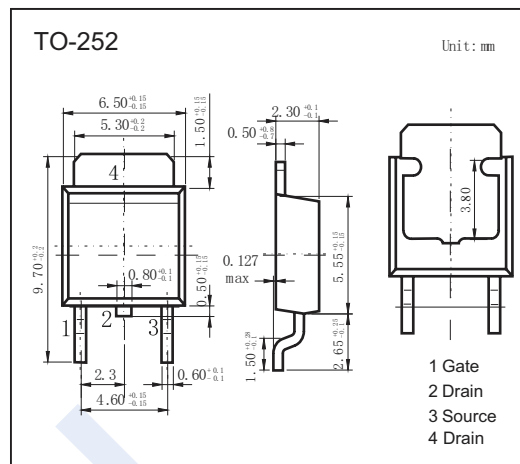
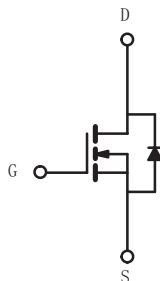


N-Channel MOSFET

NDT25N15

■ Features

- $V_{DS} (V) = 150V$
- $I_D = 25 A @ V_{GS} = 10V$
- $I_D = 23 A @ V_{GS} = 6V$
- $R_{DS(ON)} < 0.052\Omega @ V_{GS} = 10V$
- $R_{DS(ON)} < 0.060\Omega @ V_{GS} = 6V$
- $175^\circ C$ 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	
Continuous Drain Current	T _C = 25℃	I _D	25	A
	T _C = 125℃		14.5	
Pulsed Drain Current (Note 2)		I _{DM}	50	
Continuous Source Current (Diode Conduction)		I _S	25	
Avalanche Current		I _{AR}	25	
Repetitive Avalanche Energy (Duty Cycle ≤ 1%)	L = 0.1 mH	E _{AR}	31	mJ
Power Dissipation	T _C = 25℃	P _D	136 ^b	W
	T _A = 25℃		3 ^a	
Thermal Resistance.Junction- to-Ambient	t ≤ 10 sec	R _{thJA}	18	℃/W
	Steady State		50	
Thermal Resistance.Junction- to-Case		R _{thJC}	1.1	
Junction Temperature		T _J	175	℃
Storage Temperature Range		T _{stg}	-55 to 175	

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.

