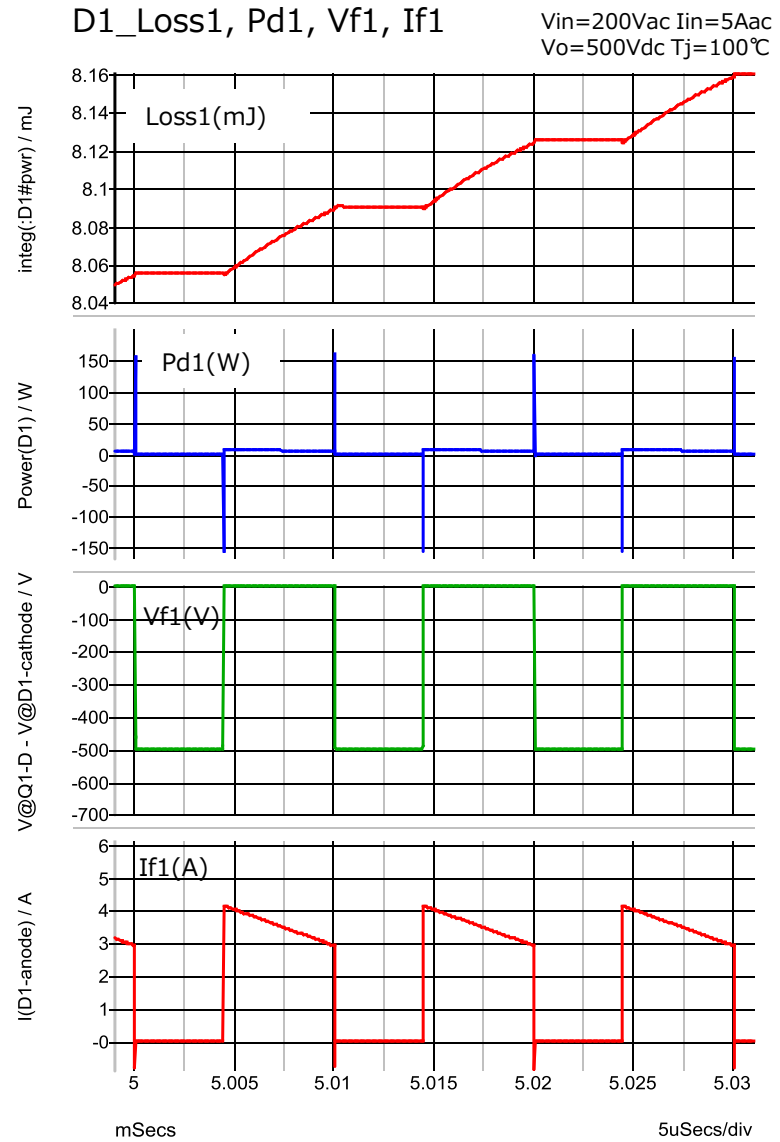
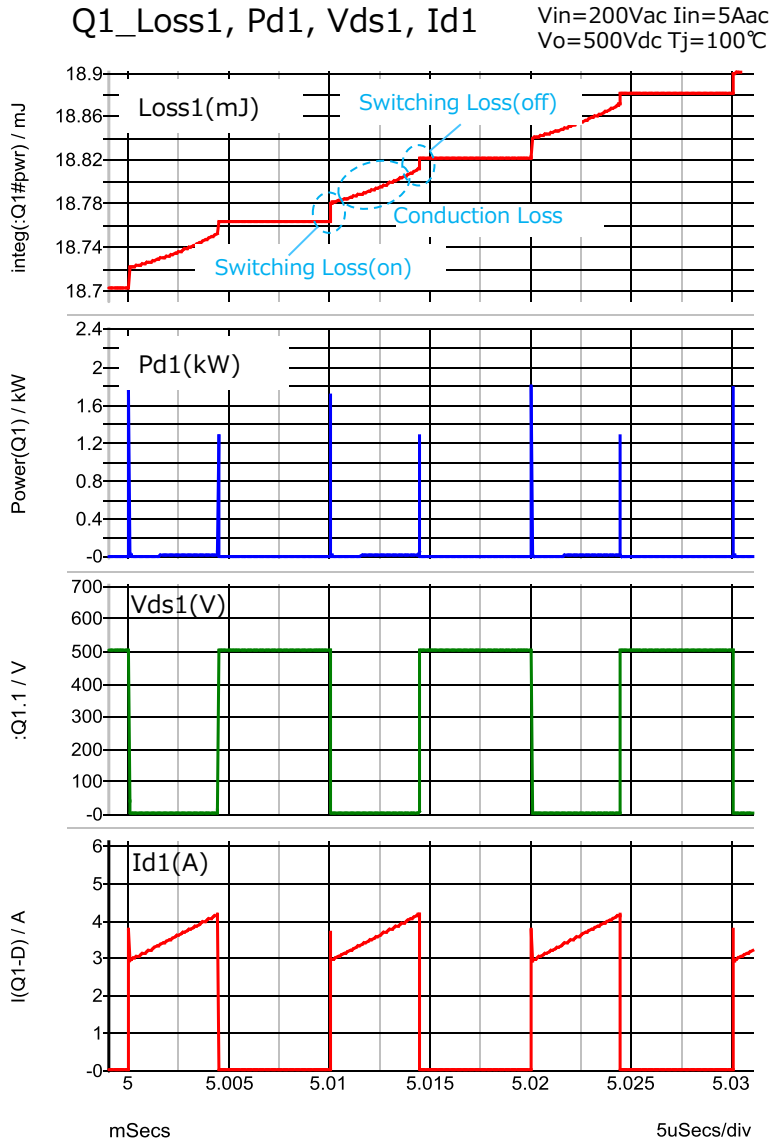
Expansion (5.00~5.03ms)



