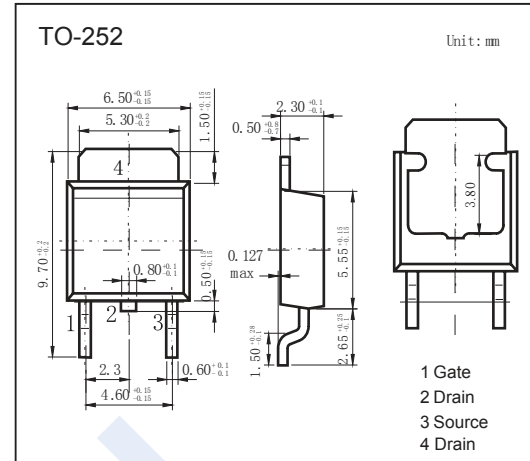
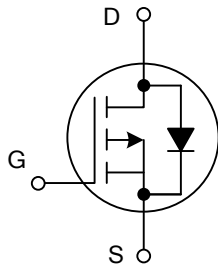


P-Channel MOSFET

NDT12P20

■ Features

- $V_{DS} = -20V$
- $I_D = -10 A$
- $R_{DS(ON)} < 150m\Omega$ ($V_{GS} = -4.5V$)
- $R_{DS(ON)} < 250m\Omega$ ($V_{GS} = -2.5V$)
- Gate Drive Capability: 2.5V



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	-10	A
Pulsed Drain Current	I_{DM}	-24	
Power Dissipation	P_D	25	W
Linear Derating Factor		0.01	$W/^\circ C$
Thermal Resistance.Junction- to-Ambient	R_{thJA}	110	$^\circ C/W$
Thermal Resistance.Junction- to-Case	R_{thJC}	5	
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

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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	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μA	-0.5		-1.2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-2.8A			150	mΩ
		V _{GS} =-2.5V, I _D =-2A			250	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-6V, f=1MHz		300		pF
Output Capacitance	C _{oss}			180		
Reverse Transfer Capacitance	C _{rss}			60		
Total Gate Charge	Q _g	V _{GS} =-5V, V _{DS} =-6V, I _D =-2.8A (Note.1)		6		nC
Gate Source Charge	Q _{gs}			1.5		
Gate Drain Charge	Q _{gd}			0.6		
Turn-On DelayTime	t _{d(on)}	V _{DS} =-6V, V _{GS} =-5V, I _D =-1A R _G =6Ω, R _D =6Ω (Note.1)		25		ns
Turn-On Rise Time	t _r			60		
Turn-Off DelayTime	t _{d(off)}			70		
Turn-Off Fall Time	t _f			60		
Continuous Source Current (Body Diode)	I _S	V _D =V _G =0V, V _S =-1.2V			-10	A
Pulsed Source Current (Body Diode)	I _{SM}				-24	
Diode Forward Voltage	V _{SD}	I _S =-10A, V _{GS} =0V (Note.1)			-1.2	V

Note.1: Pulse width ≤300us, duty cycle ≤2%.

P-Channel MOSFET

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■ Typical Characteristics

