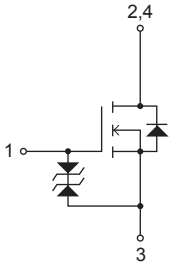
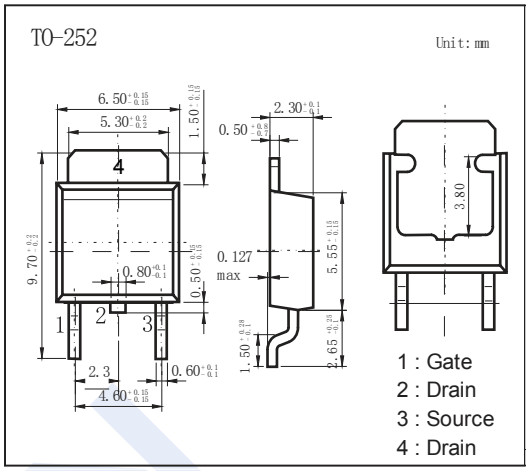
N-Channel Enhancement MOSFET

NDT35N06

■ Features

- $V_{DS\ (V)}$ = 60V
- I_D = 35 A
- $R_{DS(ON)}$ < 23mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 33mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 37mΩ (V_{GS} = 4V)





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	35	A
Pulsed Drain Current (Note.1)	I_{DP}	105	
Avalanche Current (Note.2)	I_{AV}	18	
Avalanche Energy (Single Pulse) (Note.3)	E_{AS}	19	mJ
Power Dissipation Tc=25°C	P_D	40	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	Tstg	-55 to 150	

Note.1 :PW ≤ 10 us, duty cycle ≤ 1%

Note.2 :L≤100μH, Single pulse

Note.3 :V_{DD}=10V, L=100μH, I_{AV}=18A

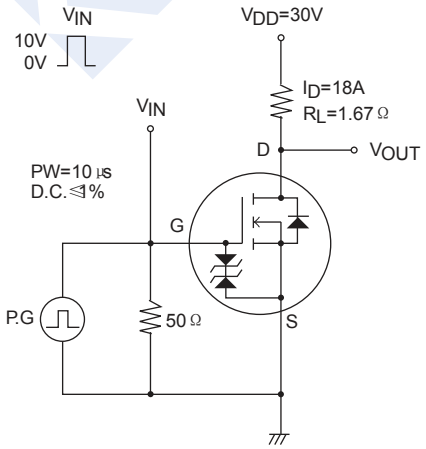
N-Channel Enhancement MOSFET

NDT35N06

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=1mA, V_{GS}=0V	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±16V			±10	
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=10V , I_D=1mA	1.2		2.6	V
Forward Transfer Admittance	|Y_{fs}|	V_{DS}=10V , I_D=18A		35		S
Static Drain-Source On-Resistance	$R_{DS(ON)1}$	V_{GS}=10V, I_D=18A		17	23	mΩ
	$R_{DS(ON)2}$	V_{GS}=4.5V, I_D=9A		23	33	
	$R_{DS(ON)3}$	V_{GS}=4.0V, I_D=5A		25	37	
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=20V, f=1MHz		1820		pF
Output Capacitance	C_{oss}			150		
Reverse Transfer Capacitance	C_{rss}			100		
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=30V, I_D=35A		34.5		nC
Gate Source Charge	Q_{gs}			6.5		
Gate Drain Charge	Q_{gd}			6.8		
Turn-On DelayTime	$t_{d(on)}$	See specified Test Circuit		16		ns
Turn-On Rise Time	t_r			110		
Turn-Off DelayTime	$t_{d(off)}$			125		
Turn-Off Fall Time	t_f			87		
Maximum Body-Diode Continuous Current	I_S				35	A
Diode Forward Voltage	V_{SD}	I_S=35A,V_{GS}=0V		0.96	1.2	V

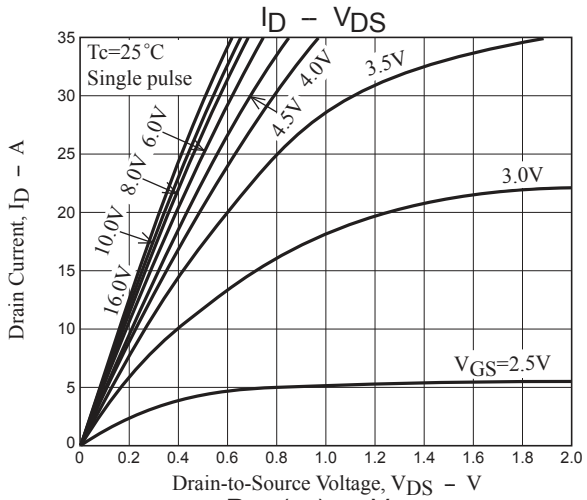
Switching Time Test Circuit:

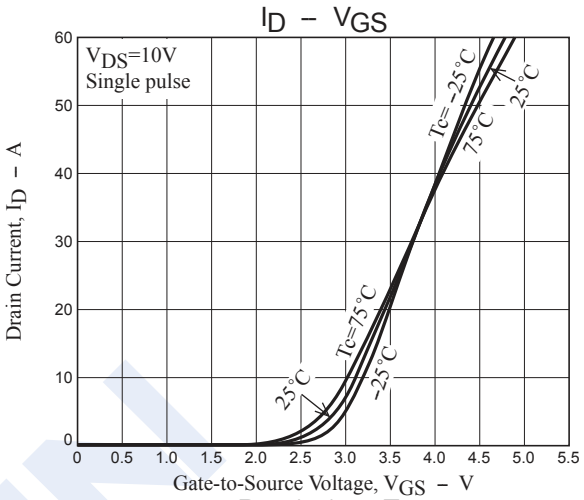


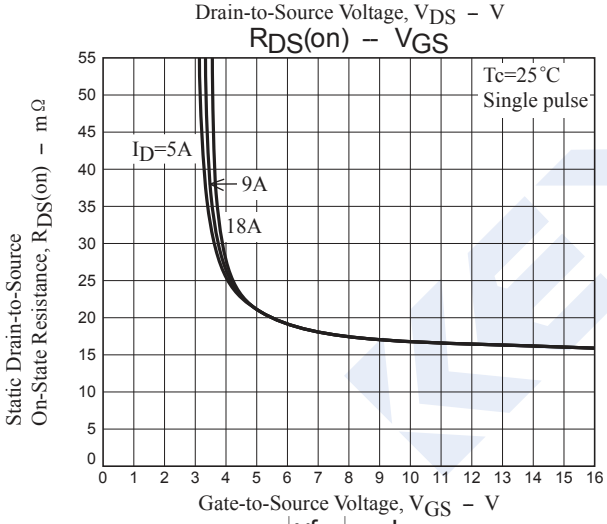
N-Channel Enhancement MOSFET

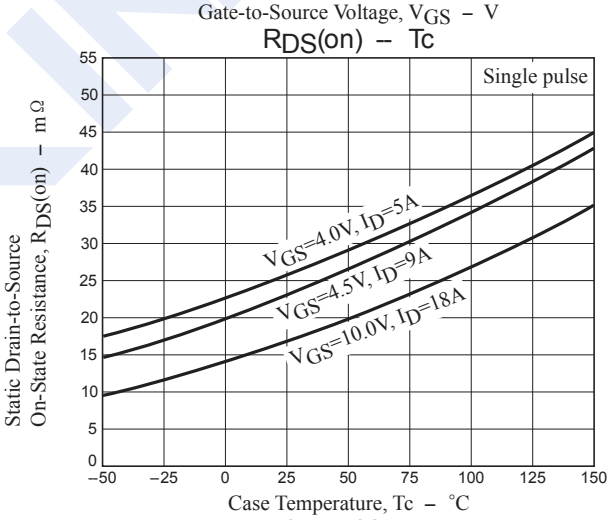
NDT35N06

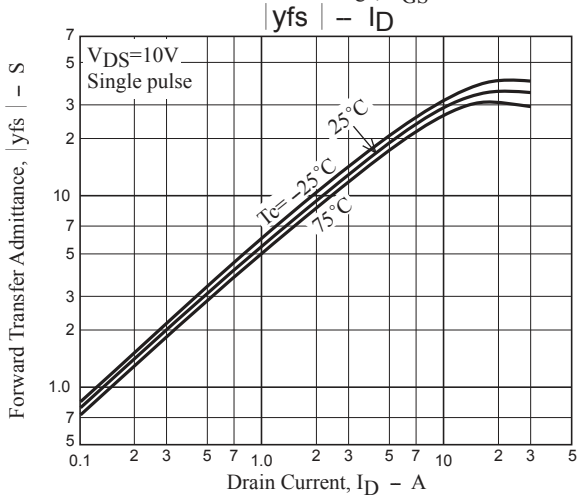
■ Typical Characterisitics

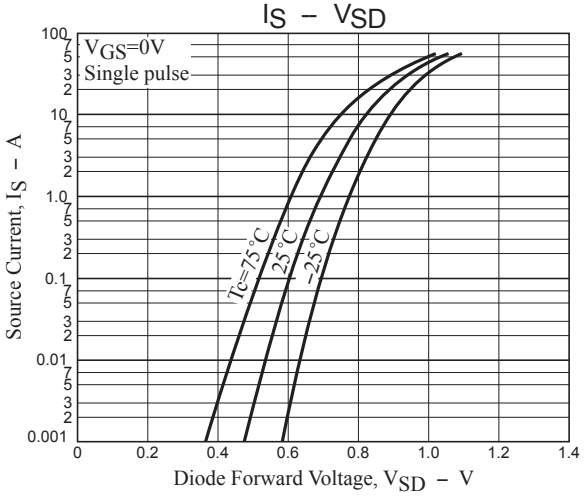










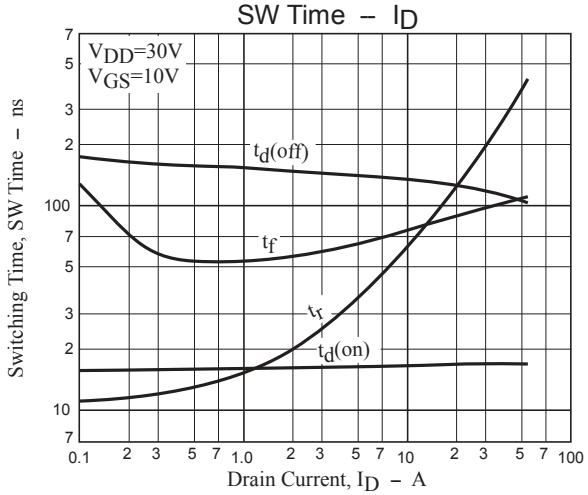


