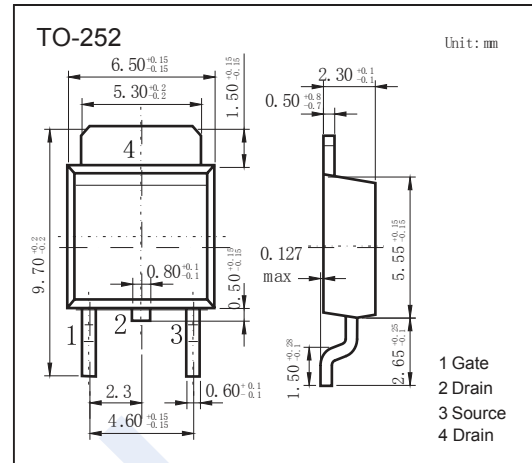
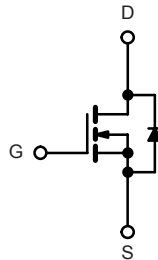


N-Channel MOSFET

NDT06N03

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 60 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 4.1m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 5.9m\Omega (V_{GS} = 4.5V)$



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	30	V
Gate-Source Voltage		V _{GS}	±20	
Continuous Drain Current (Note.1) (Note.1)	T _C =25℃	I _D	60	A
	T _C =70℃		60	
	T _A =25℃		36	
	T _A =70℃		29	
Pulsed Drain Current		I _{DM}	80	
Single Pulse Avalanche Current	L = 0.1 mH	I _{AS}	50	
Single Pulse Avalanche Energy		E _{AS}	125	mJ
Power Dissipation (Note.1) (Note.1)	T _C =25℃	P _D	83	W
	T _C =70℃		53	
	T _A =25℃		5.4	
	T _A =70℃		3.4	
Thermal Resistance.Junction- to-Ambient		R _{thJA}	23	℃/W
Thermal Resistance.Junction- to-Case		R _{thJC}	1.5	
Junction Temperature		T _J	150	℃
Storage Temperature Range		T _{stg}	-55 to 150	

Note.1: Surface Mounted on 1" x 1" FR4 board (t = 10s.)

N-Channel MOSFET

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■ Electrical Characteristics Ta = 25°C

