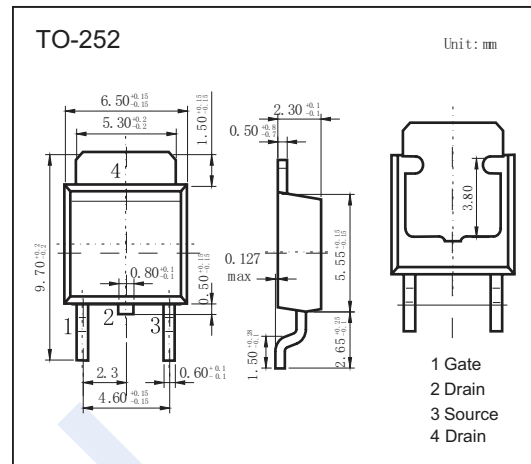
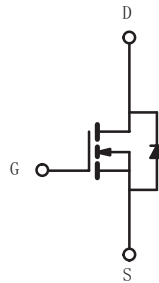


N-Channel MOSFET

NDT25N15

■ Features

- $V_{DS} (V) = 150V$
- $I_D = 25 A @ V_{GS} = 10V$
- $I_D = 23 A @ V_{GS} = 6V$
- $R_{DS(ON)} < 0.052\Omega @ V_{GS} = 10V$
- $R_{DS(ON)} < 0.060\Omega @ V_{GS} = 6V$
- 175 °C Junction Temperature
- PWM Optimized

■ Absolute Maximum Ratings ($T_A = 25^\circ C$, unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$T_C = 25^\circ C$	25
		$T_C = 125^\circ C$	14.5
Pulsed Drain Current (Note 2)	I_{DM}	50	A
Continuous Source Current (Diode Conduction)	I_S	25	A
Avalanche Current	I_{AR}	25	A
Repetitive Avalanche Energy (Duty Cycle $\leq 1\%$)	$L = 0.1 mH$	E _{AR}	31
Power Dissipation	P_D	$T_C = 25^\circ C$	136 ^b
		$T_A = 25^\circ C$	3 ^a
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10 sec$	18
		Steady State	50
Thermal Resistance.Junction- to-Case	R_{thJC}	1.1	$^\circ C/W$
Junction Temperature	T_J	175	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 175	$^\circ C$

Notes:

- a.Surface Mounted on 1" x1" FR4 Board.
b.See SOA curve for voltage derating.

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■ Electrical Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	150			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=150\text{V}$, $V_{GS}=0\text{V}$			1	μA
		$V_{DS}=150\text{V}$, $V_{GS}=0\text{V}$, $T_C=125^\circ\text{C}$			50	
		$V_{DS}=150\text{V}$, $V_{GS}=0\text{V}$, $T_C=175^\circ\text{C}$			250	
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	2		4	V
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS}=5\text{V}$, $V_{GS}=10\text{V}$	50			A
Static Drain-Source On-Resistance ^b	$R_{DS(on)}$	$V_{GS}=10\text{V}$, $I_D=5\text{A}$			0.052	Ω
		$V_{GS}=10\text{V}$, $I_D=5\text{A}$, $T_J = 125^\circ\text{C}$			0.109	
		$V_{GS}=10\text{V}$, $I_D=5\text{A}$, $T_J = 175^\circ\text{C}$			0.145	
		$V_{GS}=6\text{V}$, $I_D=5\text{A}$			0.060	
Forward Transconductance ^b	g_{fs}	$V_{GS}=15\text{V}$, $I_D = 25\text{A}$		40		S
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=25\text{V}$, $f=1\text{MHz}$		1725		pF
Output Capacitance	C_{oss}			216		
Reverse Transfer Capacitance	C_{rss}			100		
Total Gate Charge ^c	Q_g	$V_{DS}=75\text{V}$, $I_D=25\text{A}$, $V_{GS}=10\text{V}$		33	40	nC
Gate Source Charge ^c	Q_{gs}			9		
Gate Drain Charge ^c	Q_{gd}			12		
Gate Resistance	R_g		1		3	Ω
Turn-On DelayTime ^c	$t_{d(on)}$	$V_{DD}=50\text{V}$, $R_L = 3\Omega$ $I_D \cong 25\text{A}$, $V_{GEN} = 10\text{V}$, $R_g = 2.5\Omega$		15	25	ns
Turn-On Rise Time ^c	t_r			70	100	
Turn-Off DelayTime ^c	$t_{d(off)}$			25	40	
Turn-Off Fall Time ^c	t_f			40	60	
Body Diode Reverse Recovery Time	t_{rr}	$I_F=25\text{A}$, $di/dt=100\text{A}/\mu\text{s}$		95	140	
Source Current Pulsed	I_{SM}				50	A
Diode Forward Voltage ^b	V_{SD}	$I_F=25\text{A}$, $V_{GS}=0\text{V}$			1.5	V

