



GSDN001

Double Pulse Test Results for the GS-065-0xx-1-L PDFNs

Double Pulse Test Results for the GS-065-0xx-2-L PDFNs

June 2022

PURPOSE

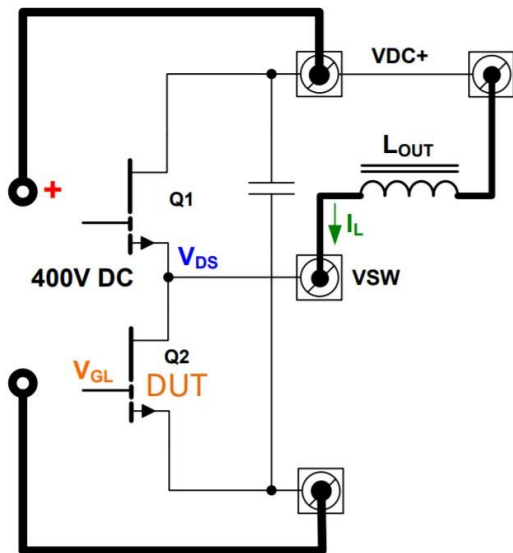
The Double Pulse Test (DPT) is used to characterize the *turn-on* and *turn-off* characteristics of switching power transistors.

CONTENT

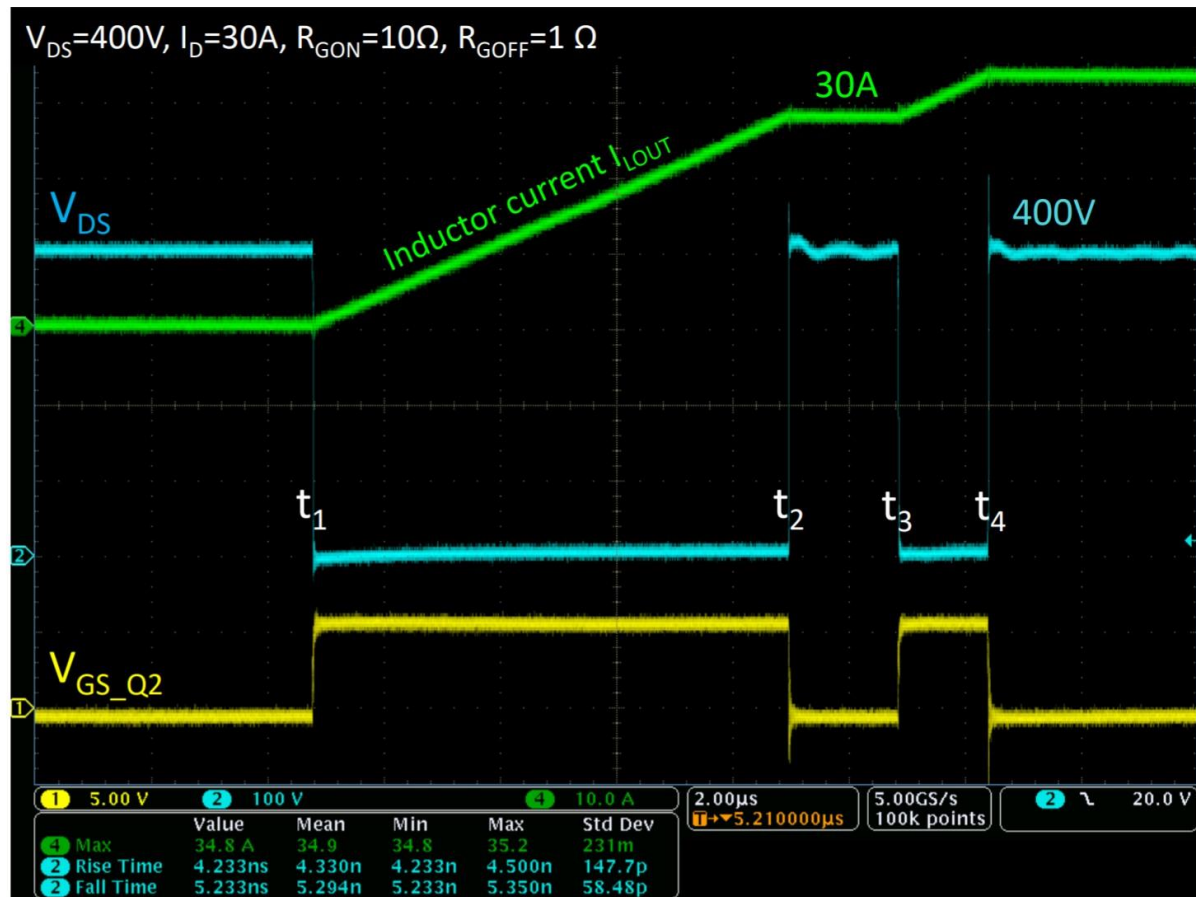
This document provides the following information