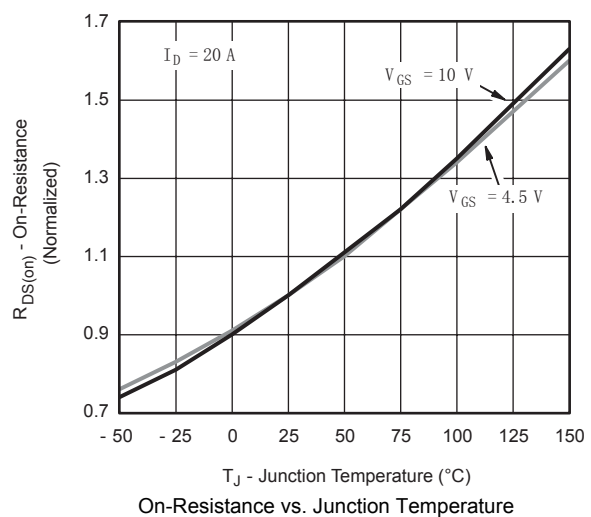
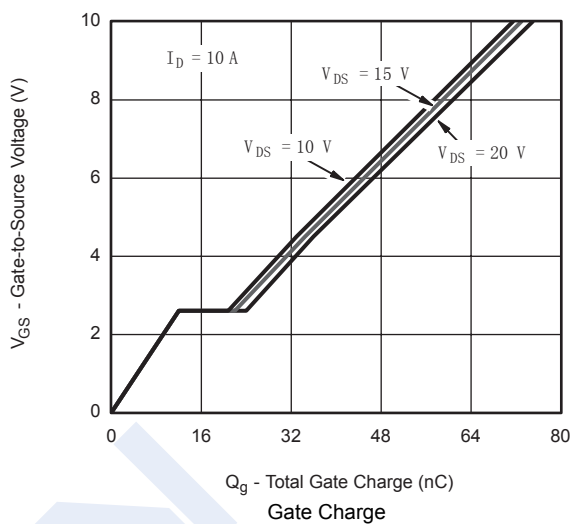
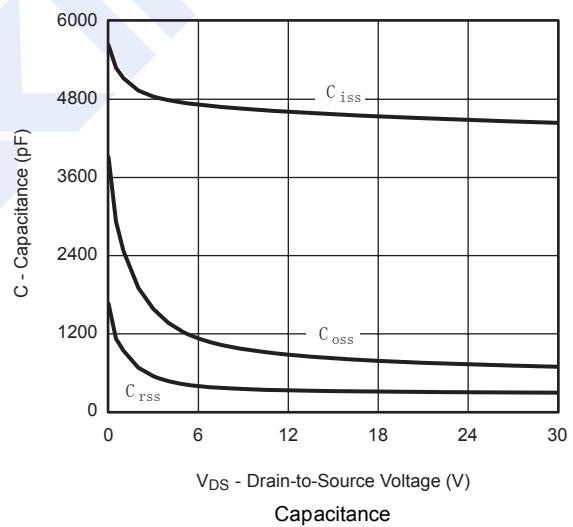
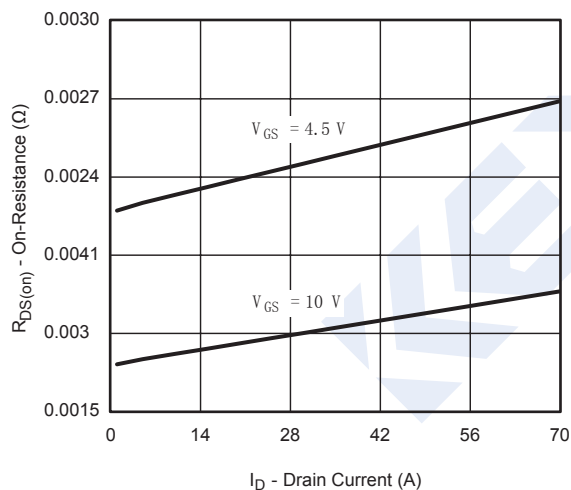
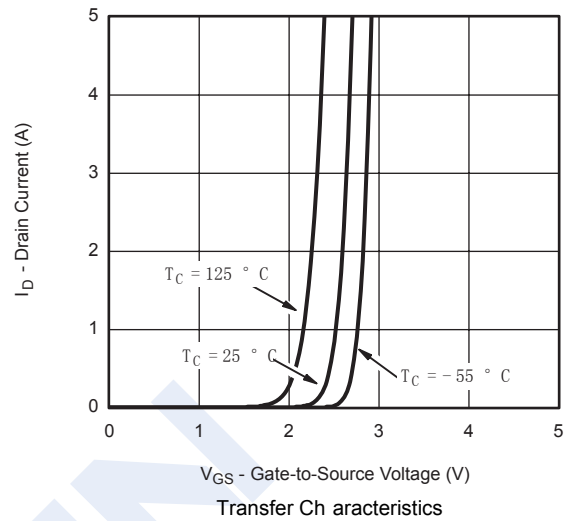
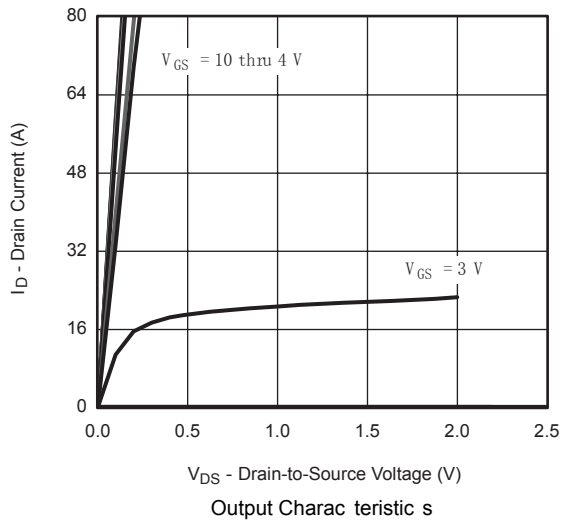
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
		V _{DS} =30V, V _{GS} =0V, T _J =55°C			10	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	1.2		2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A			4.1	mΩ
		V _{GS} =4.5V, I _D =20A			5.9	
On State Drain Current	I _{D(on)}	V _{GS} =10V, V _{DS} =5V	30			A
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =20A		100		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		4590		pF
Output Capacitance	C _{oss}			810		
Reverse Transfer Capacitance	C _{rss}			320		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	0.2		1.6	Ω
Total Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 10 V, I _D = 20 A		74	110	nC