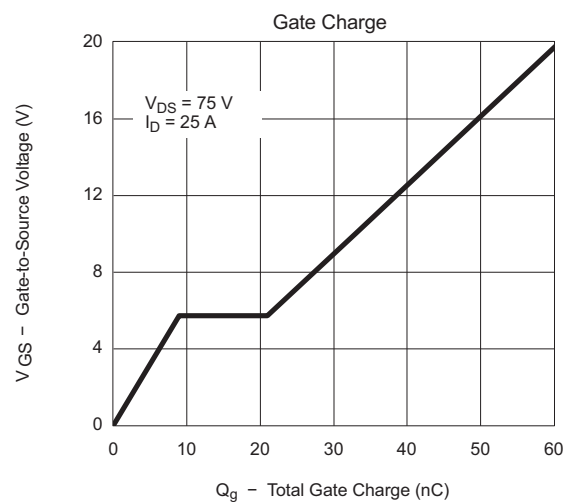
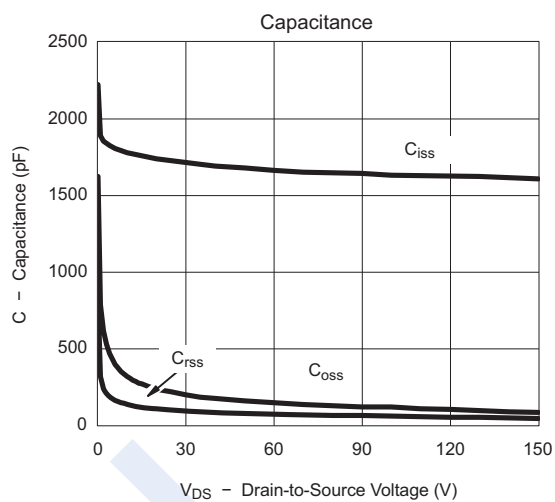
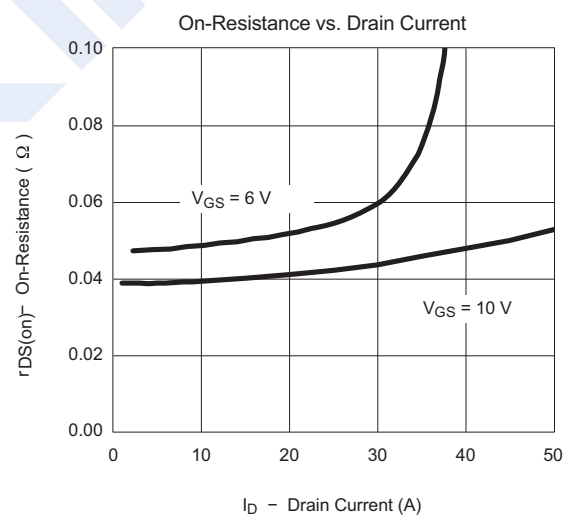
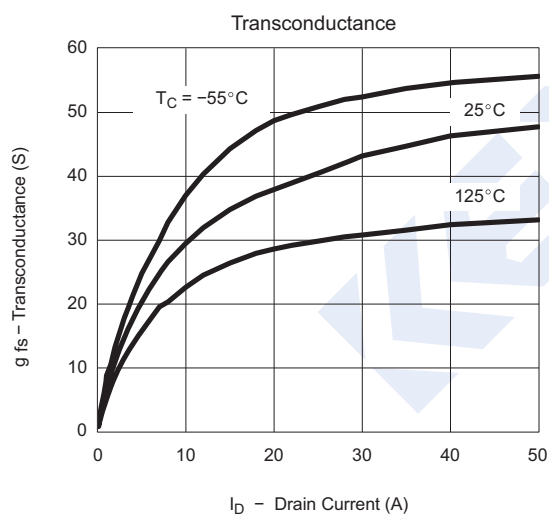
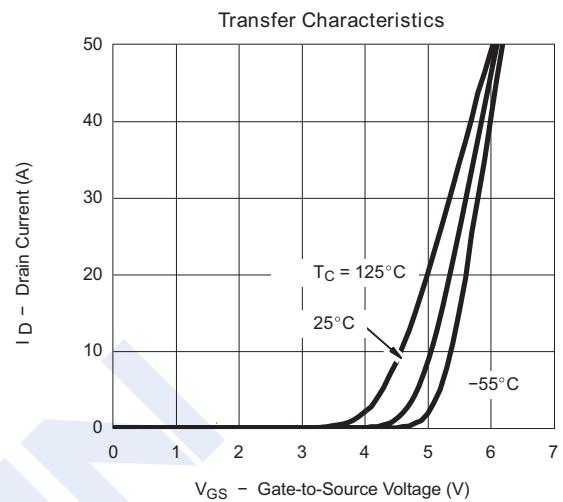
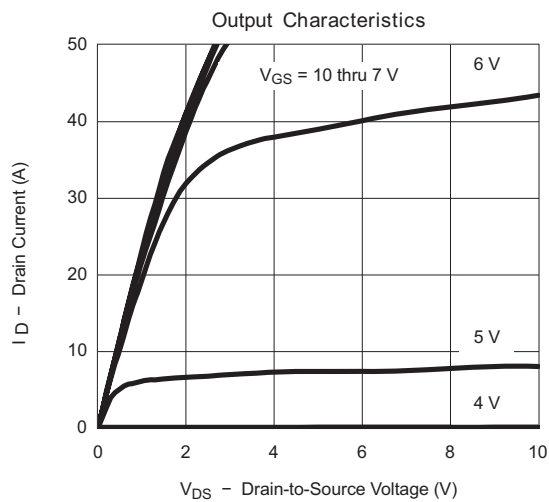
b. Pulse test; pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

c. Independent of operating temperature.

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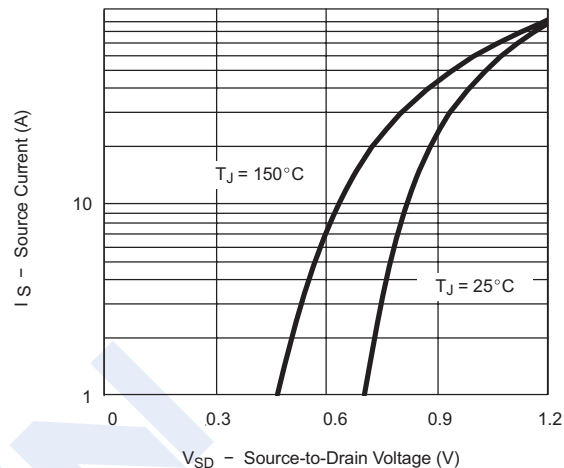
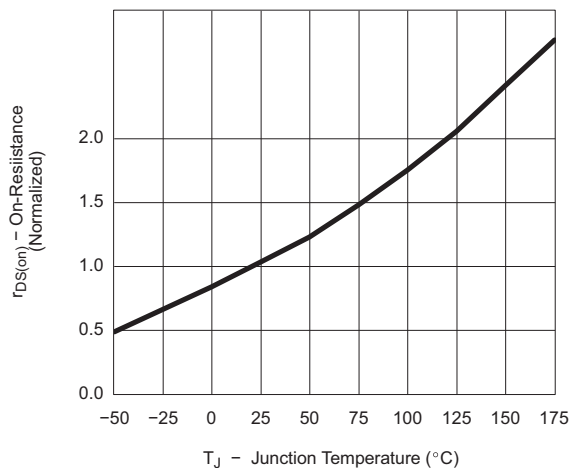
■ Typical Characteristics (25°C Unless Noted)



N-Channel MOSFET

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■ Typical Characteristics (25°C Unless Noted)



THERMAL RATINGS