- An overview of the DPT set up
- DPT results for GaN Systems' PDFN E-HEMTS
 - GS-065-004-1-L
 - GS-065-008-1-L
 - GS-065-011-1-L
 - GS-065-011-2-L
 - GS-065-018-2-L
 - GS-065-030-2-L

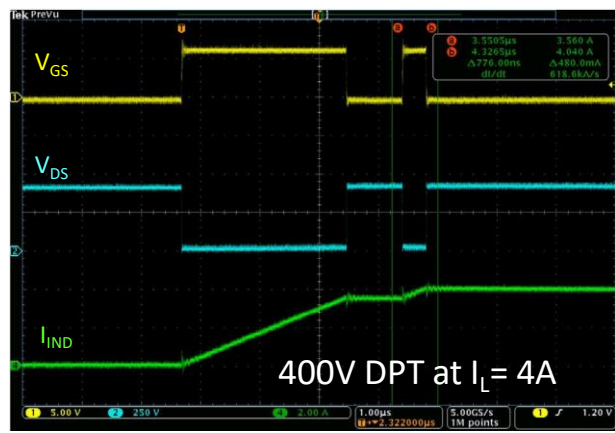
Double Pulse Test Overview



- t_1 : Device Under Test (DUT) turned on. Inductor charged to desired current (30A in this example)
- t_2 : DUT turned off. Inductor current freewheels in Q1.
DUT turn-off \rightarrow Measure dV/dt , t_{rise}
- t_3 : DUT turn-on \rightarrow Measure, dV/dt , t_{fall}
- t_4 : DUT turned off

