

PFC BCM Diode-Bridge-Less $V_{in}=200V$ $I_{in}=50A$

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

Output : $V_o=500V_{dc}$

Gate Drive : $V_d=18V$
 $R_{source}=2\Omega$
 $R_{sink}=1\Omega$

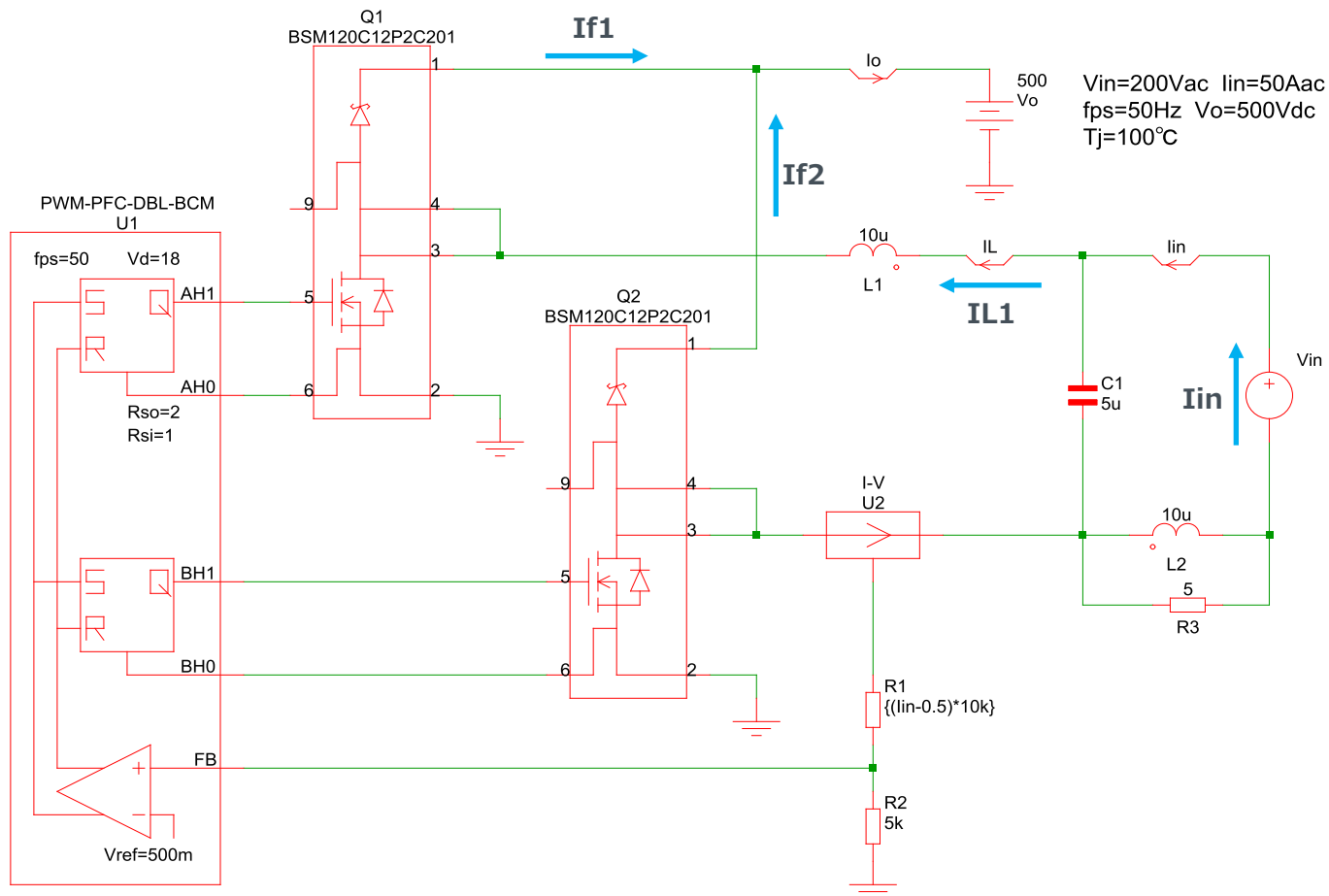
Q1,Q2:BSM120C12P2C201
SiC Power Module
(1200V 120A)

