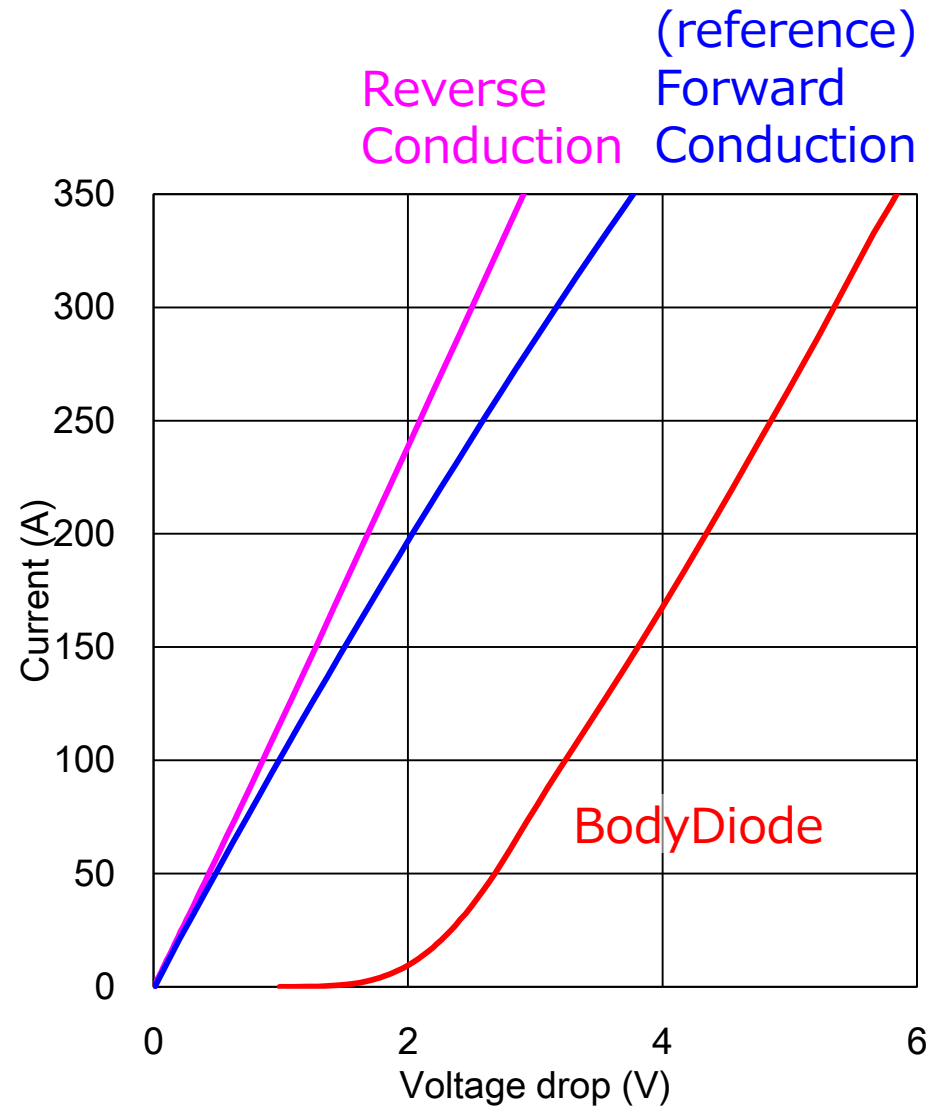
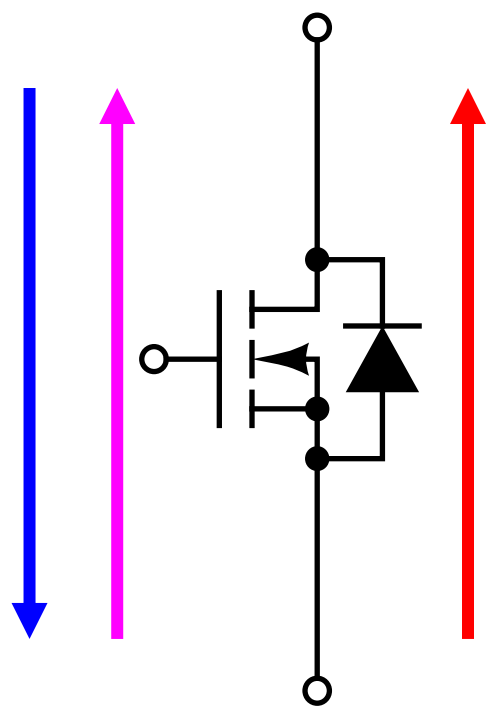


