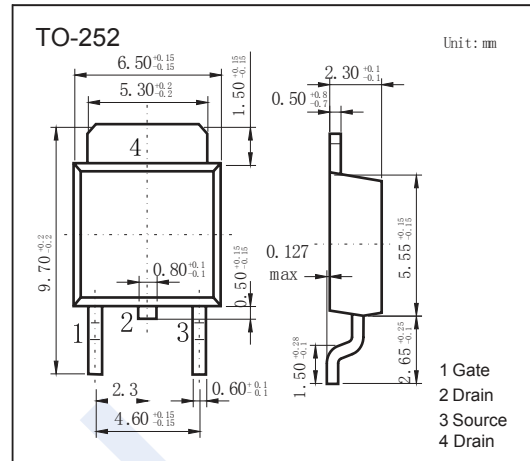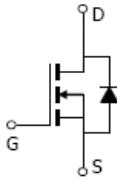# N-Channel MOSFET
NDT2N60

■ **Features**

● $V_{DS (V)}$ = 600V

● I_D = 2 A (V_{GS} = 10V)

● $R_{DS(ON)}$ < 4.5 Ω (V_{GS} = 10V)

● Low Gate Charge

● Low Reverse transfer capacitances

TO-252   Unit: mm

1 Gate
2 Drain
3 Source
4 Drain

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	±30	
Gate source ESD (HBM-C= 100pF, R=1.5kΩ)		V_{ESD}	3000	
Continuous Drain Current		I_D	2	A
	T_C=100℃		1.45	
Pulsed Drain Current		I_{DM}	8	
Avalanche Current		I_{AR}	1.1	
Avalanche Energy ,Repetitive	(Note.1)	E_{AR}	6.4	mJ
Single Pulse Avalanche Energy		E_{AS}	80	
Peak Diode Recovery dv/dt	(Note.2)	dv/dt	5	V/ns
Power Dissipation		P_D	35	W
Derating Factor above 25°C			0.28	W/℃
Thermal Resistance.Junction- to-Ambient		R_{thJA}	62	℃/W
Thermal Resistance.Junction- to-Lead		R_{thJL}	3.57	
Junction Temperature		T_J	150	℃
MaximumTemperature for Soldering		T_L	300	
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1:L=10mH, I_D=4A, Start T_J=25℃

Note.2:I_{SD} =2A,di/dt ≤100A/us,V_{DD}≤BV_{DS}, Start T_J=25℃

N-Channel MOSFET
NDT2N60

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	600			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V, V_{GS}=0V			1	uA
		V_{DS}=480V, V_{GS}=0V, Ta =125℃			100	
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=250uA	2		4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=1A			4.5	Ω
Forward Transconductance	g_{FS}	V_{DS}=15V, I_D=1A		1.8		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz		280		pF
Output Capacitance	C_{oss}			31		
Reverse Transfer Capacitance	C_{rss}			5.4		
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=300V, I_D=2A		8.5		nC
Gate Source Charge	Q_{gs}			1.5		
Gate Drain Charge	Q_{gd}			4		
Turn-On DelayTime	$t_{d(on)}$	V_{DS}=300V,I_D=2A,R_{GEN}=9.1Ω		7		ns
Turn-On Rise Time	t_r			5		
Turn-Off DelayTime	$t_{d(off)}$			26		
Turn-Off Fall Time	t_f			10.5		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 2A, dI/dt= 100A/us ,T_J=25℃		407		
Body Diode Reverse Recovery Charge	Q_{rr}			1152		nC
Maximum Body-Diode Continuous Current	I_s				2	A
Maximum Pulsed Current (Body Diode)	I_{SM}				8	
Diode Forward Voltage	V_{SD}	I_s=2A,V_{GS}=0V			1.5	V

