

# Short circuit capability and SCSOA

## Small IPM X series P642 Package

A short circuit capability dependency on control circuit voltage  $V_{CC}$  is shown in the document.

Conditions:  $V_{P-N(*)}=400V$ ,  $T_{vj}=125^{\circ}C$ , non-repetitive pulse

The definition of short circuit current  $I_{SC}$  and short circuit capability  $t_{SC}$  are shown in Fig.1. In the case of 6MBP50XTA065-50, the IGBT can be safely shut down with  $t_{SC}$  less than  $5.1\mu s$  at  $V_{CCL}=V_{CCH}=V_{B(*)}=16.5V$ , and the  $I_{SC}$  is 7 times the rated current. The SCSOA varies depending on the input voltage  $V_{DC}$ , control voltage  $V_{CC}$ , junction temperature  $T_{vj}$ , etc. Please be careful to design with a suitable margin. Each page shows data for each product.

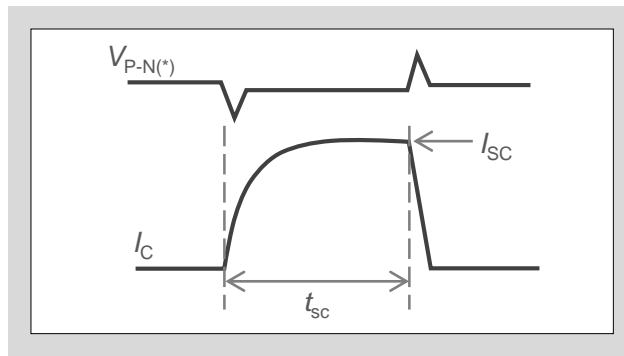


Fig.1 Definition of  $I_{SC}$  and  $t_{SC}$

Type name: 6MBP50XTA065-50, 6MBP50XTC065-50

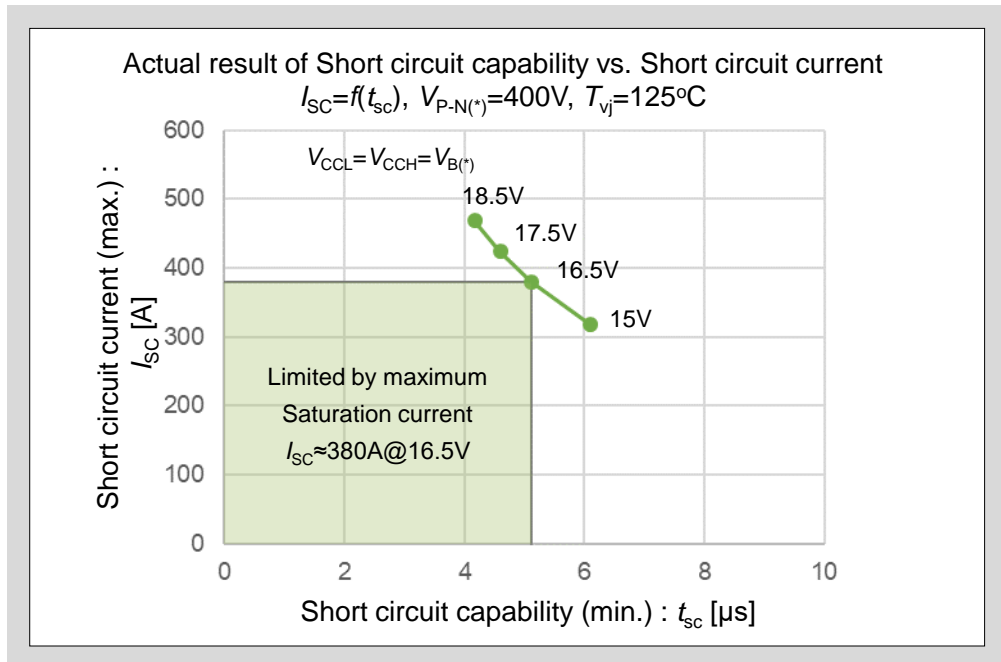


Fig.2 6MBP50XTA(C)065-50 Short circuit capability and SCSOA

Type name : 6MBP75XTA065-50, 6MBP75XTC065-50

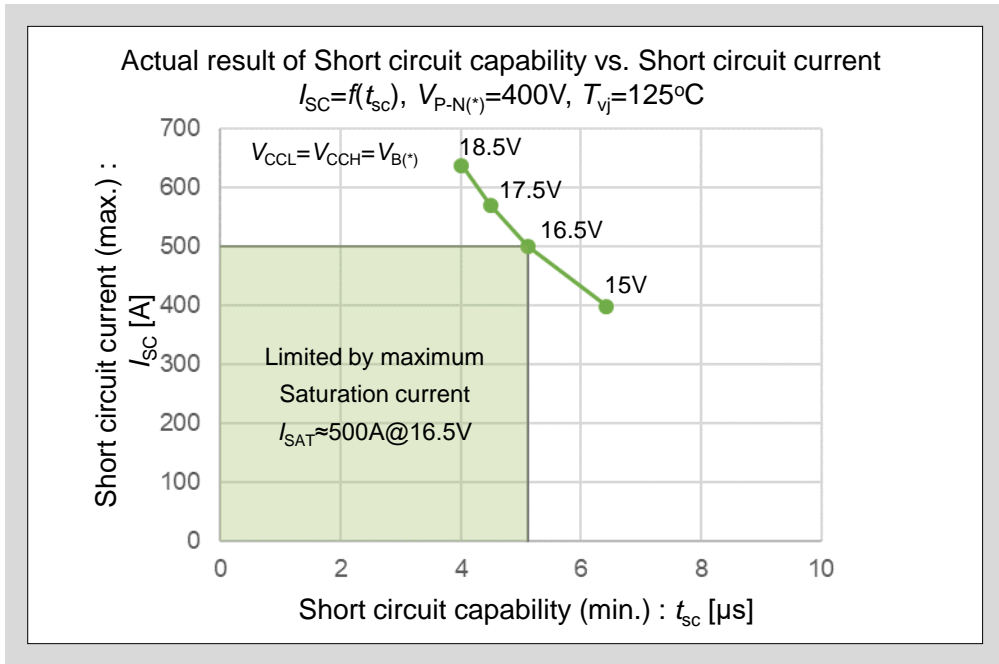


Fig.5 6MBP75XTA(C)065-50 Short circuit capability and SCSOA

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