L1, L2 : 10uH

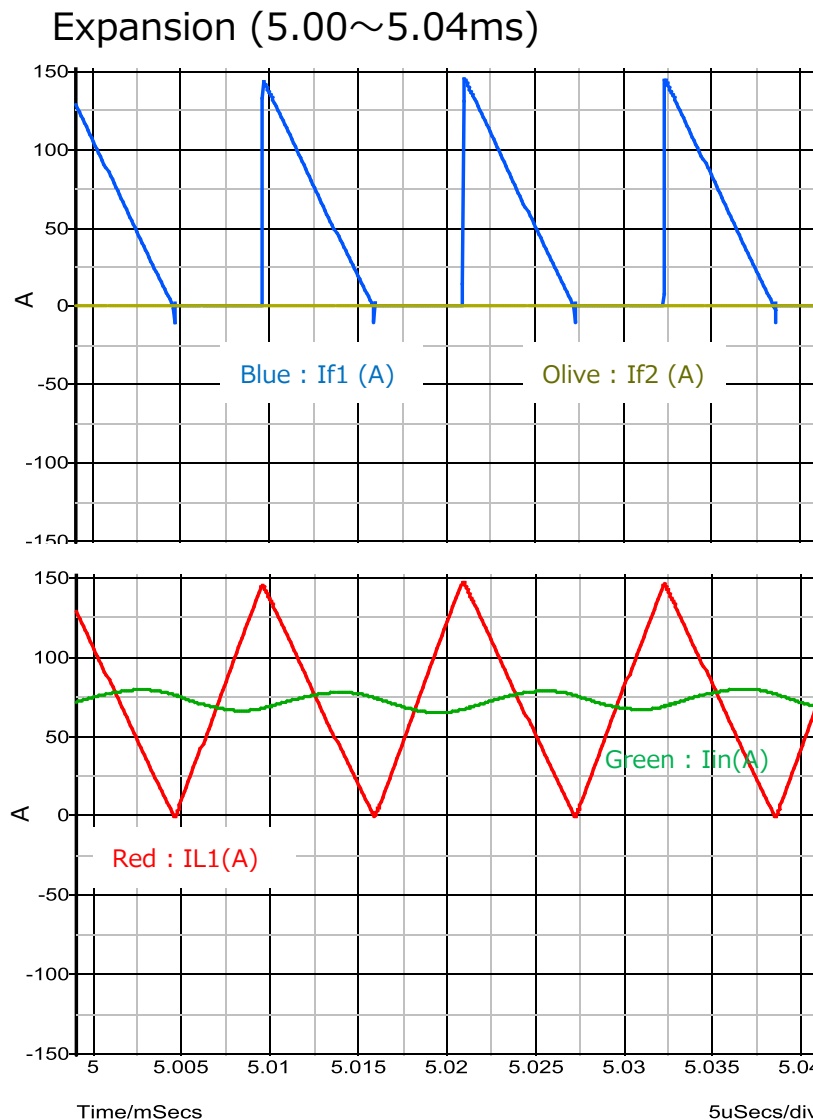
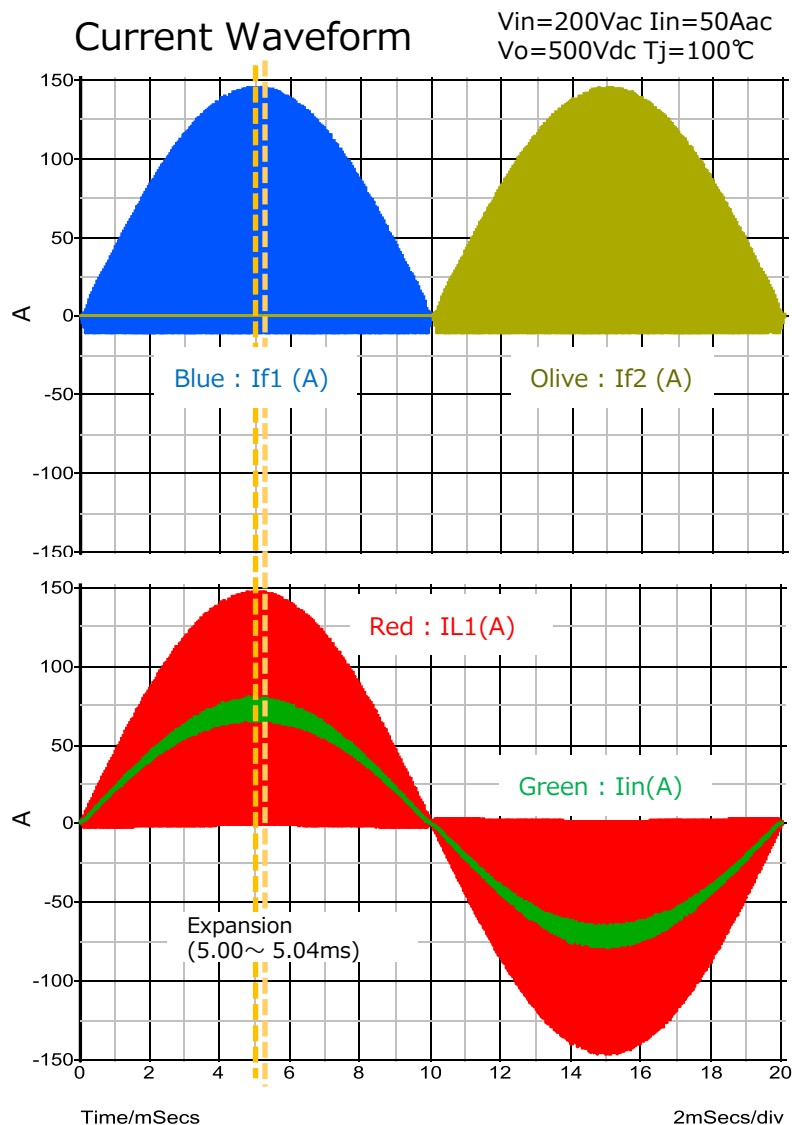
C1 : 5 μ F