Note.Pulse width tp≤380μs,δ≤2%

N-Channel MOSFET
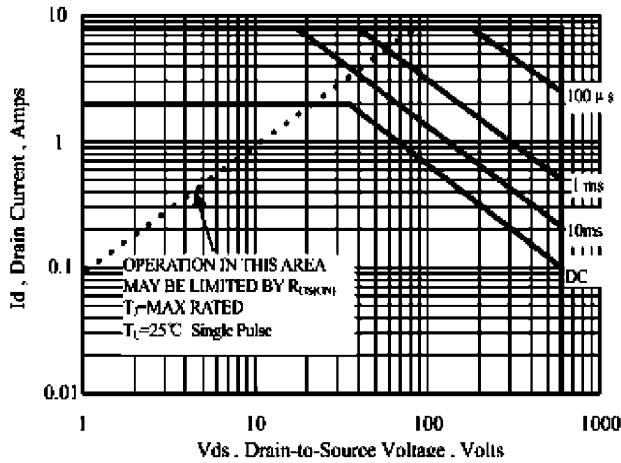## NDT2N60

■ Typical Characterisitics

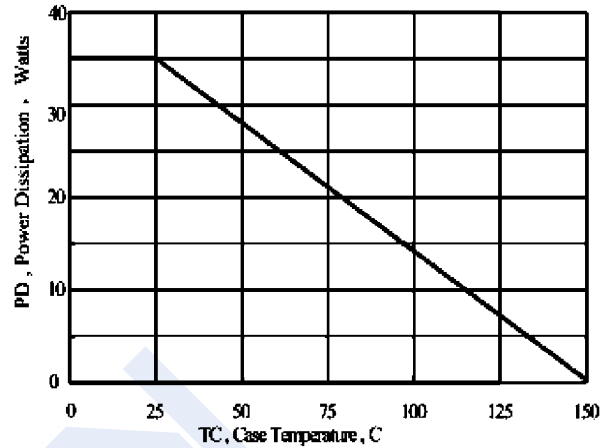Figure 1 Maximum Forward Bias Safe Operating Area

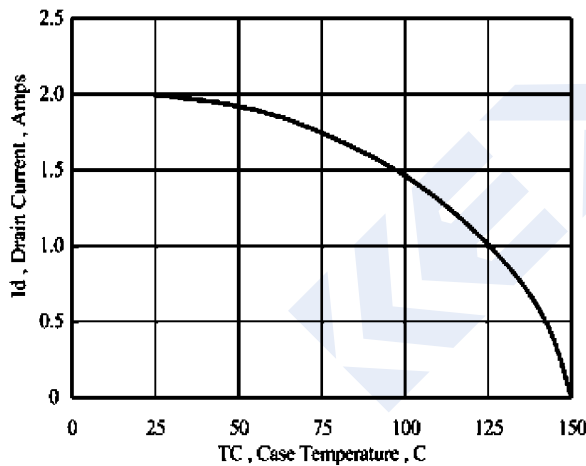Figure 2 Maximum Power Dissipation vs Case Temperature
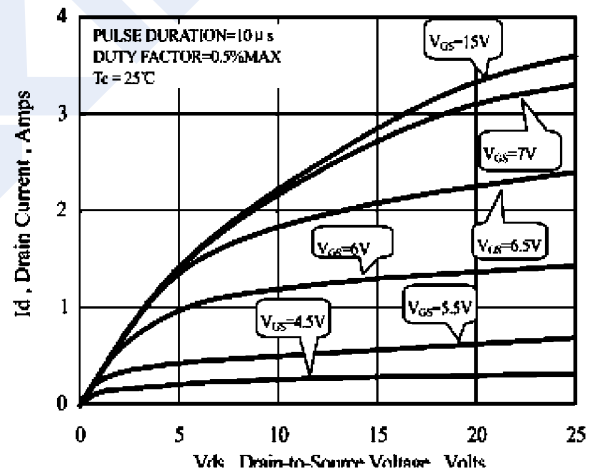