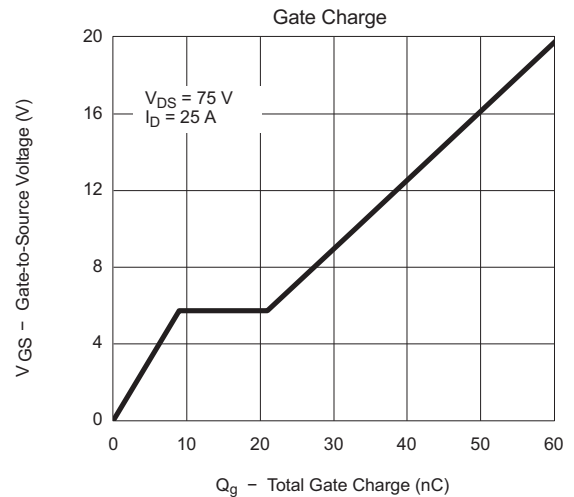
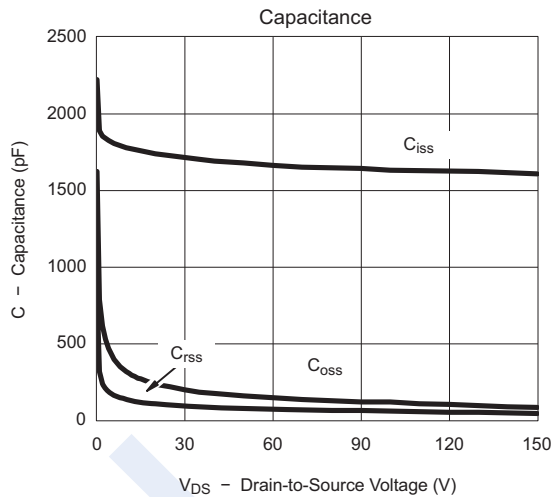
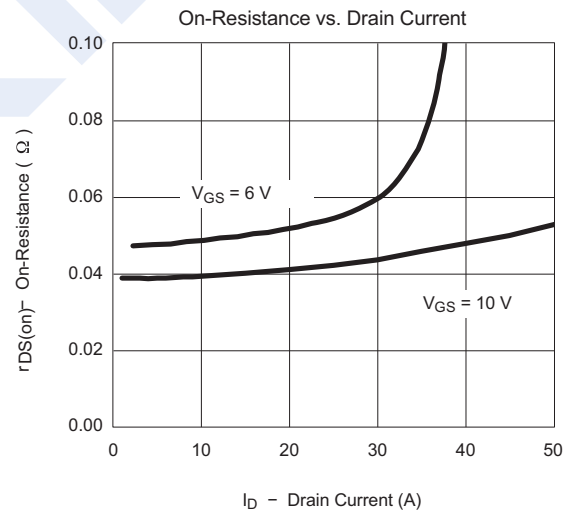
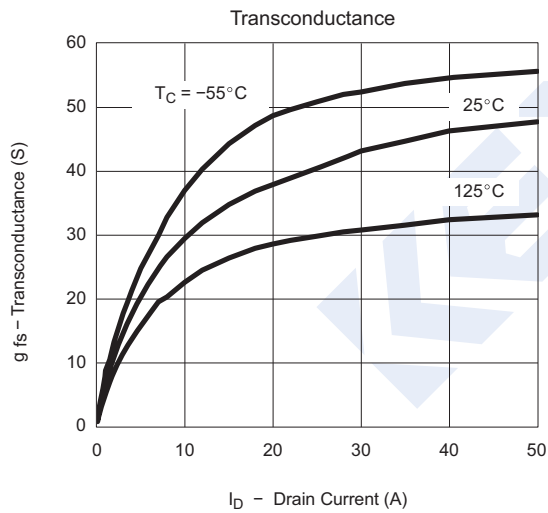
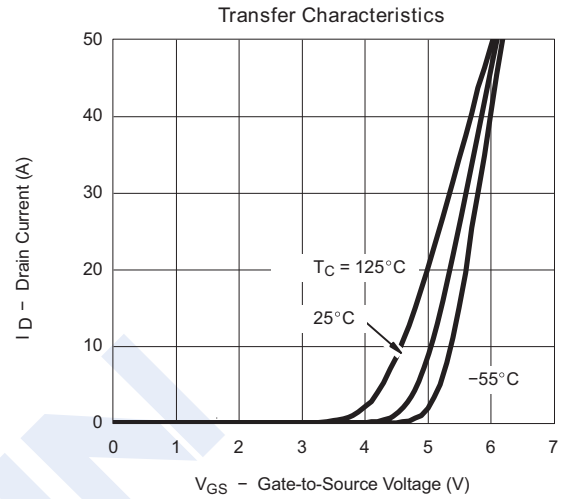
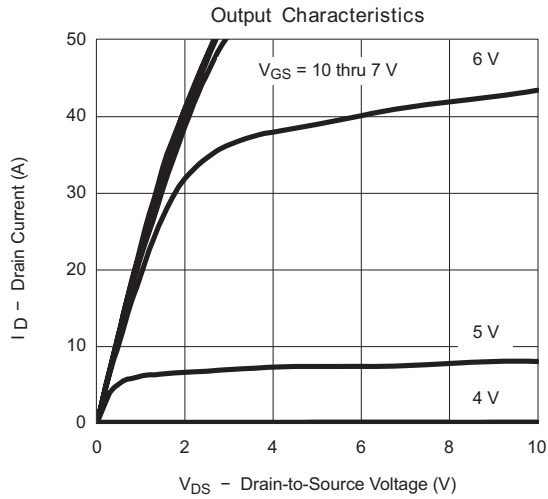
Notes:

- a. Guaranteed by design, not subject to production testing.
b. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.
c. Independent of operating temperature.

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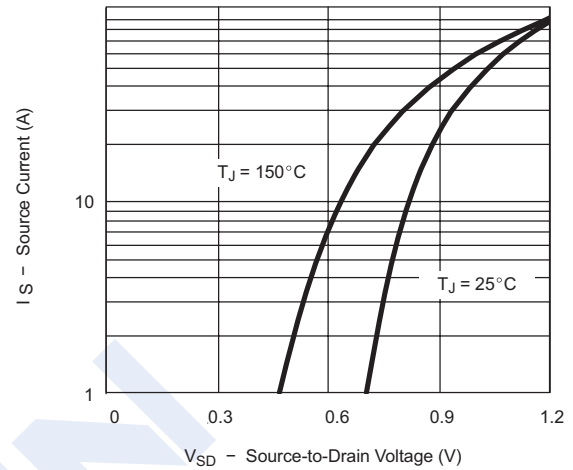
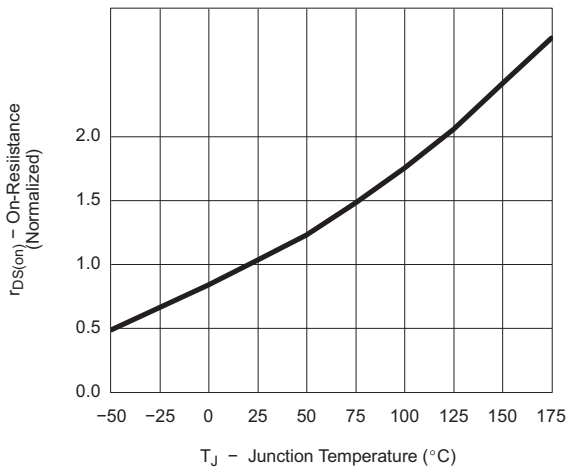
■ Typical Characteristics (25°C Unless Noted)



N-Channel MOSFET

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■ Typical Characteristics (25°C Unless Noted)



THERMAL RATINGS

