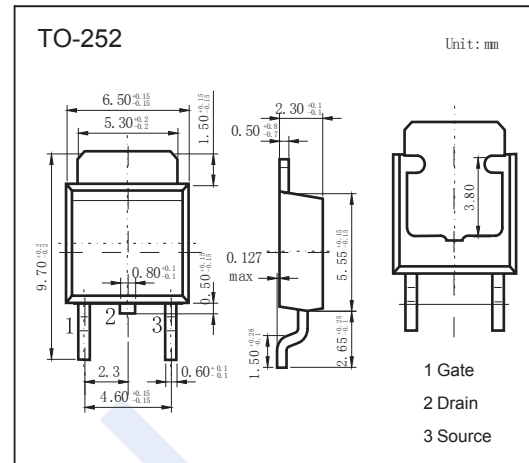
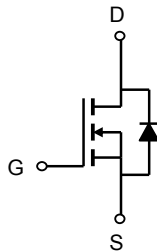


N-Channel MOSFET

NDT70N03

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 33A (V_{GS} = 10V)$
- $R_{DS(ON)} < 4.3m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 6.5m\Omega (V_{GS} = 4.5V)$



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current (Note.1)	$T_a = 25^\circ C$	I_D	33	A
	$T_c = 70^\circ C$		70	
Pulsed Drain Current		I_{DM}	100	
Power Dissipation	$T_c = 25^\circ C$	P_D	88	W
	$T_a = 70^\circ C$		8.3	
Thermal Resistance.Junction- to-Ambient (Note.1)	$t \leq 10 \text{ sec}$	R_{thJA}	18	$^\circ C/W$
	Steady State		50	
Thermal Resistance.Junction- to-Case		R_{thJC}	1.5	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: Surface Mounted on FR4 Board, $t \leq 10 \text{ sec}$.

N-Channel MOSFET

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■ Electrical Characteristics Ta = 25°C

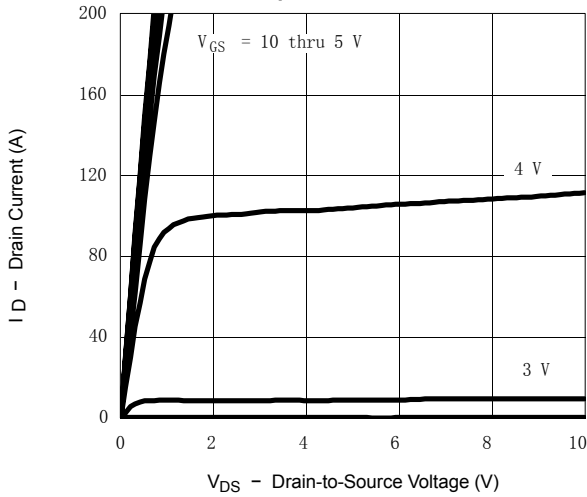
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
		V _{DS} =30V, V _{GS} =0V, T _J =125°C			50	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	1		3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		3.5	4.3	mΩ
		V _{GS} =10V, I _D =20A, T _J =125°C			7	
		V _{GS} =4.5V, I _D =20A		5.1	6.5	
On State Drain Current	I _{D(ON)}	V _{GS} =10V, V _{DS} =5V	50			A
Forward Transconductance	g _{FS}	V _{DS} =15V, I _D =20A	20			S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz (Note.1)		5100		pF
Output Capacitance	C _{oss}			860		
Reverse Transfer Capacitance	C _{rss}			430		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz (Note.1)	0.5	1	1.5	Ω
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =50A (Note.1)		90	135	nC
Gate Source Charge	Q _{gs}			18		
Gate Drain Charge	Q _{gd}			16		
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, R _L =0.3Ω, R _G =2.5Ω, I _D =50A (Note.1)		12	20	ns
Turn-On Rise Time	t _r			12	20	
Turn-Off DelayTime	t _{d(off)}			40	60	
Turn-Off Fall Time	t _f			10	15	
Body Diode Reverse Recovery Time	t _{rr}	I _F =50A, di/dt=100A/μs		40	80	
Maximum Body-Diode Continuous Current	I _S				8.3	A
Pulsed Current	I _{SM}				100	
Diode Forward Voltage	V _{SD}	I _S =100A, V _{GS} =0V		1.2	1.5	V

Note.1: Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%.