Expansion (8.00~8.03ms)



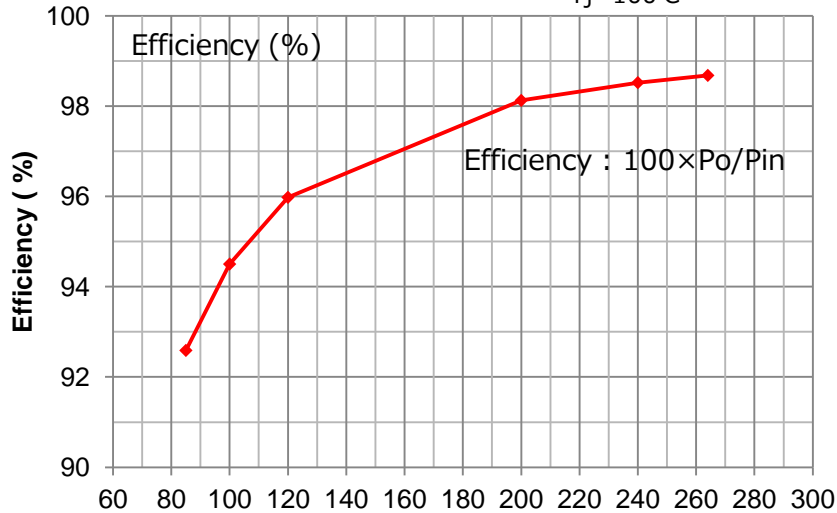
Simulation Waveform 2



Efficiency, Power Dissipation 1

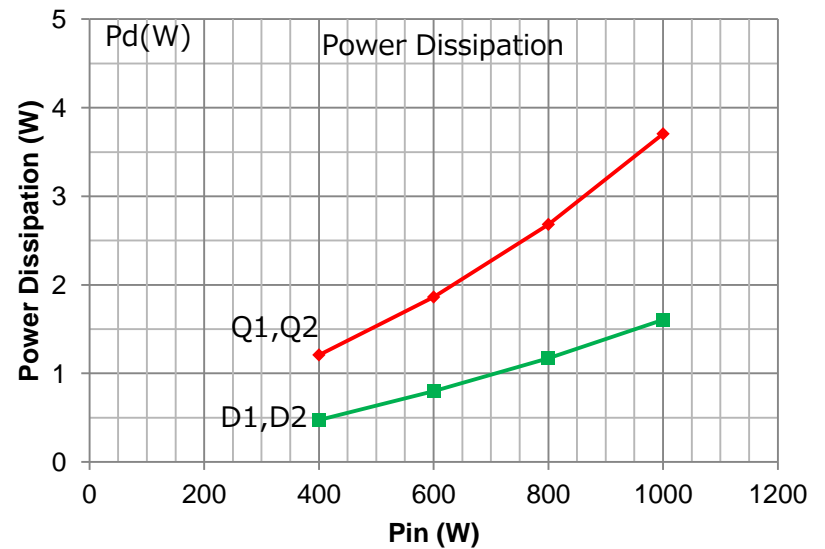
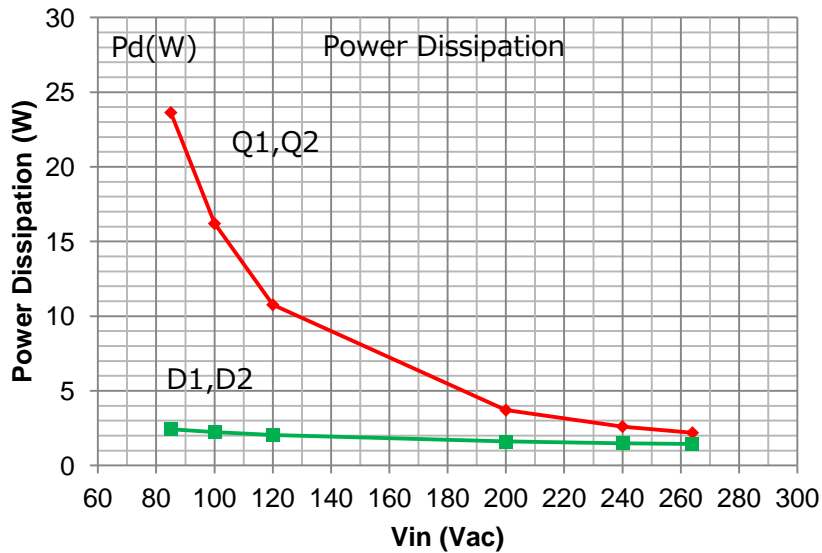