		V _{GS} =4.5V, V _{DS} =15V, I _D =20A		34	51	
Gate Source Charge	Q _{gs}			12		
Gate Drain Charge	Q _{gd}			10		
Turn-On DelayTime	t _{d(on)}	V _{DD} = 15 V, R _L = 1.5 Ω I _D = 10 A, V _{GEN} = 10 V, R _g = 1 Ω		19	35	ns
Turn-On Rise Time	t _r			5	10	
Turn-Off DelayTime	t _{d(off)}			45	85	
Turn-Off Fall Time	t _f			5	10	
Turn-On DelayTime	t _{d(on)}	V _{DD} = 10 V, R _L = 1 Ω I _D = 10 A, V _{GEN} = 4.5 V, R _g = 1 Ω		45	85	
Turn-On Rise Time	t _r			18	45	
Turn-Off DelayTime	t _{d(off)}			60	110	
Turn-Off Fall Time	t _f			30	60	
Body Diode Reverse Recovery Time	t _{rr}	I _F = 10A, di/dt= 100A/μs, T _J = 25°C		33	50	nC
Body Diode Reverse Recovery Charge	Q _{rr}			25	40	
Reverse Recovery Fall Time	t _a			16		nS
Reverse Recovery Rise Time	t _b			17		
Maximum Body-Diode Continuous Current	I _S				60	A
Pulse Diode Forward Current	I _{SM}				80	
Diode Forward Voltage	V _{SD}	I _S =4A, V _{GS} =0V			1.1	V

