

## FUJI Small-IPM X-series

### Allowable output current vs. carrier frequency (simulation value)

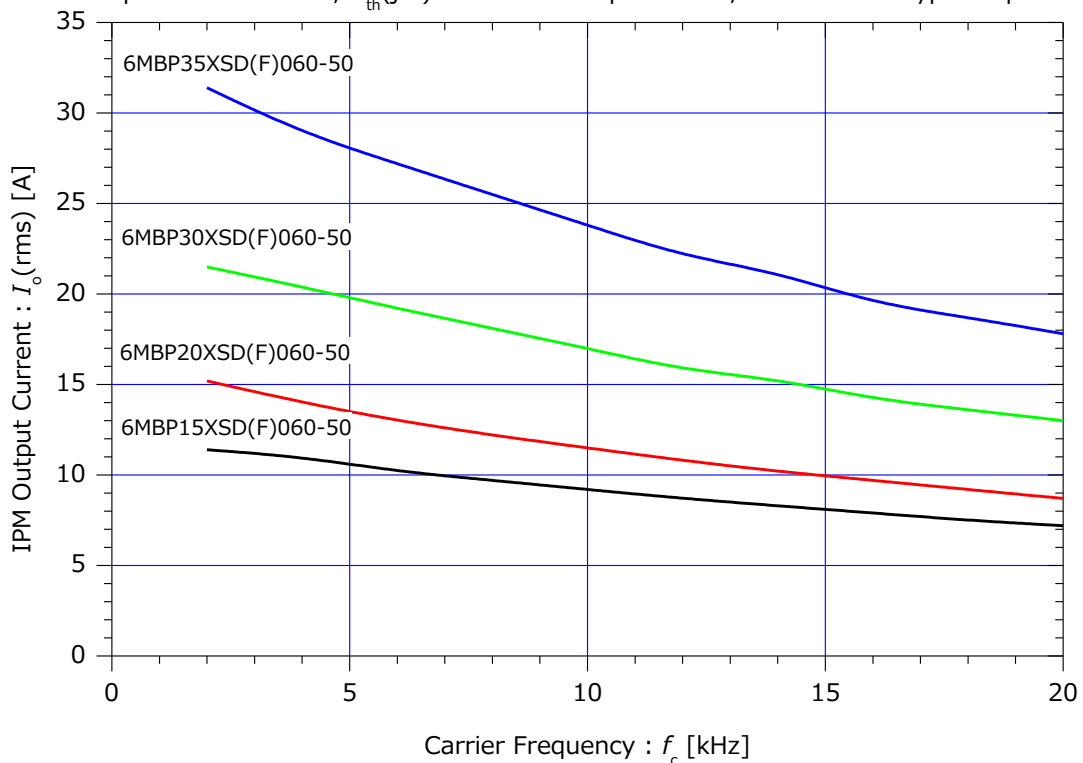
This document shows the simulation value of allowable output current vs. carrier frequency. In this example, in the case of heat sink temperature  $T_f=100^\circ\text{C}$  during inverter operation, the graph shows the allowable output current at which the IGBT junction temperature  $T_j$  is  $150^\circ\text{C}$  or less. For other operating conditions, please calculate them by using Fuji Electric's original simulator. (<http://www.fujielectric.com/products/semiconductor/model/igbt/simulation/index.html>)

Type name: 6MBP15XSD(F)060-50, 6MBP15XSD(F)060-50-F1  
 6MBP20XSD(F)060-50, 6MBP20XSD(F)060-50-F1  
 6MBP30XSD(F)060-50, 6MBP30XSD(F)060-50-F1  
 6MBP35XSD(F)060-50, 6MBP35XSD(F)060-50-F1

#### Carrier Frequency vs. Output Current

$V_{DC}=300\text{V}$ ,  $f_o=60\text{Hz}$ ,  $\text{PF}=0.8$ ,  $\lambda=1.0$ ,  $\theta_{c-f}=0.05^\circ\text{C/W}$ ,  $T_f=100^\circ\text{C}$ ,  $T_j=150^\circ\text{C}$

3phase modulation,  $R_{th}(j-c)$  is maximum Spec. value, Power loss is typical Spec. value



※Calculated with Fuji IGBT Simulator Ver 6.1.1.

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