Figure 3 Maximum Continuous Drain Current vs Case Temperature
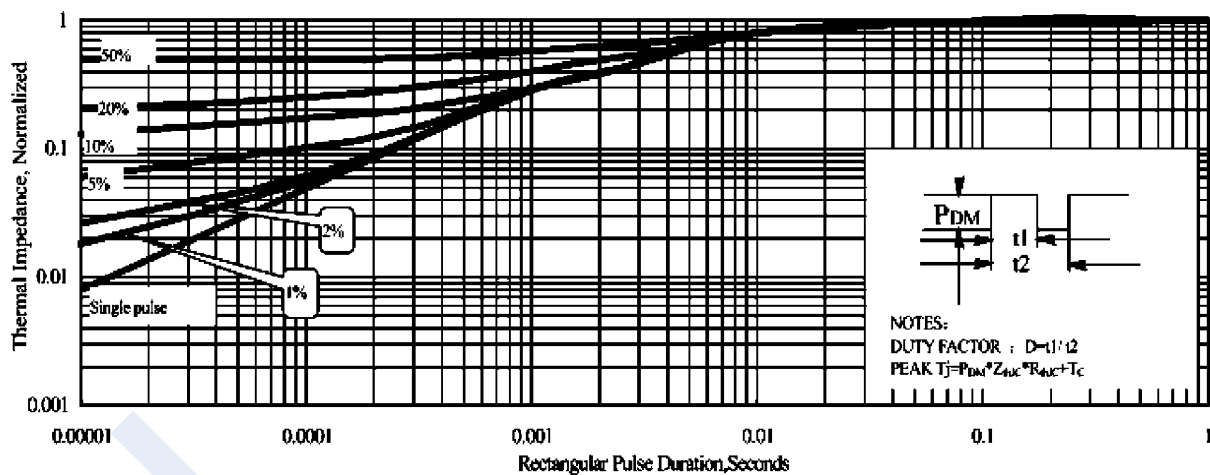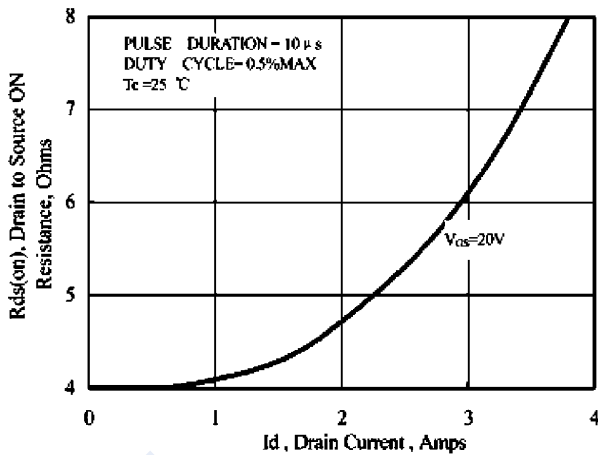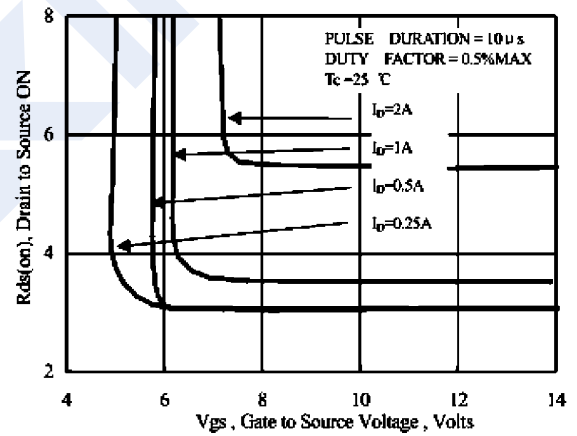

Figure 4 Typical Output Characteristics

Figure 5 Maximum Effective Thermal Imnendance . Junction to Case

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■ Typical Characterisitics

Figure 6   Maximum Peak Current Capability

Figure   7   Typical Transfer Characteristics

Figure   8   Typical Drain to Source ON Resistance vs Gate Voltage and Drain Current