Note.Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.

N-Channel MOSFET

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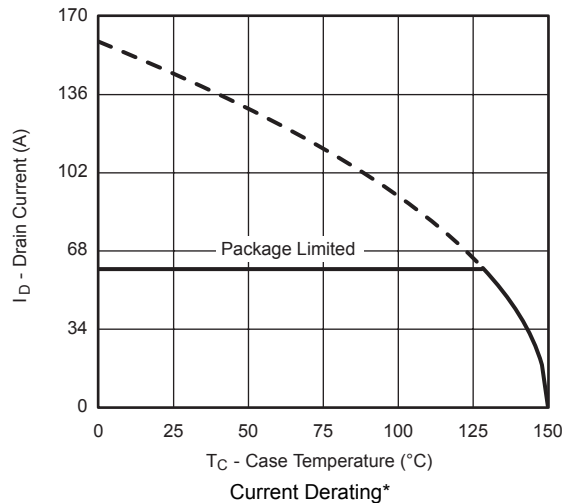
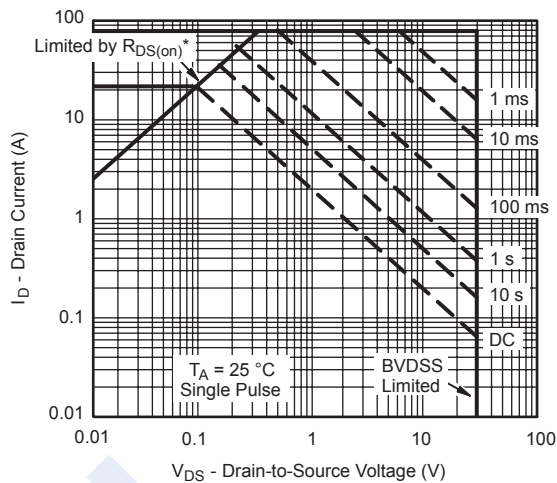
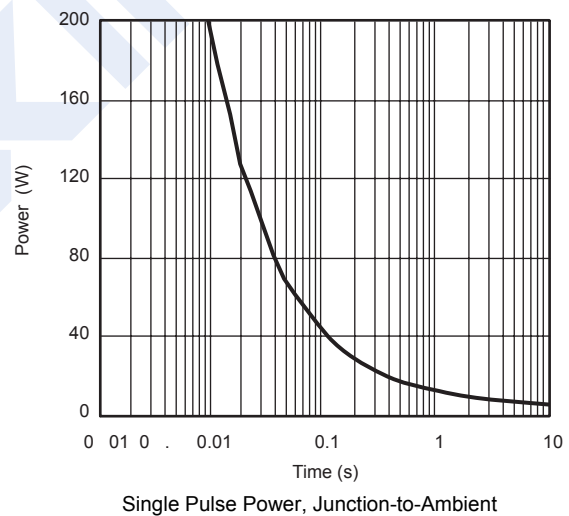
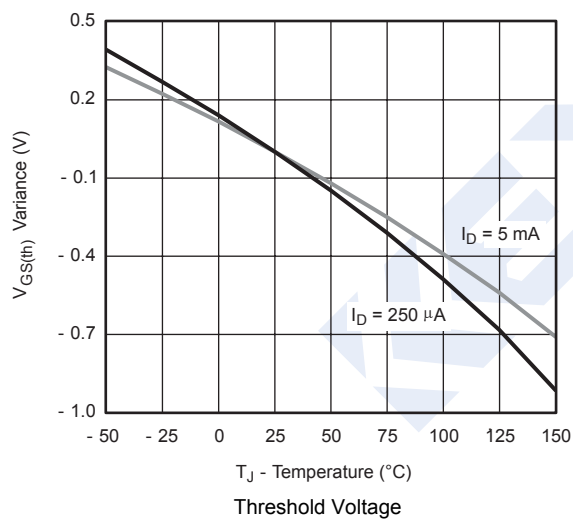
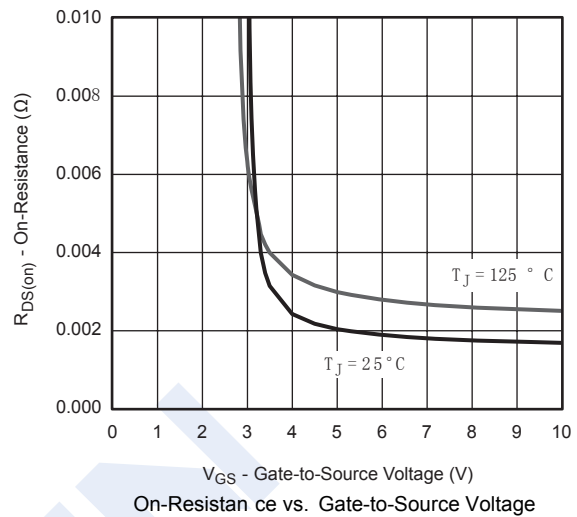
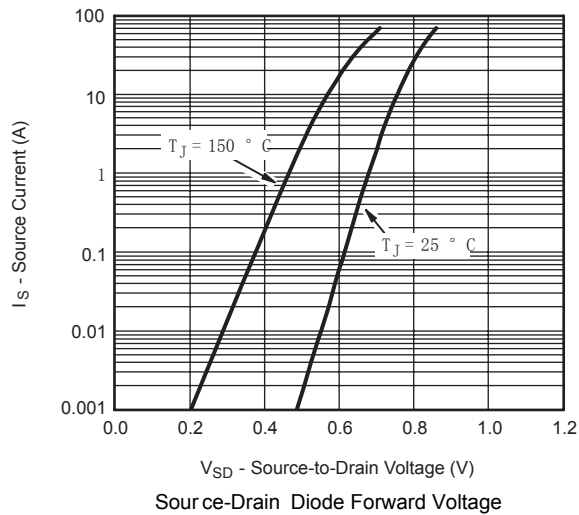
Typical Characteristics