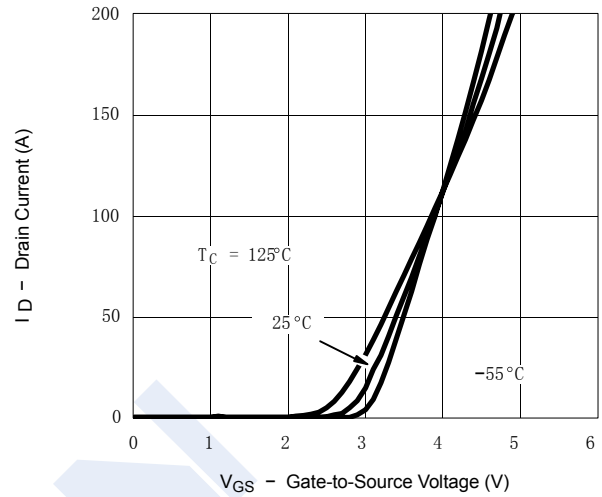
N-Channel MOSFET NDT70N03

■ Typical Characteristics

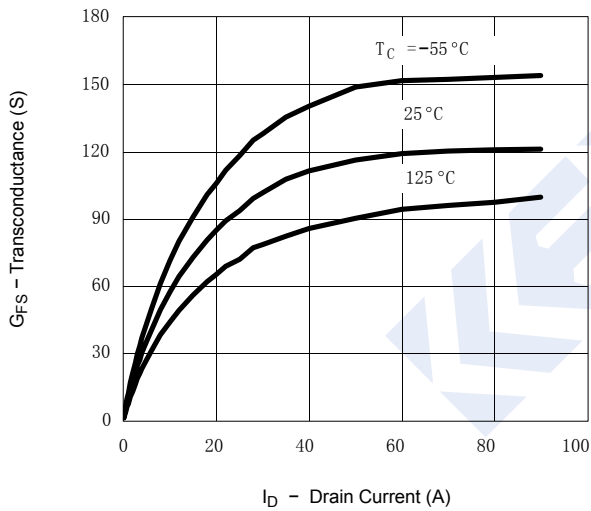
Output Characteristics



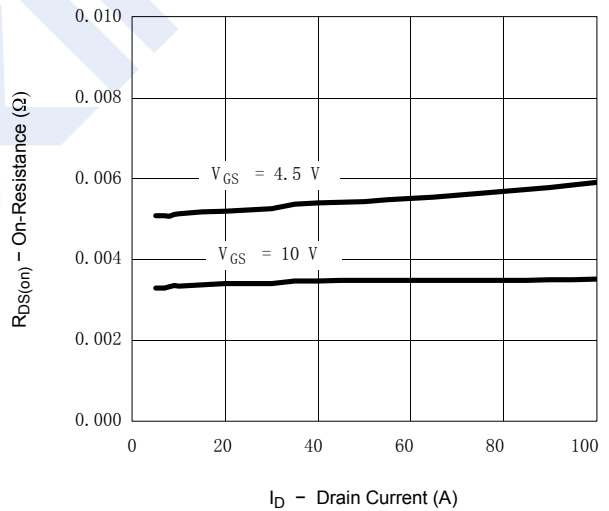
Transfer Characteristics