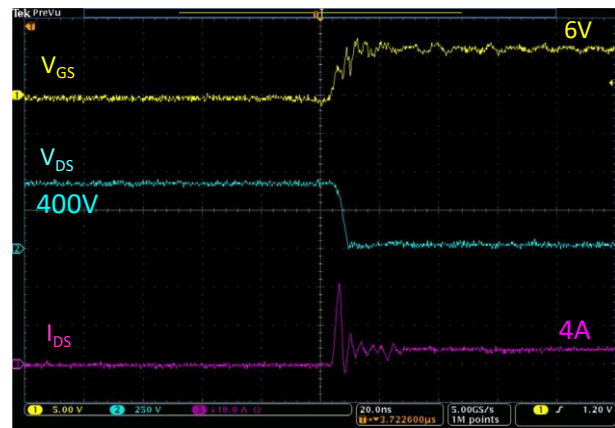


GS-065-004-1-L: Double Pulse Test at 4A

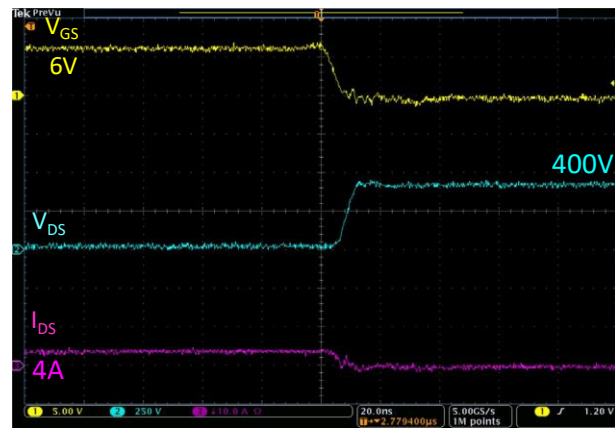


GS-065-004-1-L

Parameter	Value
V_{DS}	650 V
I_D	4 A
$R_{DS(on)}$	450 mΩ

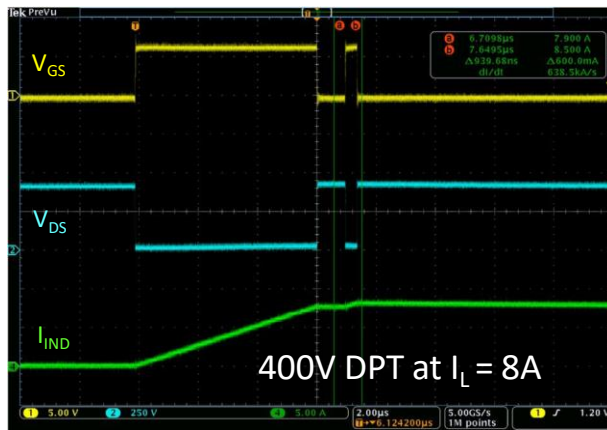


Turn-on



Turn-off

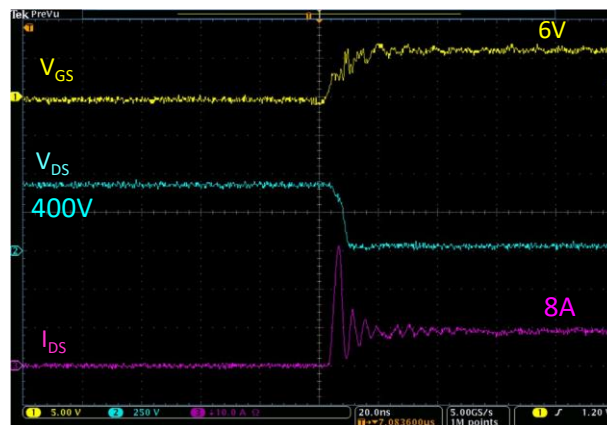
GS-065-008-1-L: Double Pulse Test at 8A



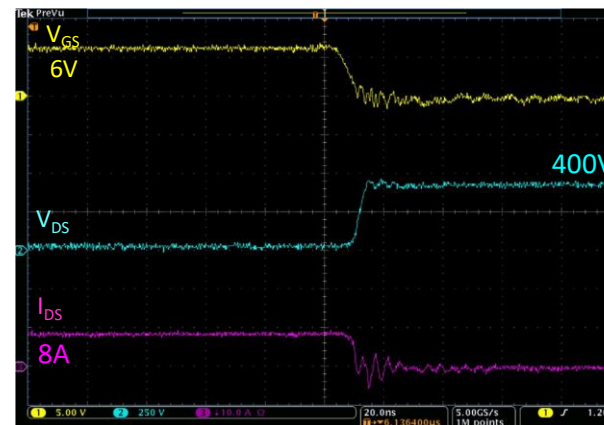
GS-065-008-1-L



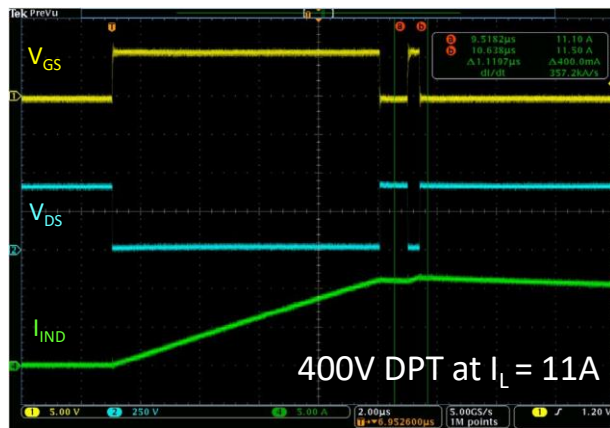
Parameter	Value
V_{DS}	650 V
I_D	8 A
$R_{DS(on)}$	225 m Ω



