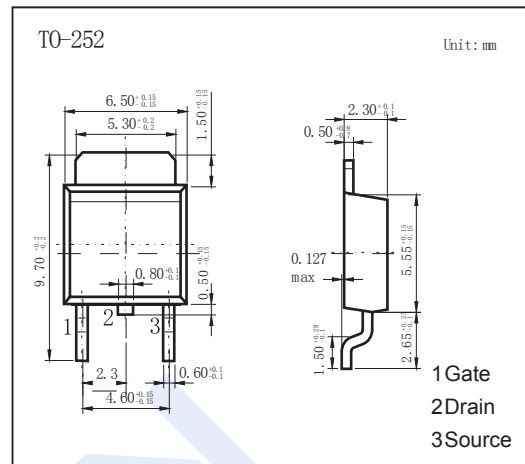
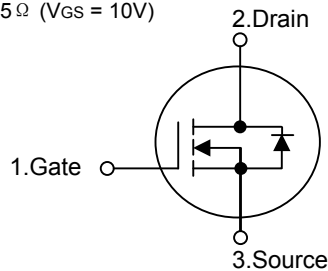


N-Channel Enhancement MOSFET

NDT4N70

■ Features

- $V_{DS} (V) = 700V$
- $I_D = 4.2 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 2.15 \Omega$ ($V_{GS} = 10V$)

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	700	V
Gate-Source Voltage	V_{GS}	± 30	
Continuous Drain Current	I_D	4.2	A
Pulsed Drain Current (Note1)	I_{DM}	17.6	
Avalanche Current (Note1)	I_{AR}	4.2	
Repetitive Pulse Avalanche Energy (Note1)	E_{AR}	10.6	mJ
Single Pulse Avalanche Energy (Note2)	E_{AS}	260	mJ
Peak Diode Recovery dv/dt (Note3)	dv/dt	4.5	V/ns
Power Dissipation	P_D	49	W
Thermal Resistance.Junction- to-Ambient	R_{thJA}	110	$^\circ C/W$
Thermal Resistance.Junction- to-Case	R_{thJC}	2.55	
Junction Temperature	T_J	150	$^\circ C$
Operating Temperature	T_{opr}	-55 to 150	
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1 Repetitive Rating : Pulse width limited by maximum junction temperature

Note.2 $L=26.9mH$, $I_{AS}=4.2A$, $V_{DD}=50V$, $R_g=25\Omega$, Starting $T_J=25^\circ C$

Note.3 $I_{SD} \leq 4.2A$, $di/dt \leq 200A/\mu s$, $V_{DD} \leq BV_{dss}$, Starting $T_J=25^\circ C$

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	700			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =700V, V _{GS} =0V			10	μA
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 =250 μA	2		4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =4.2A			2.15	Ω
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		330	670	pF
Output Capacitance	C _{oss}			70	90	
Reverse Transfer Capacitance	C _{rss}			8	11	
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =560V, I _D =4.2A (Note1,2)		25	20	nC
Gate Source Charge	Q _{gs}			3.4		
Gate Drain Charge	Q _{gd}			7.1		
Turn-On DelayTime	t _{d(on)}	V _{DS} =350V, I _D =4.2A, R _G =25 Ω (Note1,2)		13	35	ns
Turn-On Rise Time	t _r			45	100	
Turn-Off DelayTime	t _{d(off)}			25	60	
Turn-Off Fall Time	t _f			35	80	
Body Diode Reverse Recovery Time	t _{rr}	I _F =4.2A, di/dt=100A/μs, V _{GS} =0V		250		μs
Body Diode Reverse Recovery Charge	Q _{rr}			1.5		
Drain-Source Diode Forward Current	I _{SM}				17.6	A
Maximum Body-Diode Continuous Current	I _S				4.2	
Diode Forward Voltage	V _{SD}	I _S =4.2A, V _{GS} =0V			1.4	V

Note.1: Pulse Test: Pulse width≤300μs, Duty cycle≤2%

Note.2: Essentially independent of operating temperature

N-Channel Enhancement MOSFET

NDT4N70

■ Typical Characteristics