# Effect of SiC-SBD Parallel Connection to SiC-MOSFET

## Comparison of 2G DMOS and 3G UMOS in Modules

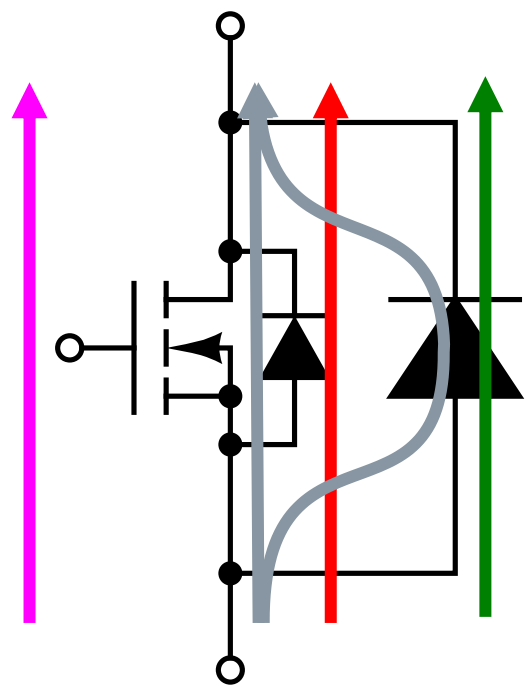
# Reverse and Forward Currents vs Voltage Drops

## UMOS Only



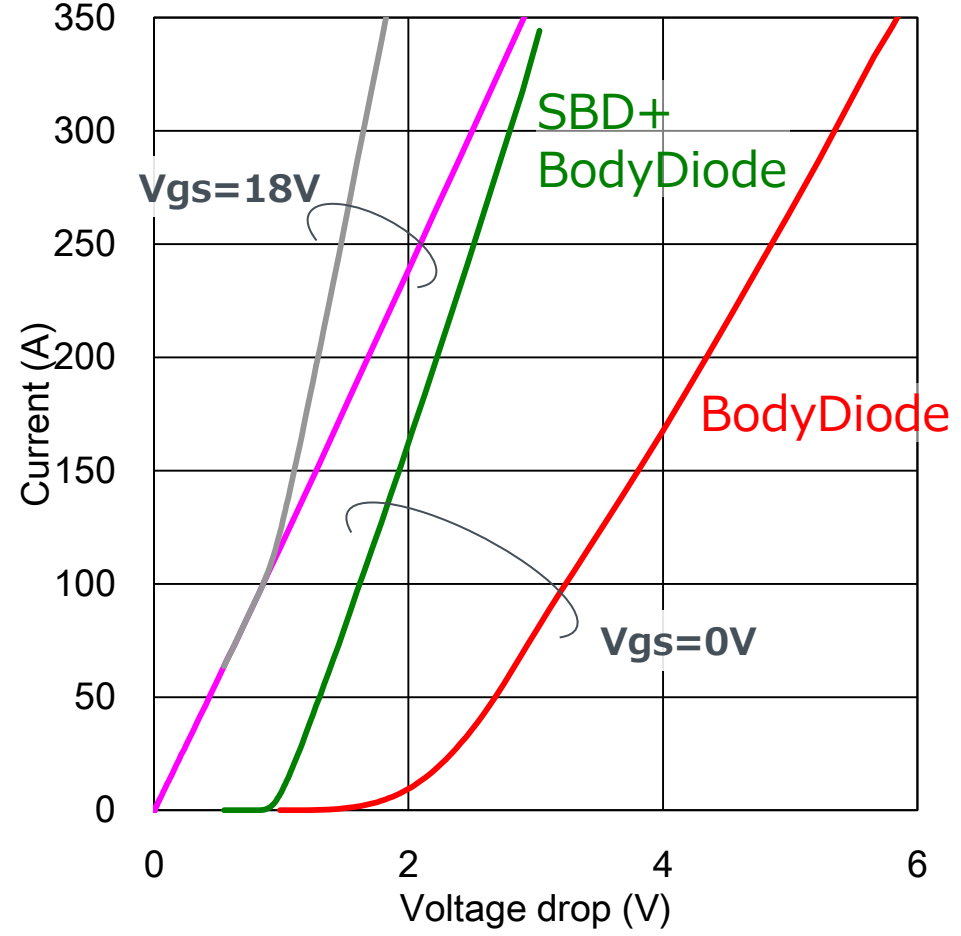
# Reverse and Forward Currents vs Voltage Drops