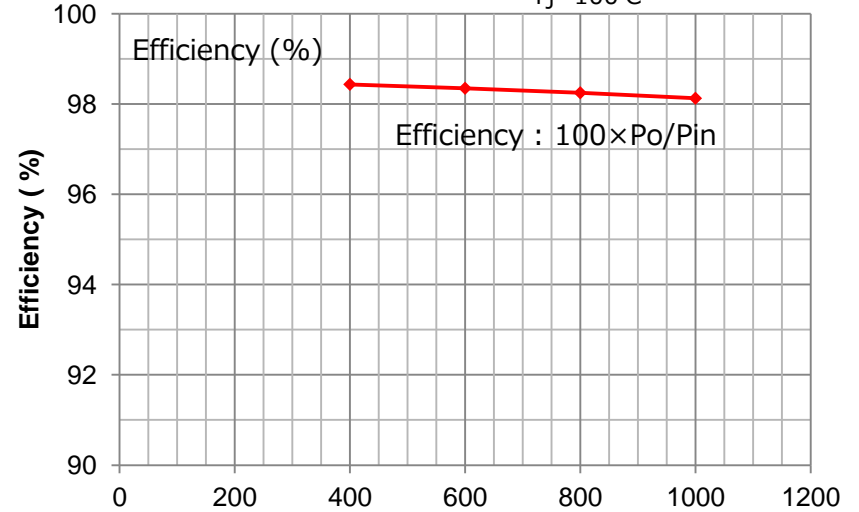
Vin : 85Vac~264Vac

Pin=1kW Vo=500Vdc
Tj=100°C



Pin : 400W~1kW

Vin=200Vac Vo=500Vdc
Tj=100°C



Efficiency, Power Dissipation 2

