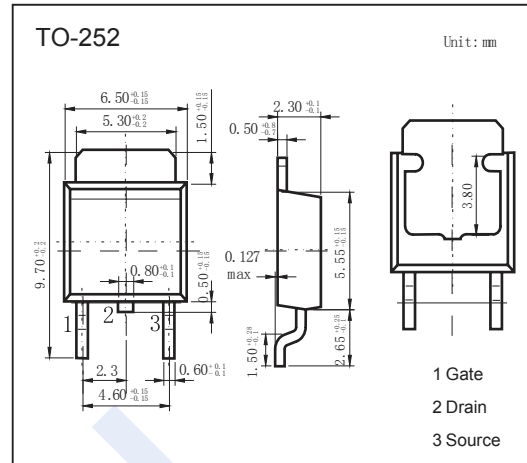
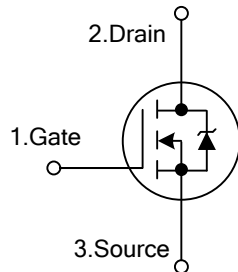


## N-Channel MOSFET

### NDT25N06

#### ■ Features

- $V_{BS} (V) = 60V$
- $I_D = 25 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 65m\Omega (V_{GS} = 10V)$
- High Current Capability
- Low Gate Charge



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	60	V	
Drain-Gate Voltage ( $R_{GS}=20k\Omega$ )	$V_{DGR}$	60		
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	$T_c=25^\circ C$	25	A
		$T_c=100^\circ C$	17	
Pulsed Drain Current	$I_{DM}$	100		
Power Dissipation	$P_D$	41	W	
Single Pulse Avalanche Energy (Note.1)	$E_{AS}$	100	mJ	
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	100	$^\circ C/W$	
Thermal Resistance.Junction- to-Case	$R_{thJC}$	3		
Junction Temperature	$T_J$	150	$^\circ C$	
Storage Temperature Range	$T_{stg}$	-65 to 150		

Note.1: starting  $T_J=25^\circ C$ ,  $I_D=25A$ ,  $V_{DD}=25V$

## N-Channel MOSFET

### NDT25N06

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =250 μ A, V <sub>GS</sub> =0V	60			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>Ds</sub> =Max Rating			1	μA
		V <sub>Ds</sub> =Max Rating×0.8, T <sub>c</sub> =125°C			10	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>Ds</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>Ds</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μ A	2		4	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =12.5A			65	mΩ
On State Drain Current	I <sub>D(ON)</sub>	V <sub>Ds</sub> >I <sub>D(ON)</sub> ×R <sub>DS(ON)MAX</sub> , V <sub>GS</sub> =10V	25			A
Forward Transconductance	g <sub>FS</sub>	V <sub>Ds</sub> >I <sub>D(ON)</sub> ×R <sub>DS(ON)MAX</sub> , I <sub>D</sub> =12.5A	7	11		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>Ds</sub> =25V, f=1MHz			900	pF
Output Capacitance	C <sub>oss</sub>				450	
Reverse Transfer Capacitance	C <sub>rss</sub>				150	
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>Ds</sub> =40V, I <sub>D</sub> =25A		26	40	nC
Gate Source Charge	Q <sub>gs</sub>			8		
Gate Drain Charge	Q <sub>gd</sub>			9		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>Ds</sub> =30V, I <sub>D</sub> =3A, R <sub>G</sub> =50 Ω			45	ns
Turn-On Rise Time	t <sub>r</sub>				130	
Turn-Off DelayTime	t <sub>d(off)</sub>	V <sub>GS</sub> =10V, V <sub>Ds</sub> =40V, I <sub>D</sub> =25 A, R <sub>G</sub> =50 Ω			120	
Turn-Off Fall Time	t <sub>f</sub>				120	
Source-Drain Current	I <sub>S</sub>				25	A
Source-Drain Current (Pulsed)	I <sub>SD</sub>				100	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =25A, V <sub>GS</sub> =0V (Note.1)			1.5	V

Note.1: Pulsed: Pulse duration = 300us, duty cycle 1.5%.

