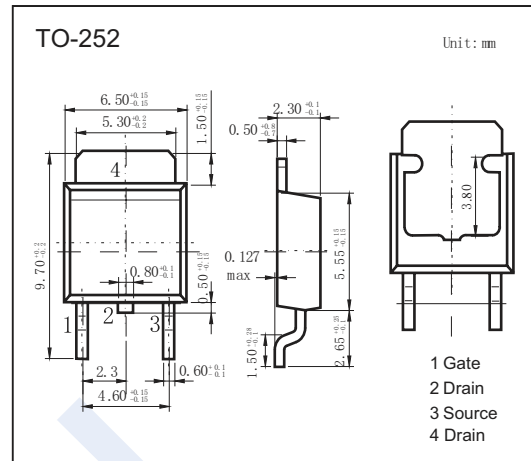
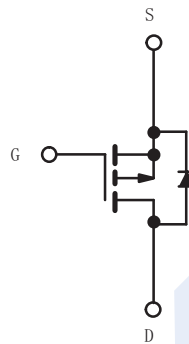


P-Channel MOSFET

NDT8P06

■ Features

- V_{DS} (V) = -60V
- I_D = -8.4 A (V_{GS} = -10V)
- I_D = -7.4 A (V_{GS} = -4.5V)
- $R_{DS(ON)}$ < 0.155 Ω (V_{GS} = -10V)
- $R_{DS(ON)}$ < 0.28 Ω (V_{GS} = -4.5V)

■ Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$, unless otherwise noted)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_c = 25^\circ\text{C}$	I_D	-8.2	A
	$T_c = 100^\circ\text{C}$		-5.2	
Pulsed Drain Current		I_{DM}	-18	
Continuing Source Current (Diode Conduction)		I_S	-8.4	
Avalanche Current		I_{AS}	-12	
Single Pulse Avalanche Energy	$L = 0.1\text{ mH}$	E_{AS}	7.2	mJ
Power Dissipation	$T_c = 25^\circ\text{C}$	P_D	20.8 ^a	W
	$T_A = 25^\circ\text{C}$		1.7 ^b	
Thermal Resistance.Junction- to-Ambient	$t \leq 10\text{ s}$	R_{thJA}	25	$^\circ\text{C/W}$
	Steady State		75	
Thermal Resistance.Junction- to-Case		R_{thJC}	6	
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55 to 150	

Notes:

- a. See SOA curve for voltage derating.
- b. Surface mounted on 1" x 1" FR-4 board.

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

Parameter	Symbol	Test Conditions	Min	Typ ^a	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D = -250\mu\text{A}$, $V_{GS} = 0\text{V}$	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -60\text{V}$, $V_{GS} = 0\text{V}$			-1	μA
		$V_{DS} = -60\text{V}$, $V_{GS} = 0\text{V}$, $T_J = 125^\circ\text{C}$			-50	
		$V_{DS} = -60\text{V}$, $V_{GS} = 0\text{V}$, $T_J = 150^\circ\text{C}$			-150	
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250\mu\text{A}$	-1		-3	V
Static Drain-Source On-Resistance ^b	$R_{DS(on)}$	$V_{GS} = -10\text{V}$, $I_D = -5\text{A}$			0.155	Ω
		$V_{GS} = -10\text{V}$, $I_D = -5\text{A}$, $T_J = 125^\circ\text{C}$			0.28	
		$V_{GS} = -10\text{V}$, $I_D = -5\text{A}$, $T_J = 150^\circ\text{C}$			0.35	
		$V_{GS} = -4.5\text{V}$, $I_D = -2\text{A}$			0.28	
On State Drain Current ^b	$I_{D(on)}$	$V_{GS} = -10\text{V}$, $V_{DS} = -5\text{V}$	-10			A
Forward Transconductance ^b	g_{FS}	$V_{DS} = -15\text{V}$, $I_D = -5\text{A}$		8		S
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = -25\text{V}$, $f = 1\text{MHz}$		450		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			40		
Gate Resistance	R_g	$f = 1\text{MHz}$		8		Ω
Total Gate Charge	Q_g	$V_{GS} = -10\text{V}$, $V_{DS} = -30\text{V}$, $I_D = -8.4\text{A}$		12.5	19	nC
Gate Source Charge	Q_{gs}			2.3		
Gate Drain Charge	Q_{gd}			3.2		
Turn-On Delay Time ^c	$t_{d(on)}$	$V_{DD} = -30\text{V}$, $R_L = 3.57\Omega$, $I_D \leq -8.4\text{A}$, $V_{GEN} = -10\text{V}$, $R_G = 2.5\Omega$			10	ns
Turn-On Rise Time ^c	t_r				25	
Turn-Off Delay Time ^c	$t_{d(off)}$				25	
Turn-Off Fall Time ^c	t_f				12	
Body Diode Reverse Recovery Time	t_{rr}	$I_F = -8\text{A}$, $dI/dt = 100\text{A}/\mu\text{s}$			80	ns
Body Diode Reverse Recovery Charge	Q_{rr}				120	nC
Maximum Body-Diode Pulsed Current	I_{SM}				-20	A
Diode Forward Voltage ^b	V_{SD}	$I_S = -2\text{A}$, $V_{GS} = 0\text{V}$			-1.3	V