Tj : 100°C

PFC Boundary Current Mode Diode-Bridge-Less $V_{in}=200V$ $I_{in}=50A$ Simulation Circuit



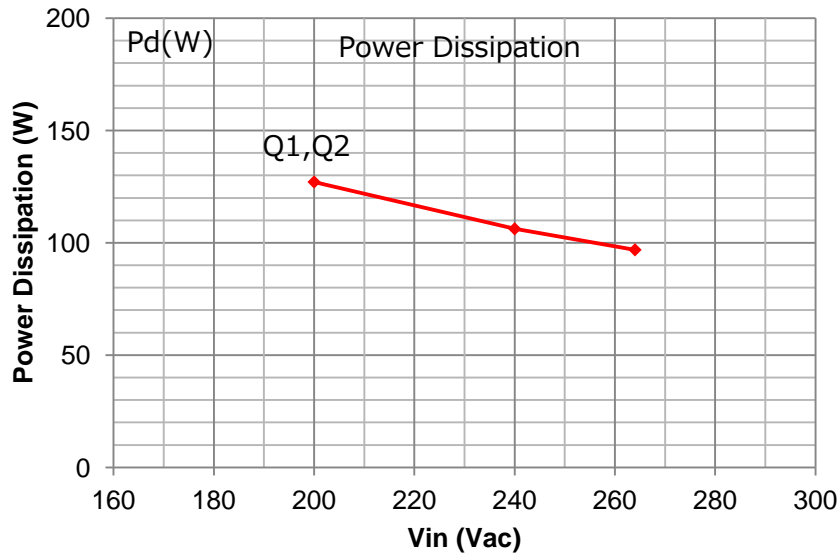
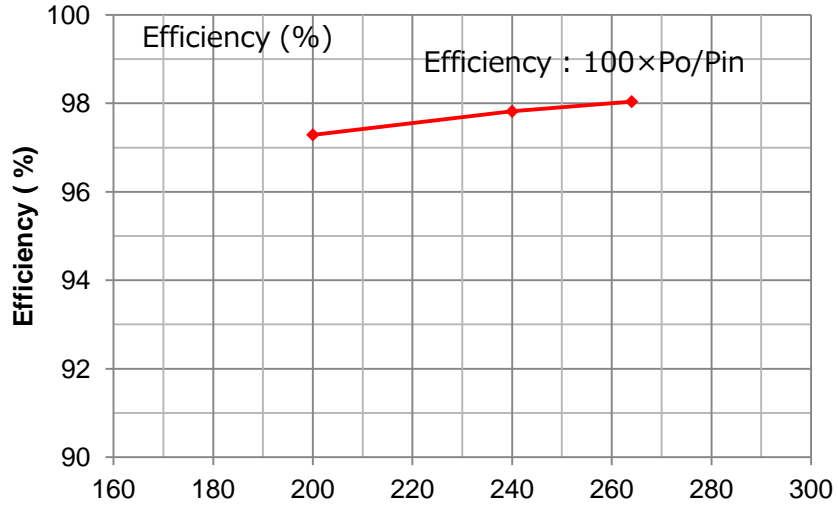
Simulation Waveform