Figure   9   Typical Drain to Source ON Resistance vs Drain Current

Figure   10   Typical Drian to Source on Resistance vs Junction Temperature
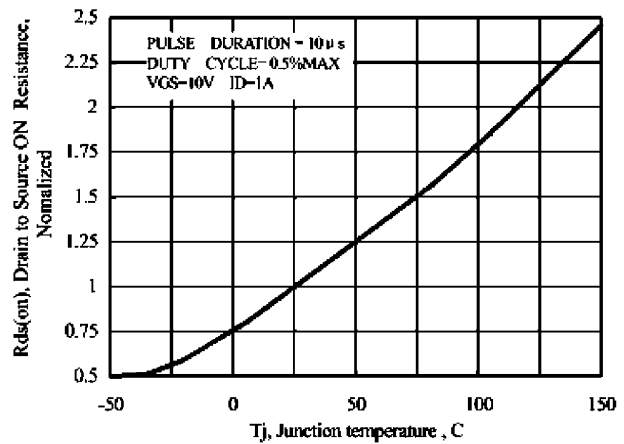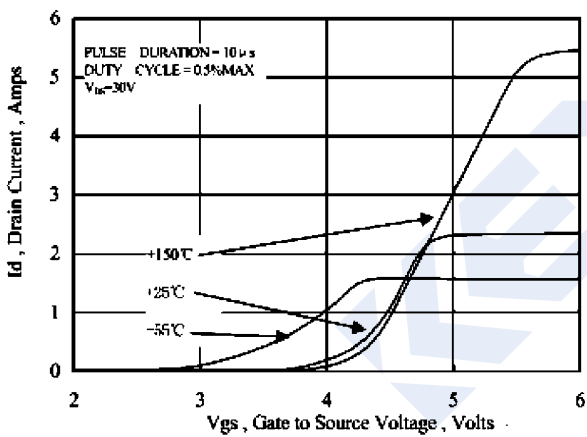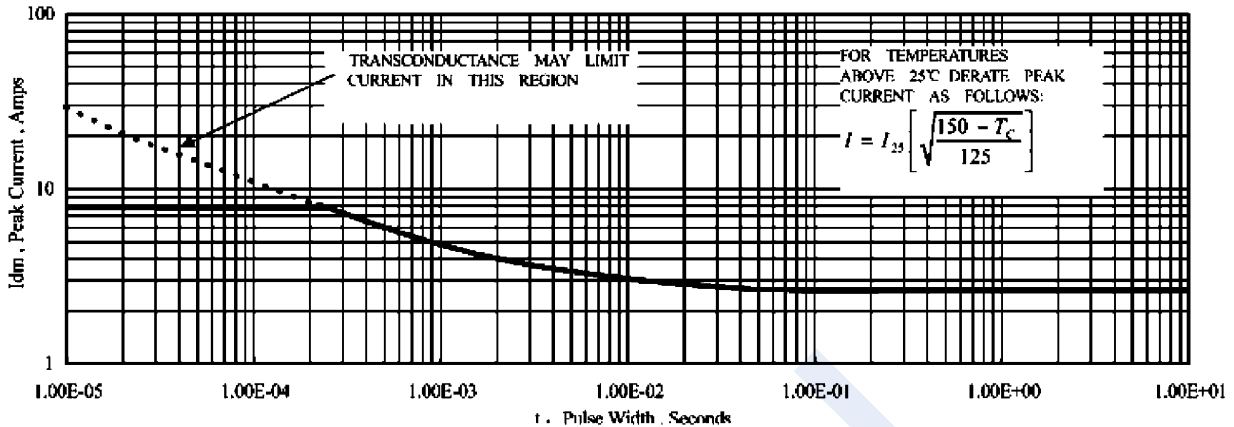
N-Channel MOSFET
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■ Typical Characterisitics
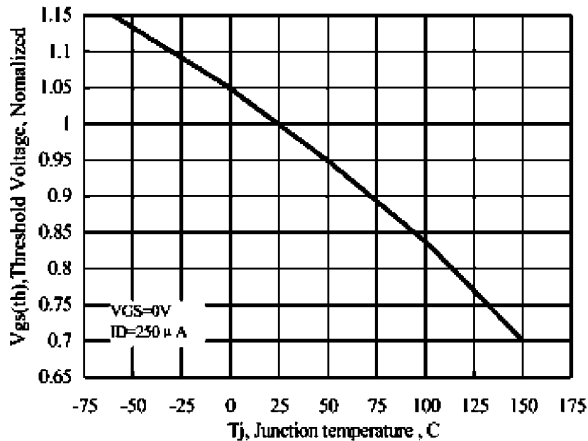
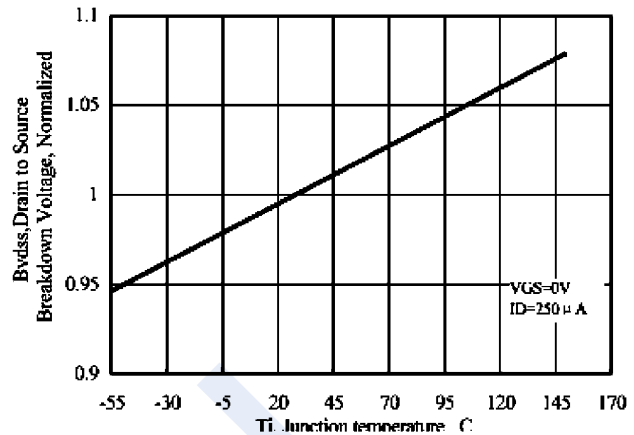Figure 11 Typical Theshold Voltage vs Junction Temperature