## UMOS+SBD

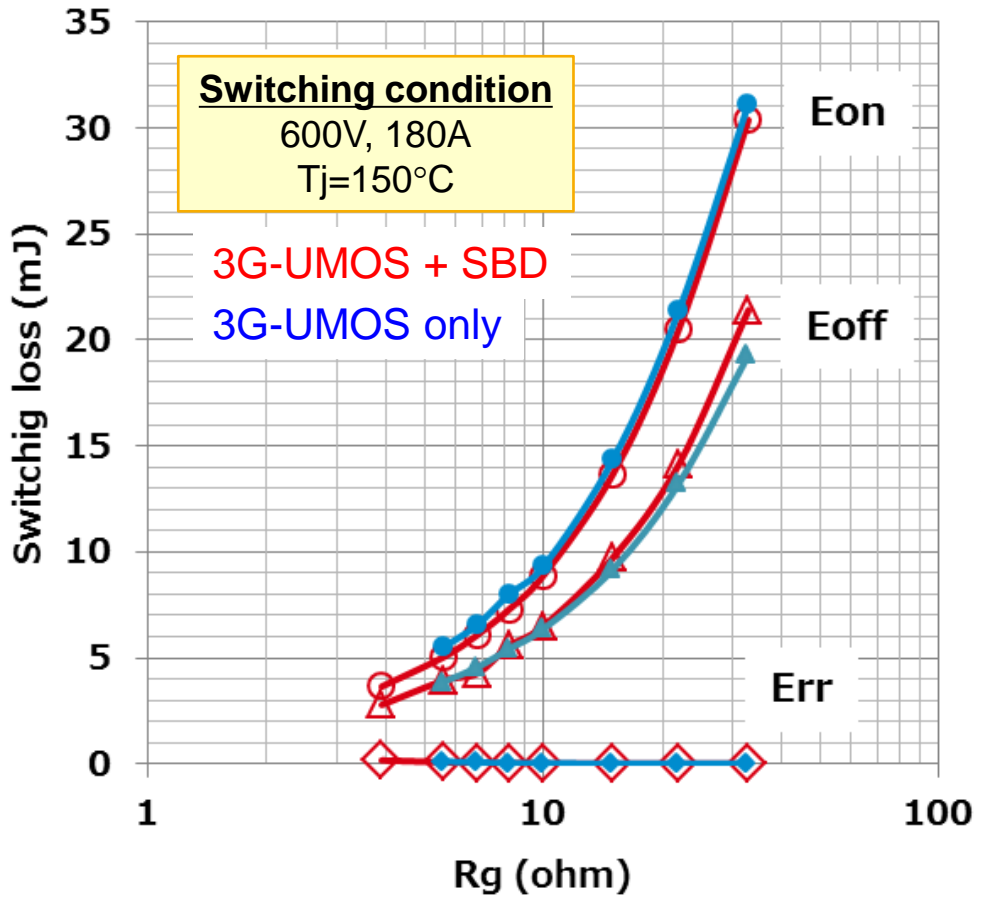


BodyDiode+SBD  
+Reverse Conduction

Reverse Conduction

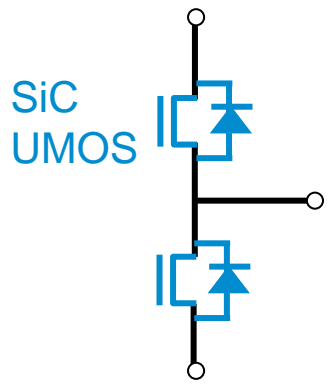
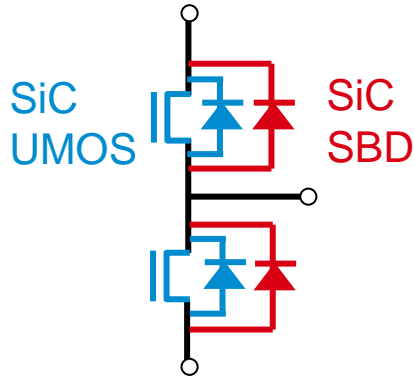