## N-Channel MOSFET NDT25N06

■ Typical Characteristics

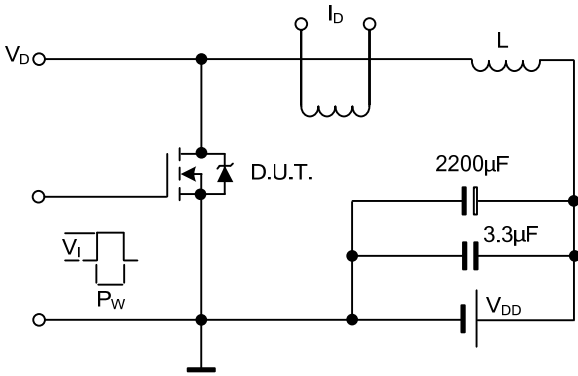


Fig. 1 Unclamped Inductive Load Test Circuits

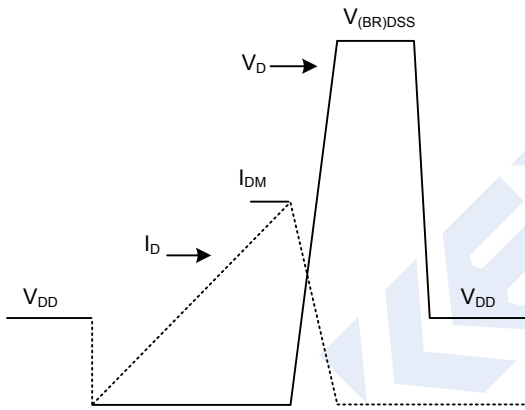


Fig. 2 Unclamped Inductive Waveforms

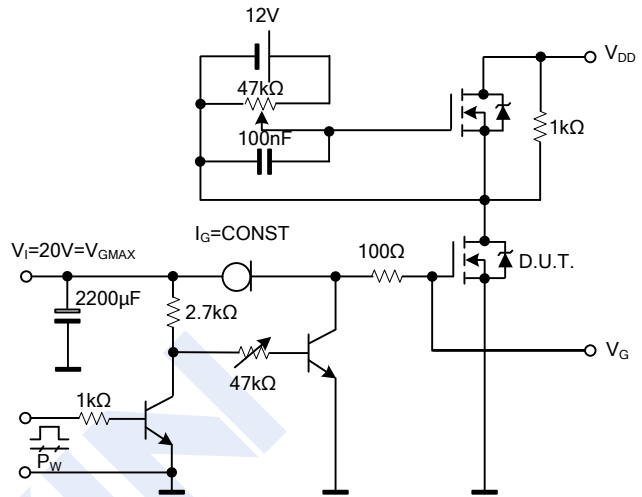


Fig. 4 Gate Charge Test Circuit

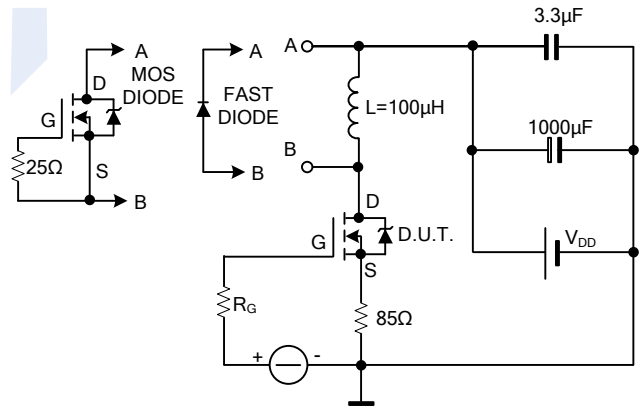


Fig. 5 Test Circuit For Inductive Load Switching And Diode Reverse Recovery Time

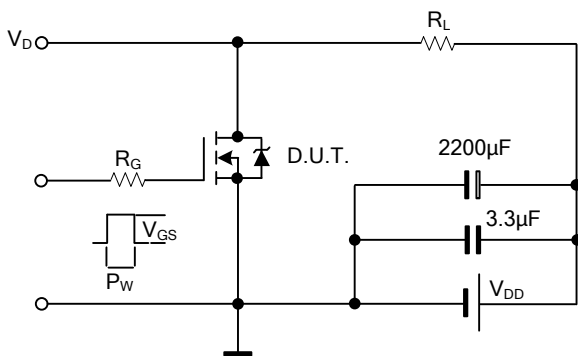


Fig. 3. Switching Times Test Circuits For Resistive Load