Turn-on



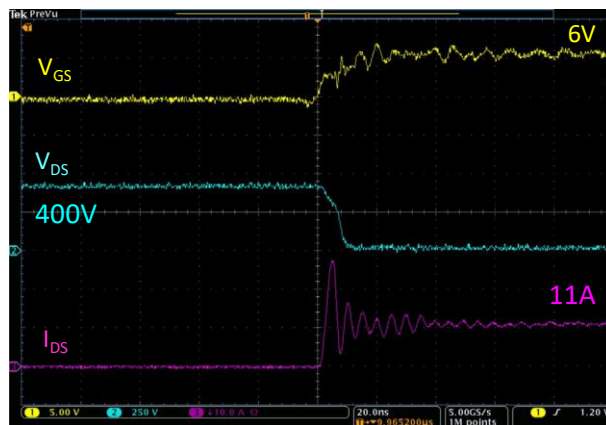
Turn-off



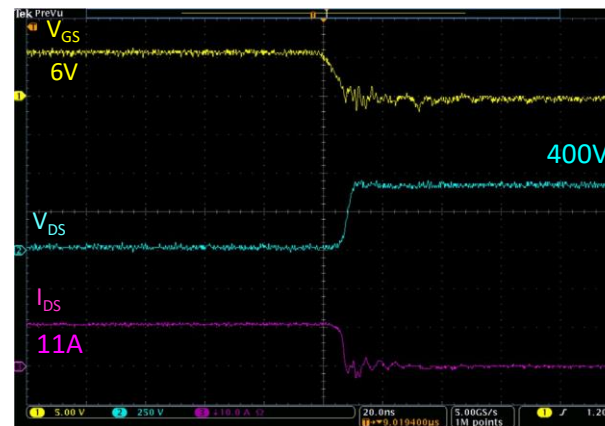
GS-065-011-1-L



Parameter	Value
V_{DS}	650 V
I_D	11 A
$R_{DS(on)}$	150 mΩ



Turn-on



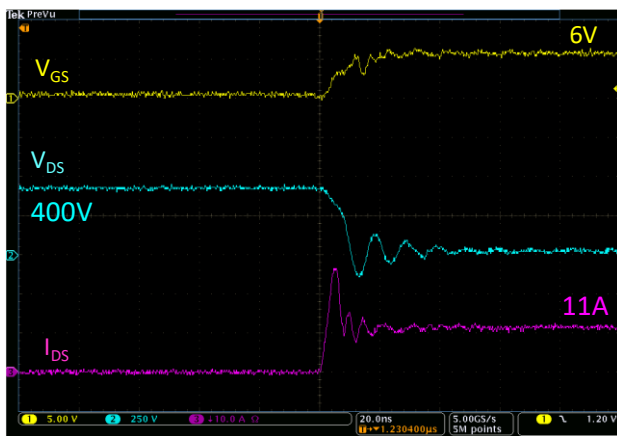
Turn-off



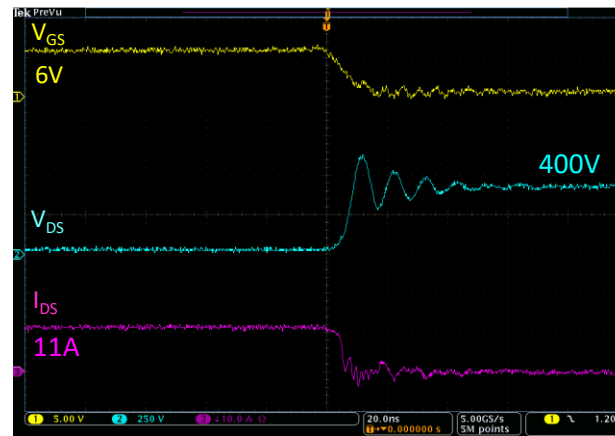
GS-065-011-2-L



Parameter	Value
V_{DS}	650 V
I_D	11 A
$R_{DS(on)}$	150 m Ω

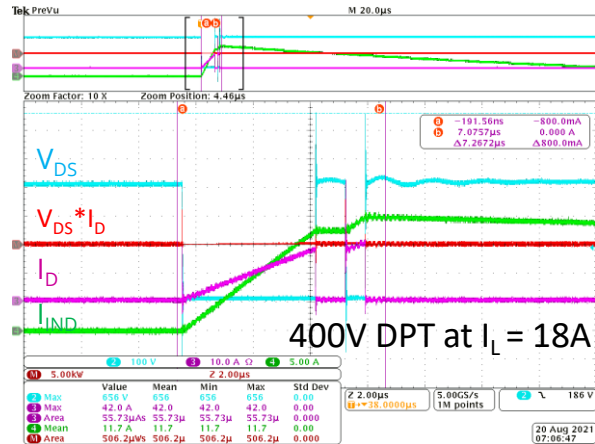



Turn-on



Turn-off

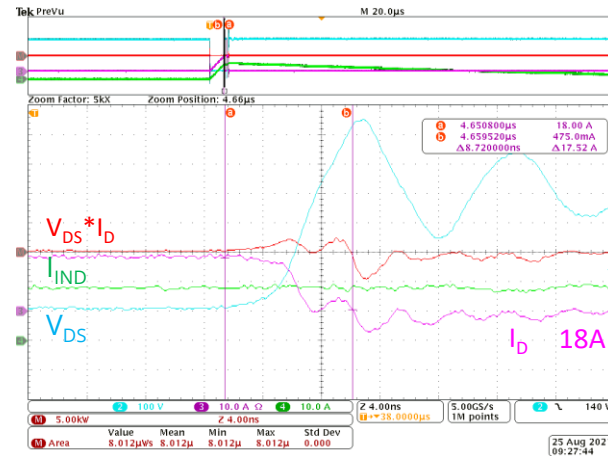