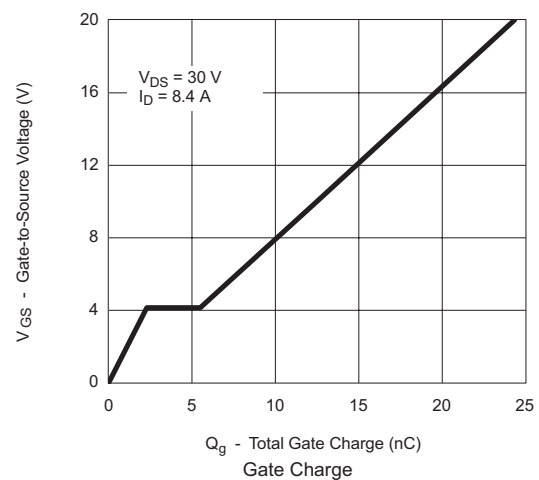
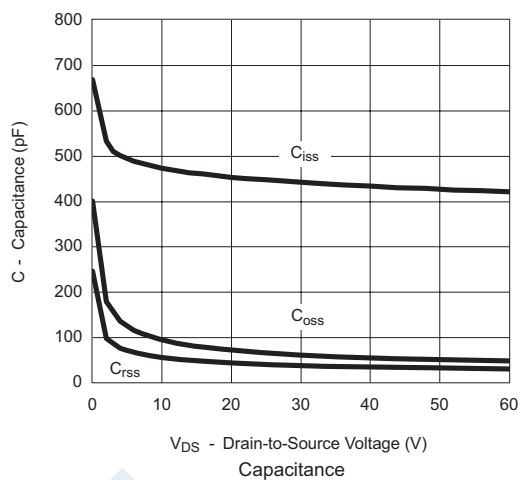
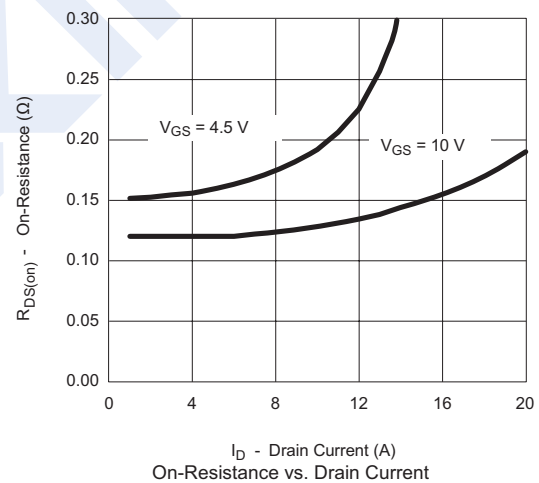
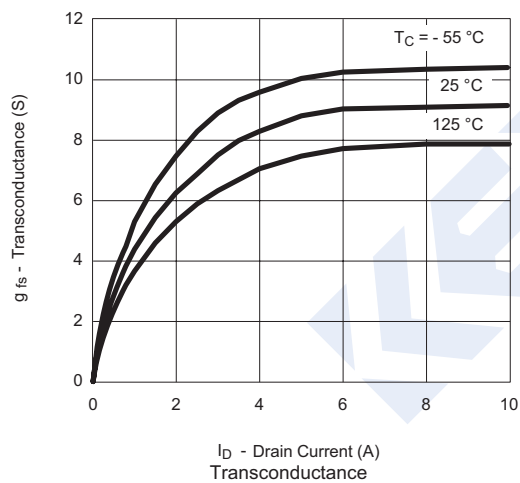
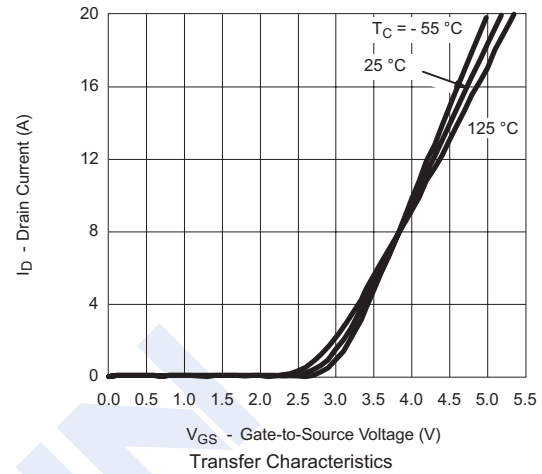
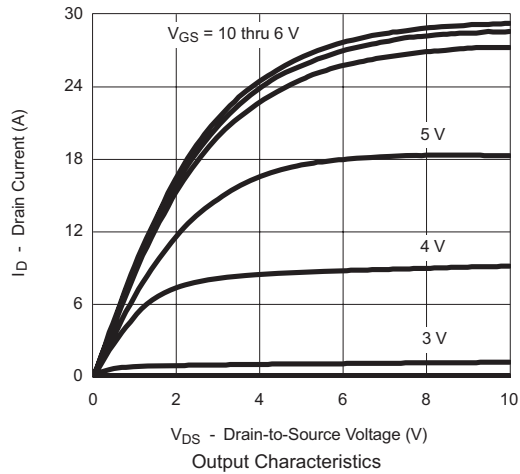
Notes:

- 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.

P-Channel MOSFET

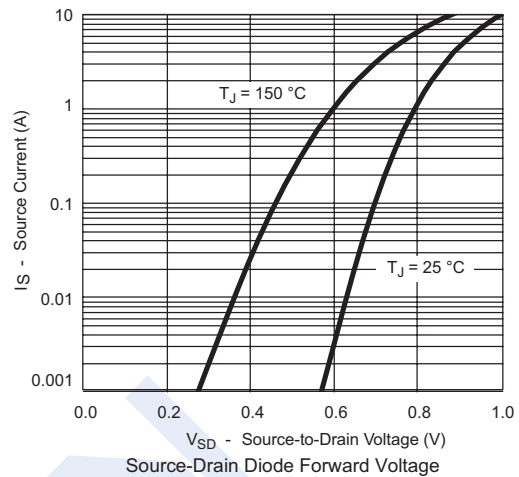
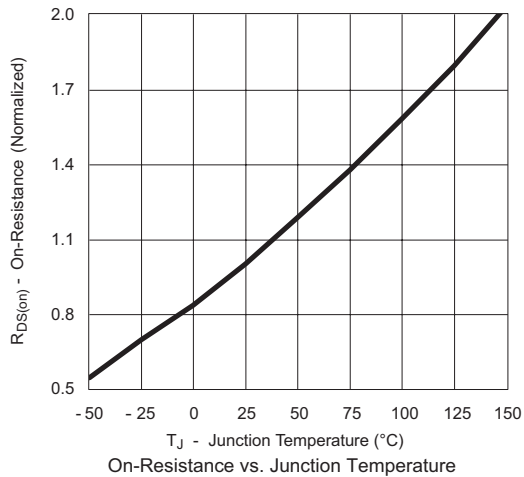
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■ Typical Characteristics



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■ Thermal Ratings