N-Channel Enhancement MOSFET

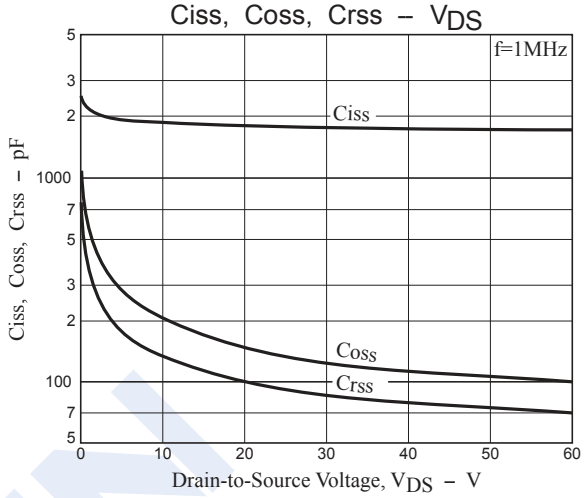
NDT35N06

■ Typical Characterisitics

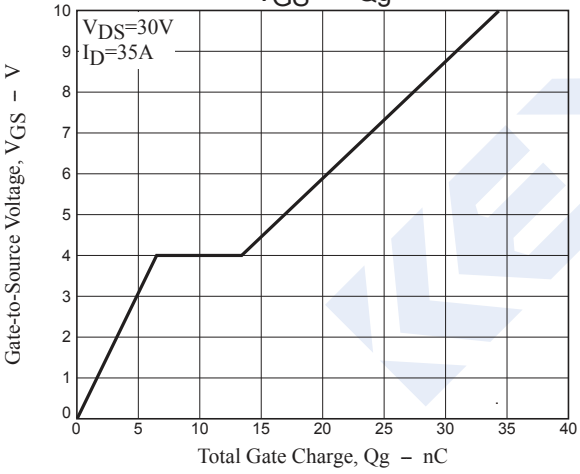
SW Time – I_D



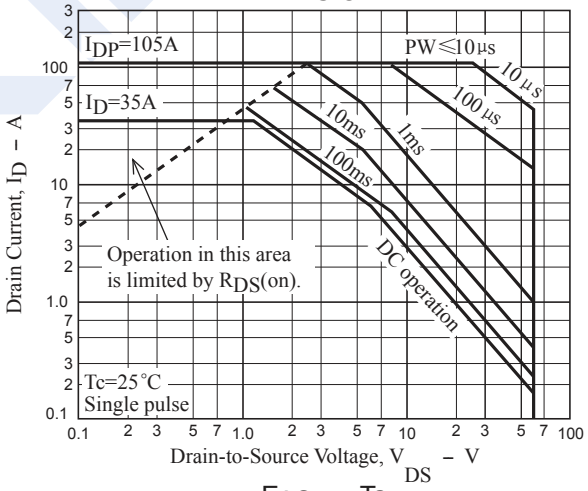
Ciss, Coss, Crss – V_{DS}



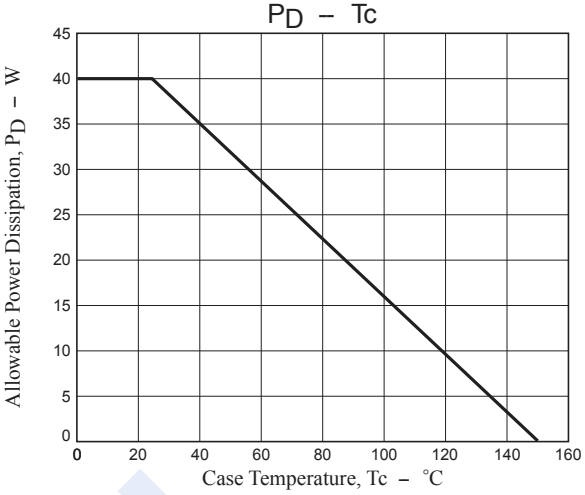
V_{GS} – Qg



A S O



P_D – Tc



E_{AS} – Ta