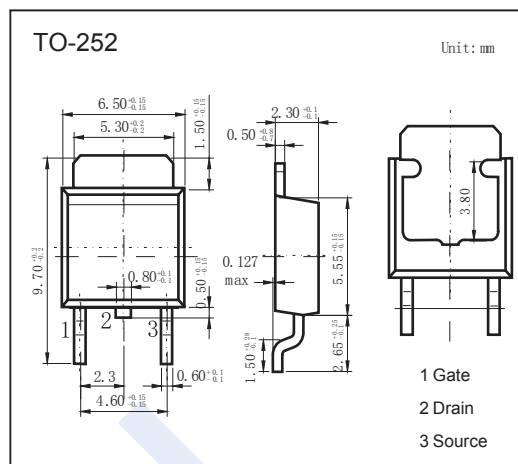
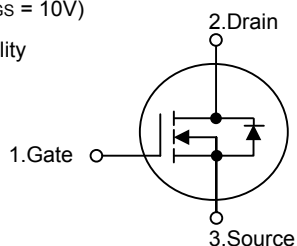


N-Channel MOSFET

NDT1N70

■ Features

- $V_{DS} (V) = 700V$
- $I_D = 1.2 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 13.5 \Omega$ ($V_{GS} = 10V$)
- Fast switching capability



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DS}	700	V
Gate-Source Voltage	V _{GS}	± 30	
Continuous Drain Current	I _D	1.2	A
Pulsed Drain Current	I _{DM}	4.8	
Avalanche Current (Note.1)	I _{AR}	1.2	
Avalanche Energy Single Pulsed (Note.2) Repetitive (Note.1)	E _{AS}	50	mJ
	E _{AR}	4	
Peak Diode Recovery dv/dt (Note.3)	dv/dt	4.5	V/ns
Power Dissipation	P _D	3	W
Thermal Resistance.Junction- to-Ambient	R _{thJA}	79	°C/W
Thermal Resistance.Junction- to-Case	R _{thJC}	29	
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to 150	

Note.1: Repetitive Rating: Pulse width limited by maximum junction temperature

Note.2: $L = 60mH$, $I_{AS} = 1A$, $V_{DD} = 50V$, $R_G = 25\Omega$, Starting $T_J = 25^\circ C$

Note.3: $I_{SD} \leq 1.2A$, $di/dt \leq 200A/\mu s$, $V_{DD} \leq BV_{DSS}$, Starting $T_J = 25^\circ C$

N-Channel MOSFET

NDT1N70

■ 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	700			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =700V, V _{GS} =0V			10	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±30V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	2		4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =0.6 A		9.3	13.5	Ω
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		120	150	pF
Output Capacitance	C _{oss}			20	25	
Reverse Transfer Capacitance	C _{rss}			3	4	
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =560V, I _D =1.2A(Note.1,2)		5	6	nC
Gate Source Charge	Q _{gs}			1		
Gate Drain Charge	Q _{gd}			2.6		
Turn-On DelayTime	t _{d(on)}	V _{DS} =350V, I _D =1.2A, R _G =50 Ω (Note.1,2)		5	20	ns
Turn-On Rise Time	t _r			25	60	
Turn-Off DelayTime	t _{d(off)}			7	25	
Turn-Off Fall Time	t _f			25	60	
Body Diode Reverse Recovery Time	t _{rr}	I _F = 1.2A, di/dt= 100A/ μs, V _{GS} =0V		160		nC
Body Diode Reverse Recovery Charge	Q _{rr}			0.3		
Maximum Body-Diode Continuous Current	I _S				1.2	A
Pulsed Drain-Source Diode Forward Current	I _{SM}				4.8	
Diode Forward Voltage	V _{SD}	I _S =1.2A, V _{GS} =0V			1.4	V

Note.1: Pulse Test: Pulse Width ≤300μs, Duty Cycle≤2%

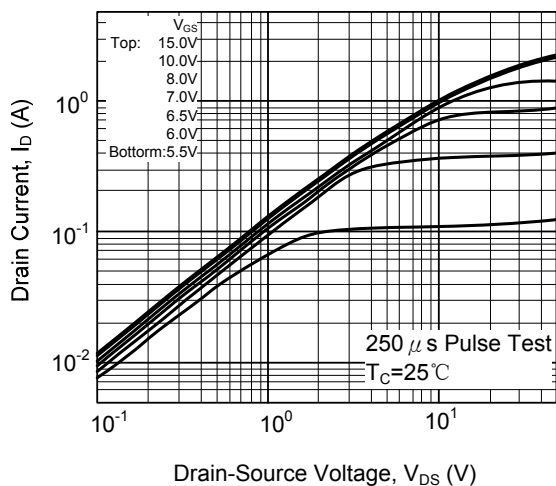
Note.2: Essentially Independent of Operating Temperature