# Switching Characteristics with or without SBD



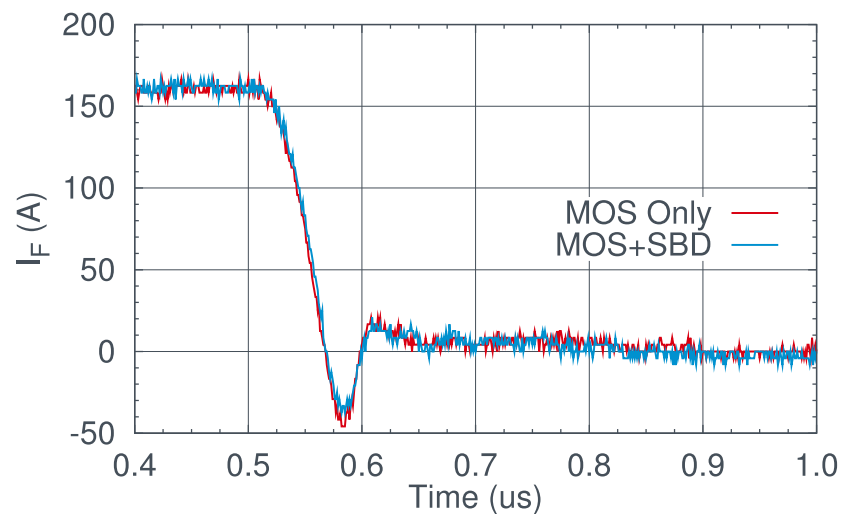
**BSM180D12P3C007**  
1200V 180A  
3G-UMOS+SBD