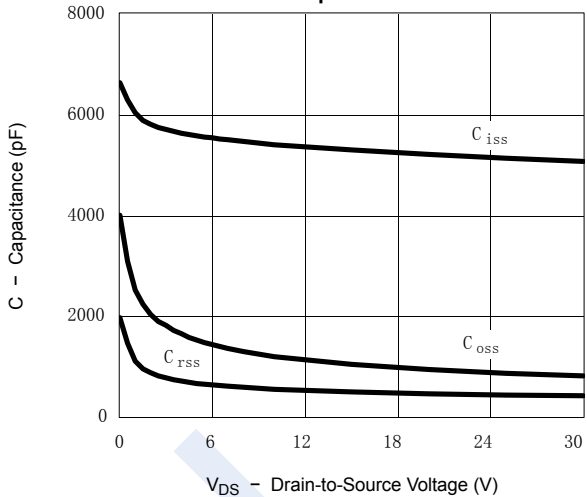
Transconductance



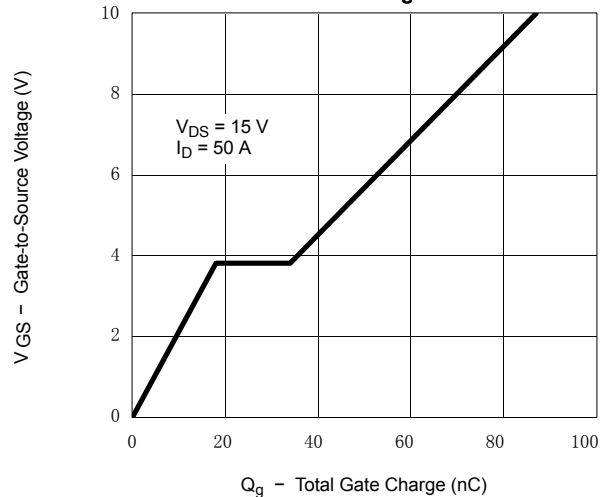
On-Resistance vs. Drain Current



Capacitance

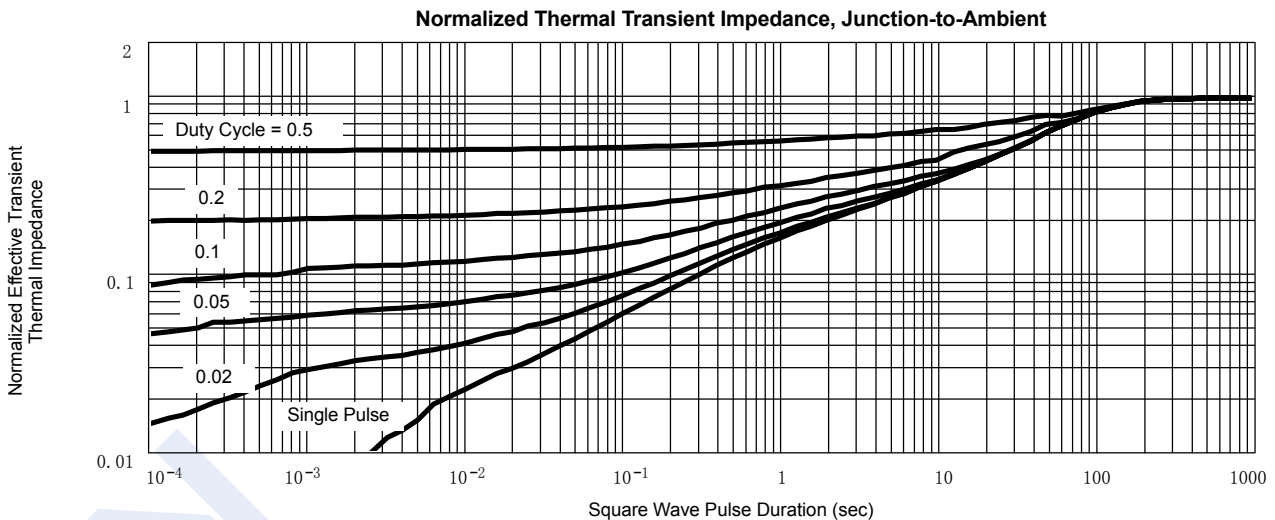
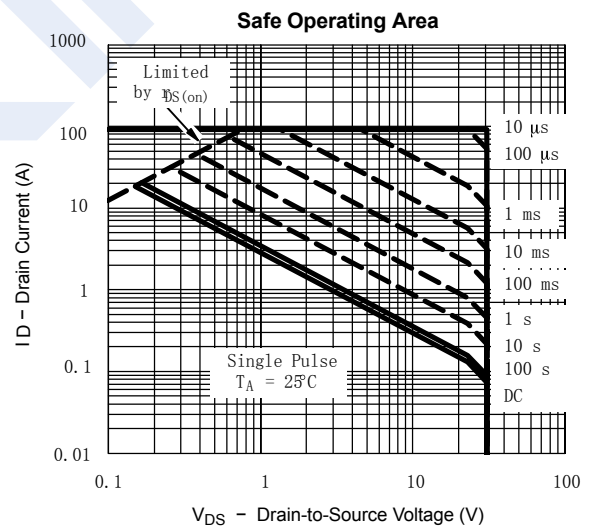