N-Channel MOSFET

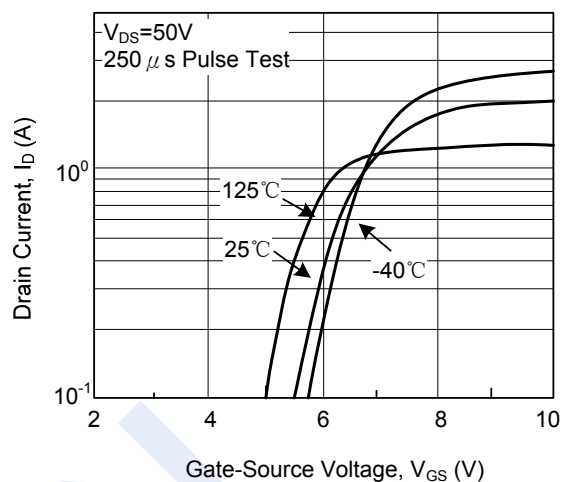
NDT1N70

■ Typical Characteristics

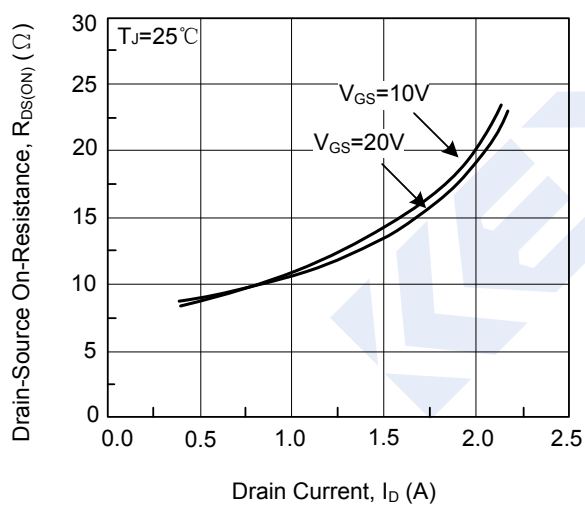
Output Characteristics



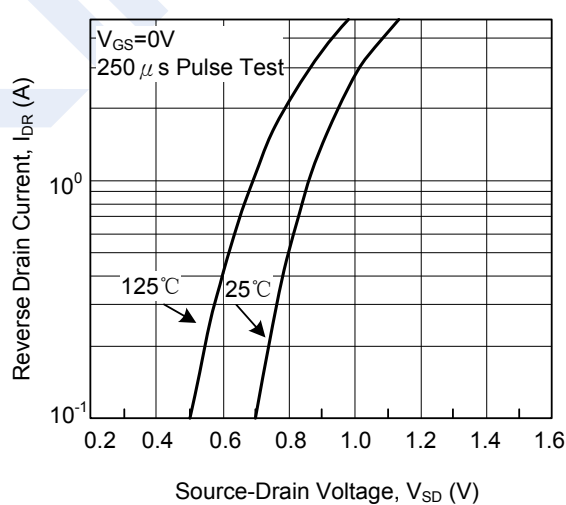
Transfer Characteristics



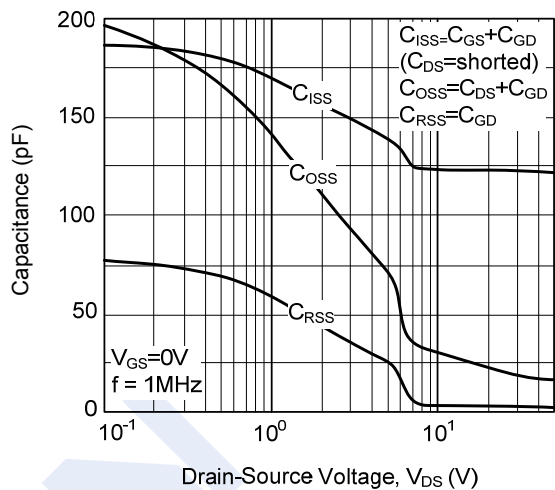
On-Resistance vs. Drain Current



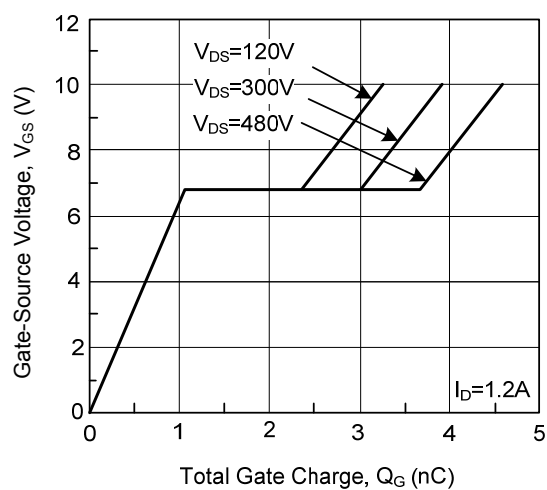
Source-Drain Diode Forward Voltage



Capacitance vs. Drain-Source Voltage