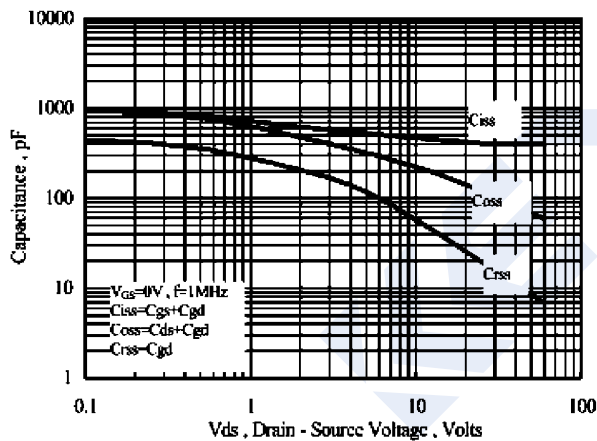Figure 12 Typical Breakdown Voltage vs Junction Temperature

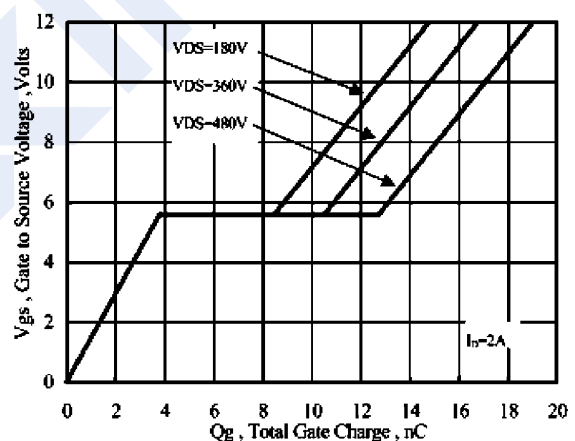Figure 13 Typical Capacitance vs Drain to Source Voltage

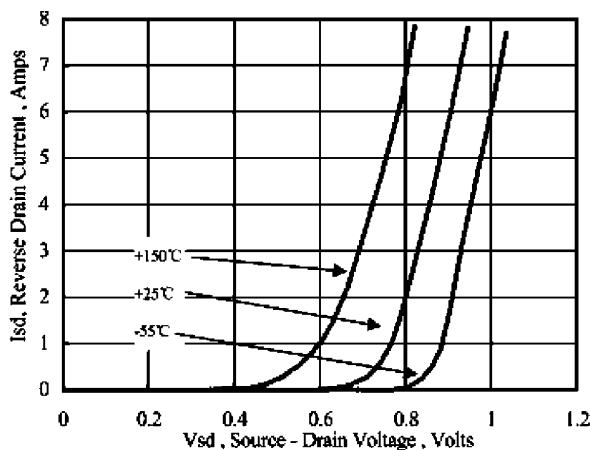Figure 14 Typical Gate Charge vs Gate to Source Voltage
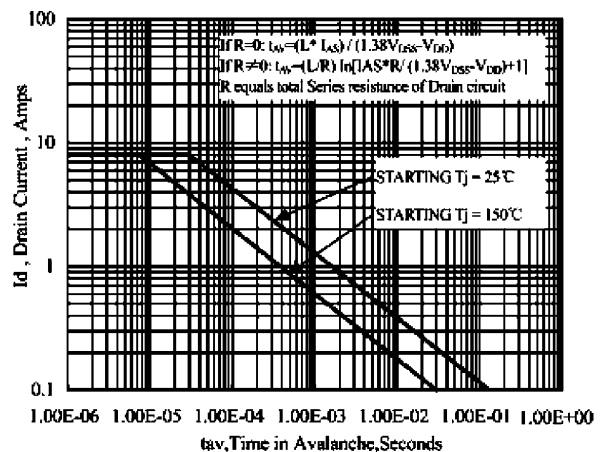

Figure 15 Typical Body Diode Transfer Characteristics

Figure 16 Unclamped Inductive Switching Capability