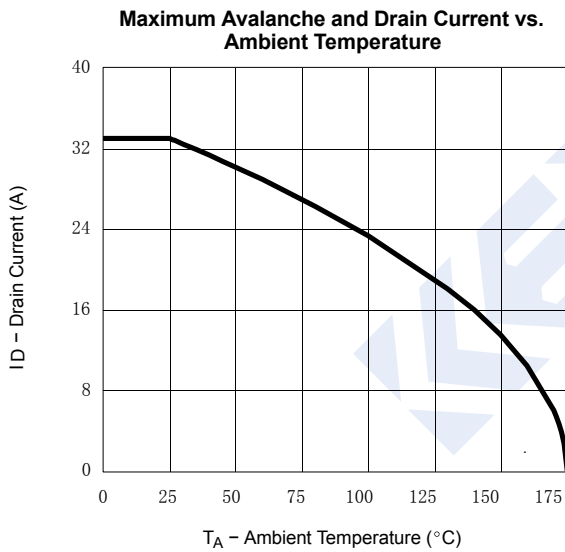
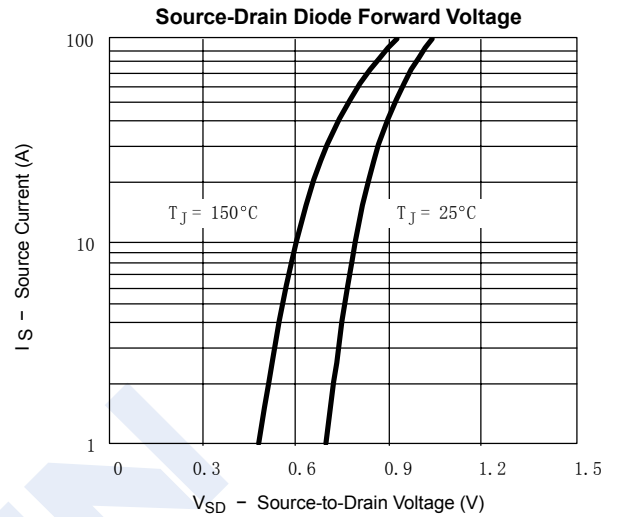
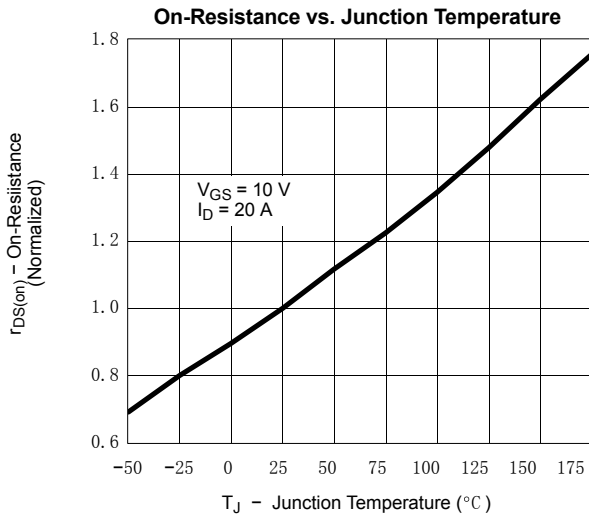


Gate Charge



N-Channel MOSFET NDT70N03

Typical Characteristics



N-Channel MOSFET NDT70N03

■ Typical Characteristics