Gate Charge vs. Gate-Source Voltage

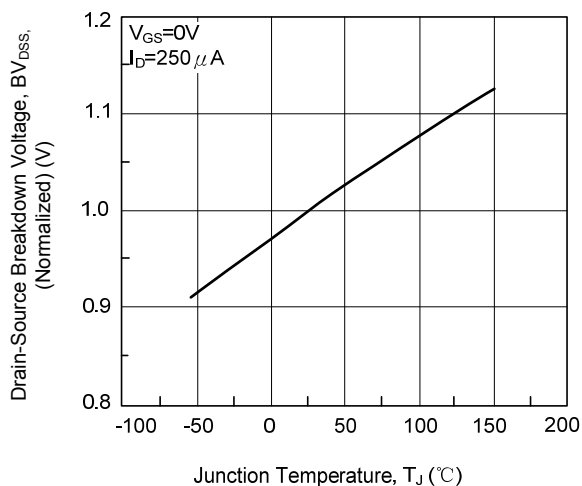


N-Channel MOSFET

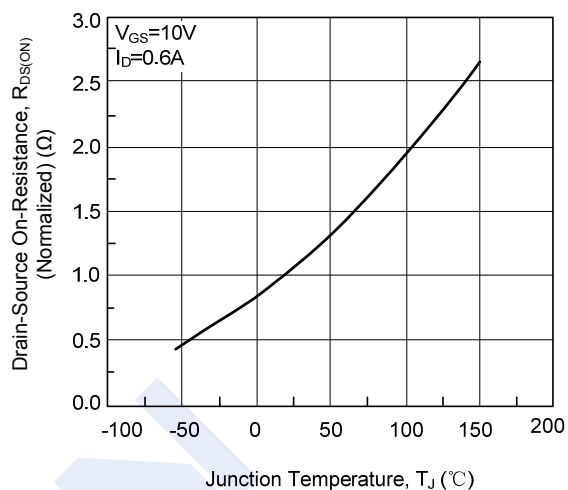
NDT1N70

■ Typical Characteristics

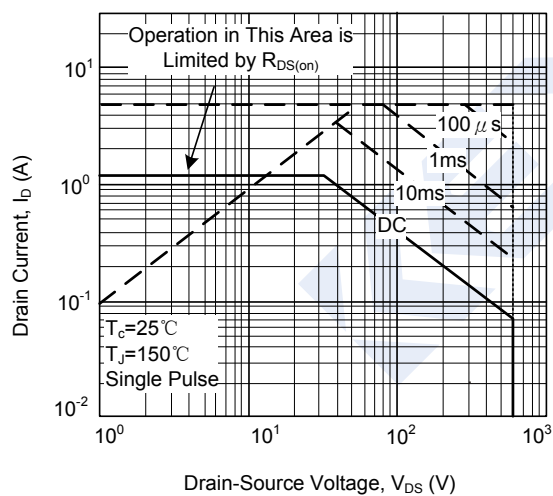
Breakdown Voltage vs. Temperature



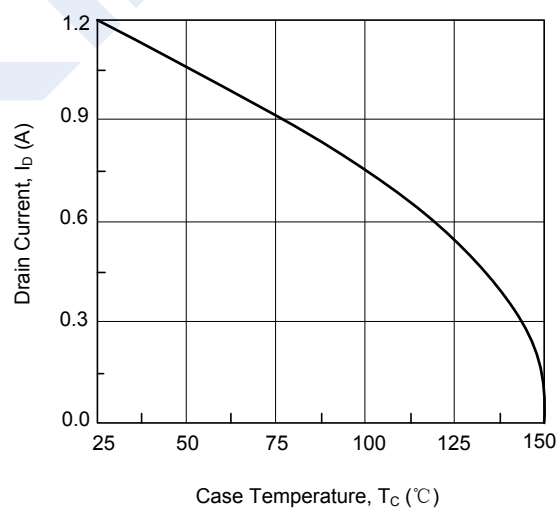
On-Resistance vs. Temperature



Max. Safe Operating Area



Max. Drain Current vs. Case Temperature



Thermal Response