Efficiency, Power Dissipation 1

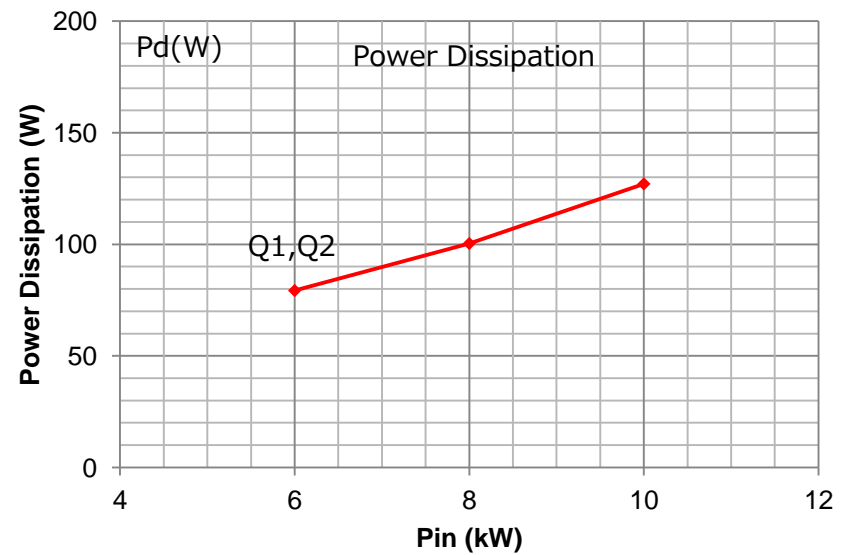
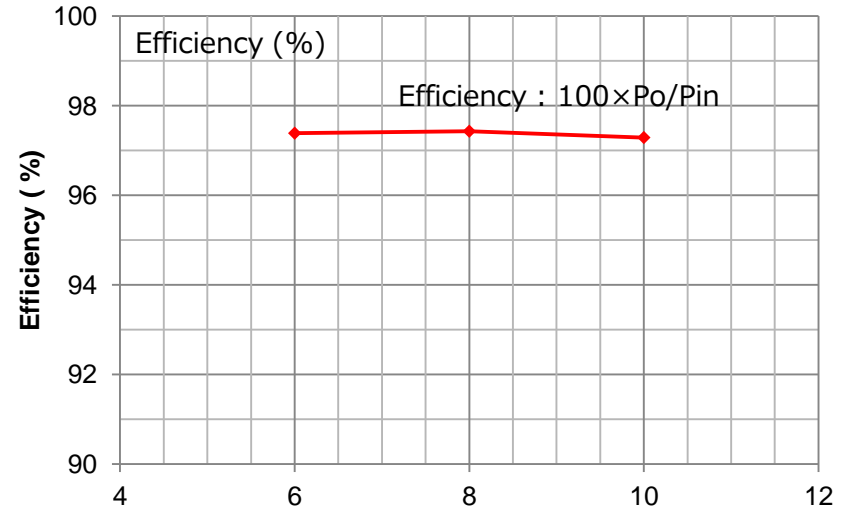
Vin : 200Vac~264Vac

Pin=10kW Vo=500Vdc
Tj=100°C



Pin : 6kW~10kW

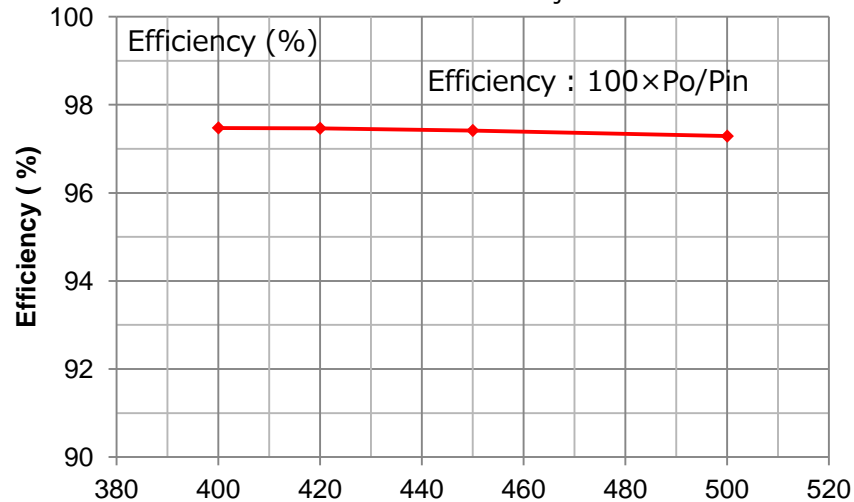
Vin=200Vac Vo=500Vdc
Tj=100°C



Efficiency, Power Dissipation 2

V_o : 400Vdc~500Vdc

$V_{in}=200V_{ac}$ $I_{in}=50A_{ac}$
 $T_j=100^{\circ}C$



T_j : $-25^{\circ}C \sim 125^{\circ}C$

$V_{in}=200V_{ac}$ $I_{in}=50A_{ac}$
 $V_o=500V_{dc}$