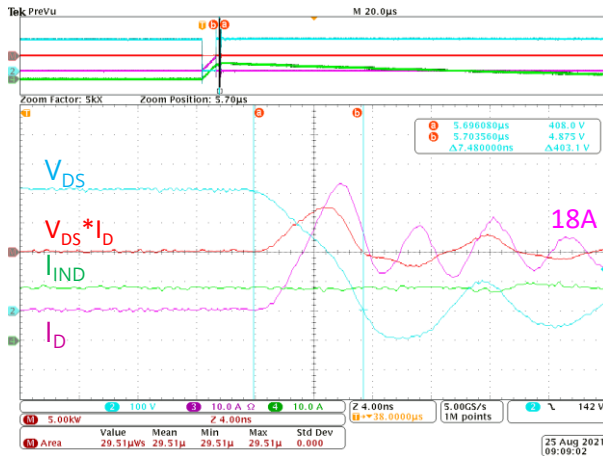
GS-065-018-2-L : Double Pulse Test at 18 A



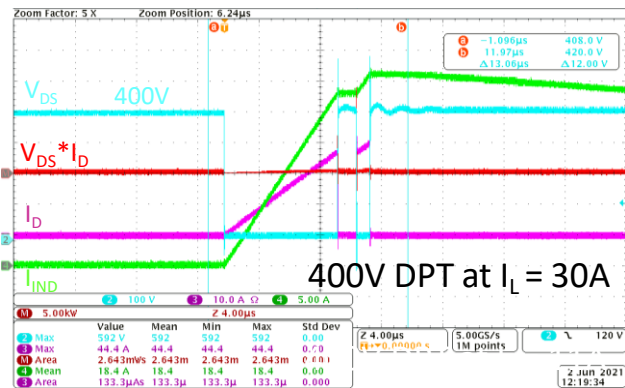


GS-065-018-2-L

Parameter	Value
V_{DS}	650 V
I_D	18 A
$R_{DS(on)}$	78 mΩ

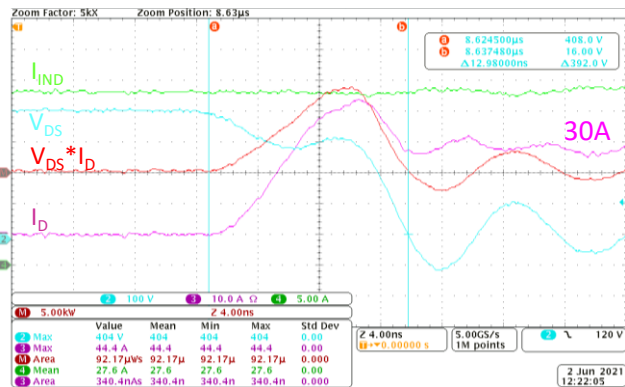


GS-065-030-2-L: Double Pulse Test at 30A

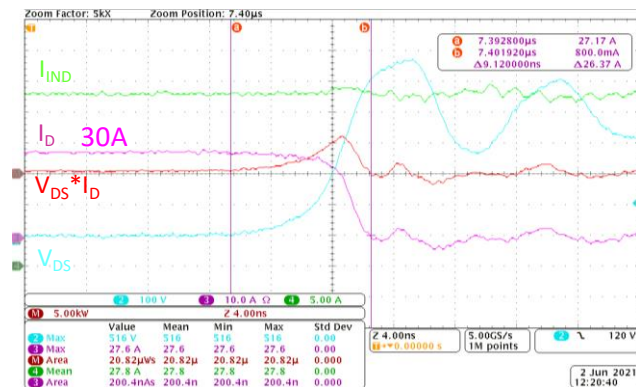


GS-065-030-2-L

Parameter	Value
V_{DS}	650 V
I_D	30 A
$R_{DS(on)}$	50 mΩ



Turn-on



Turn-off



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