N-Channel MOSFET

NDT06N03

■ Typical Characteristics

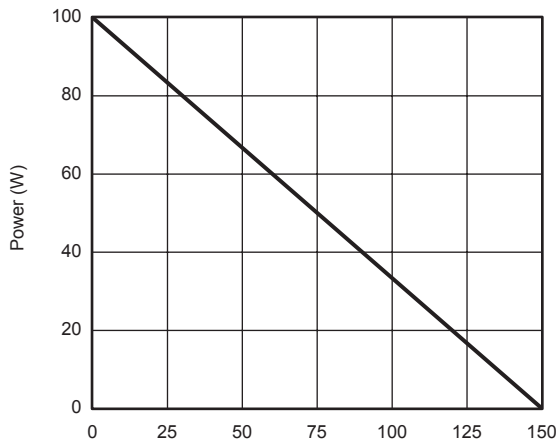


* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified
Safe Operating Area, Junction-to-Ambient

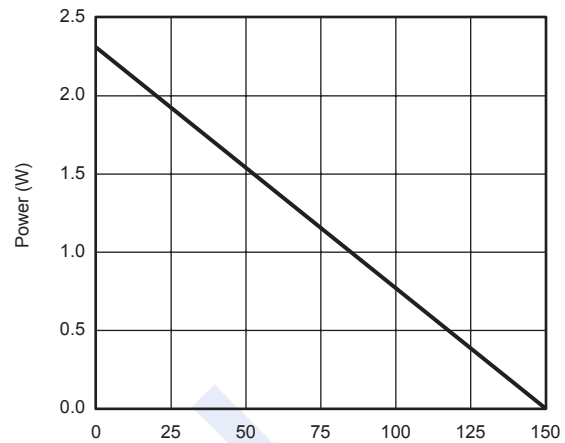
N-Channel MOSFET

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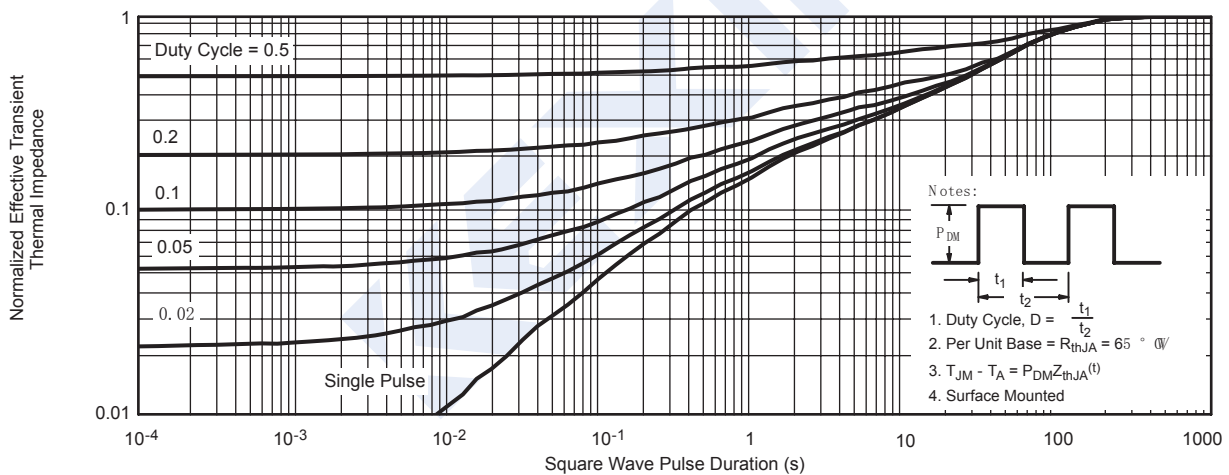
■ Typical Characteristics



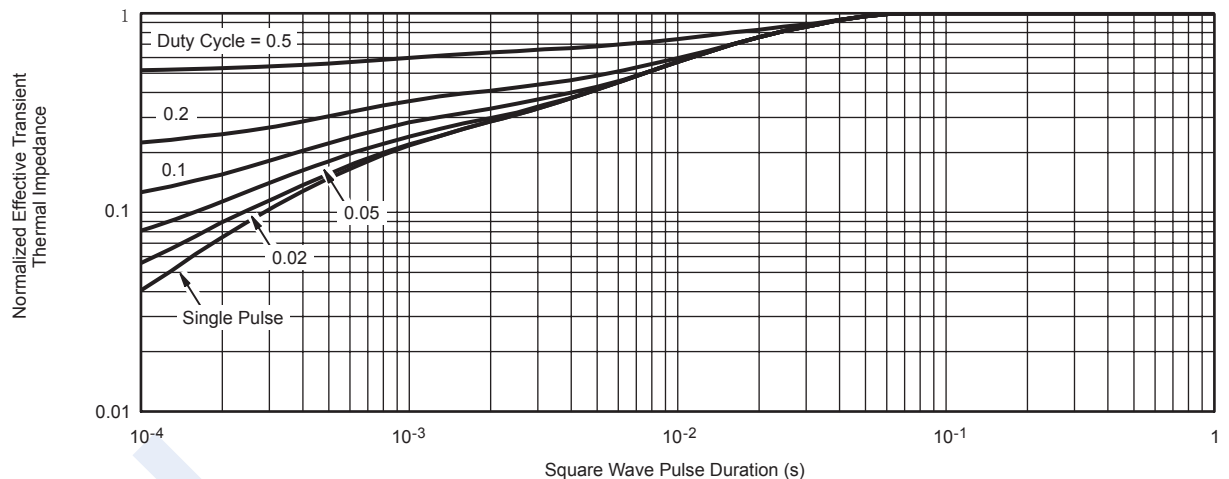
T_C - Case Temperature ($^{\circ}\text{C}$)
Power, Junction-to-Case



T_C - Case Temperature ($^{\circ}\text{C}$)
Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Case