**MOS module**  
1200V 180A  
3G-UMOS only

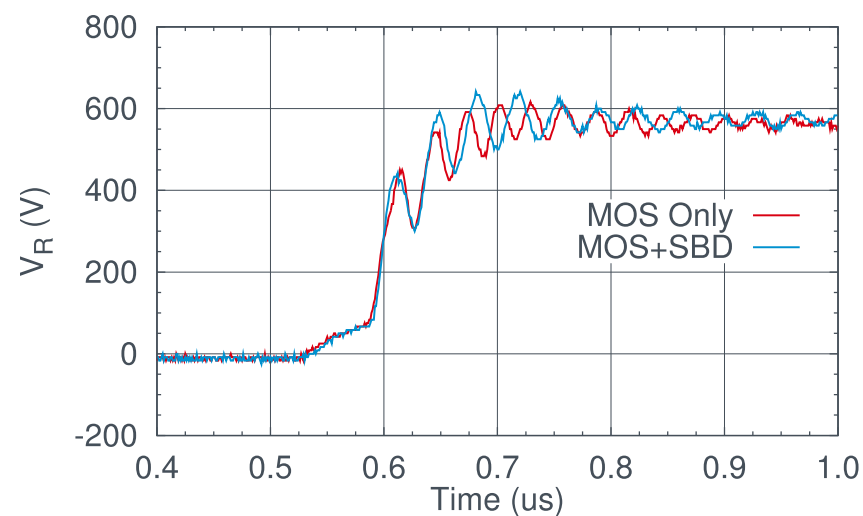
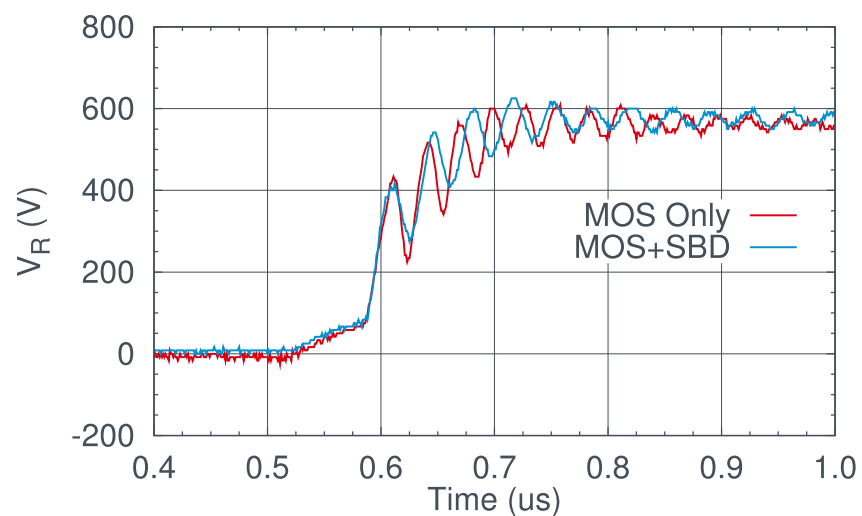
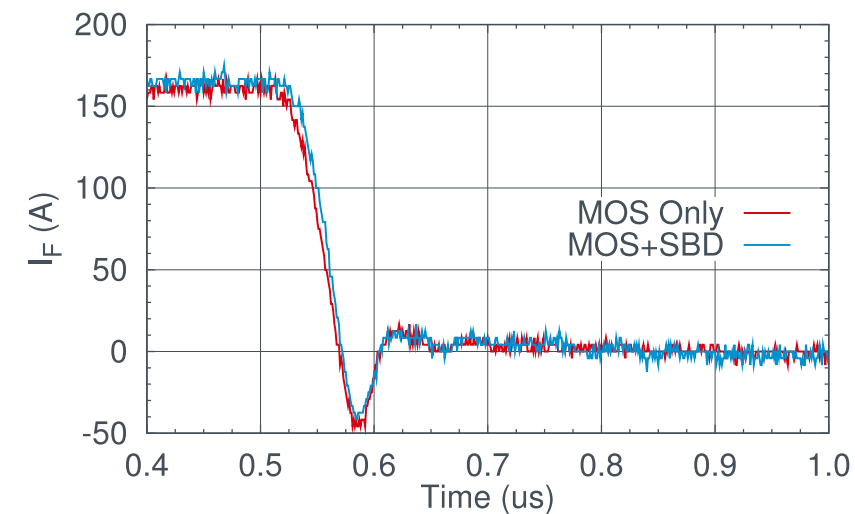


# Recovery Waveforms with or without SBD

25°C



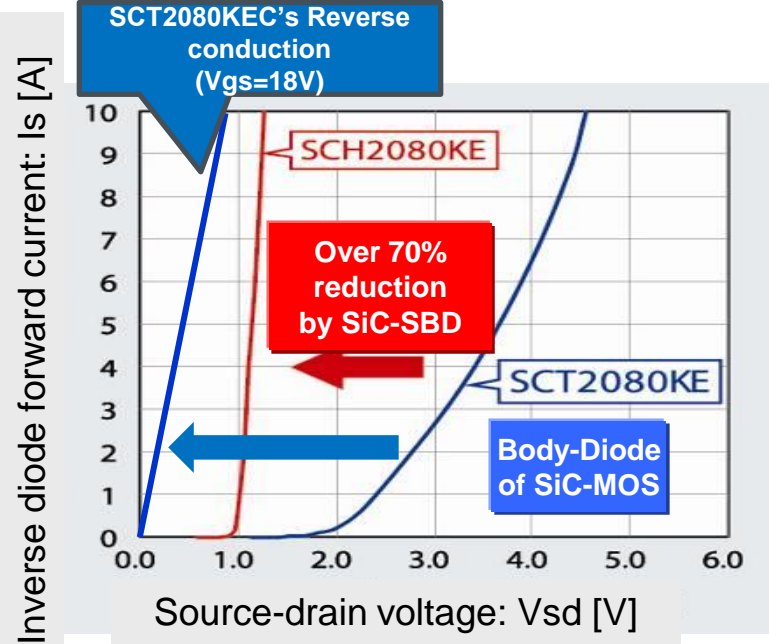
150°C



# Characteristics of Body Di of SiC-MOSFET

## Forward Characteristics

As a wide-bandgap semiconductor, Vf of body Di is high. But with its gate turn-on, it gets much lower Vf by reverse conduction



## Reverse recovery waveform

Unlike Si MOSFET, SiC MOSFET has a body Di with a quite small Trr

