30V,150A
N-Channel Mosfet

FEATURES

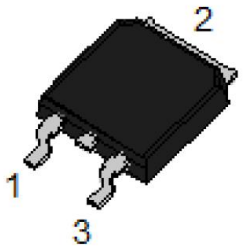
RDS(ON)≤ 2.6mΩ @VGS=10V

RDS(ON)≤3.4mΩ @VGS=4.5V

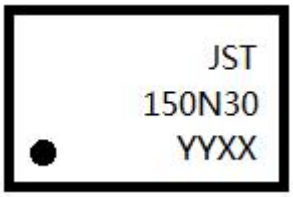
Simple Drive Requirement

Low On-resistance

TO-252

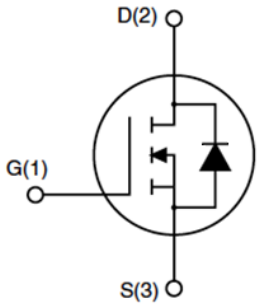


MARKING



YYXX 代表生产年周

N-CHANNEL MOSFET



Absolute Maximum Ratings (T_C=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
			TO-252-4R	
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current	T_C = 25℃	150	A
		T_C = 100℃	105	A
I_{DM}	Pulsed Drain Current note1		600	A
E_{AS}	Single Pulsed Avalanche Energy note2		180	mJ
P_D	Power Dissipation	T_C = 25℃	130	W
$R_{\theta JC}$	Thermal Resistance, Junction to Case		1.15	℃/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		62	
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +175	℃

Electrical Characteristics (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250μA	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =30V, V_{GS} = 0V, T_J=25℃	-	-	1	uA
		V_{DS} =24V, V_{GS} = 0V, T_J=125℃	-	-	10	
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V,V_{GS} = ±20V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	1.0	1.6	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note3	V_{GS} =10V, I_D =30A	-	1.8	2.6	mΩ
		V_{GS} =4.5V, I_D =15A	-	2.4	3.4	
g_{FS}	Forward Transconductance	V_{DS} =5V, I_D =15A	-	48	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} =25V, V_{GS} =0V, f = 1.0MHz	-	4800	-	pF
C_{oss}	Output Capacitance		-	735	-	pF
C_{rss}	Reverse Transfer Capacitance		-	420	-	pF
Q_g	Total Gate Charge	V_{DS} =15V, I_D =24A, V_{GS} =4.5V	-	40	-	nC
Q_{gs}	Gate-Source Charge		-	6	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	19	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=15V, I_D=1A, R_{GEN}=1Ω, V_{GS} =10V	-	20	-	ns
t_r	Turn-on Rise Time		-	32	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	75	-	ns
t_f	Turn-off Fall Time		-	28	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	150	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	600	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S=30A	-	-	1.2	V
trr	Body Diode Reverse Recovery Time	I_S=1A,dI/dt=100A/μs	-	49	85	ns
Qrr	Body Diode Reverse Recovery Charge		-	18	35	nC

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. EAS condition: T_J=25℃,V_{DD}=25V,V_{GS}=10V, L=0.1mH, I_{AS}=60A, R_G=25Ω

3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

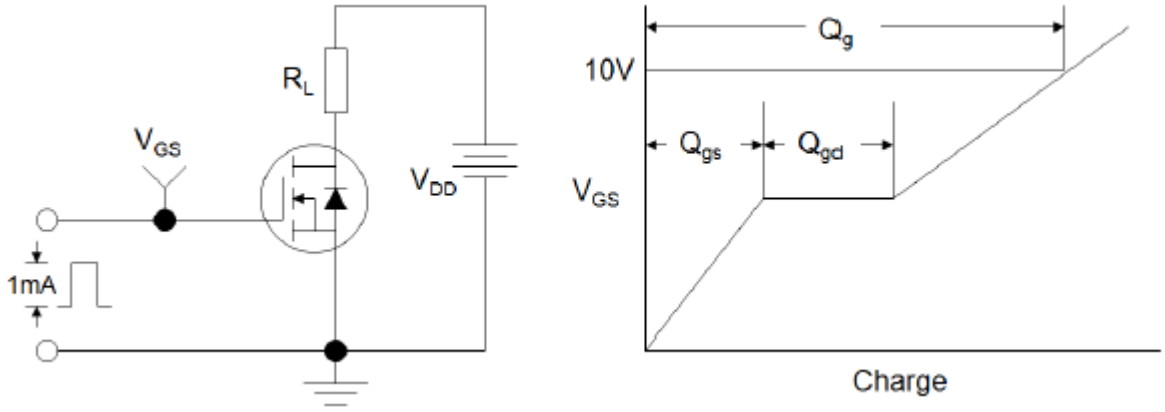


Figure1:Gate Charge Test Circuit & Waveform

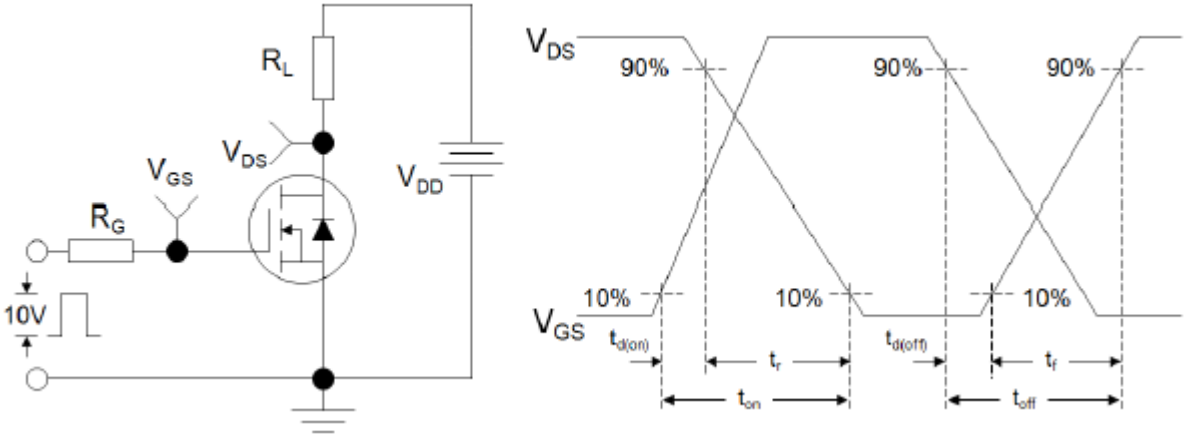


Figure 2: Resistive Switching Test Circuit & Waveforms

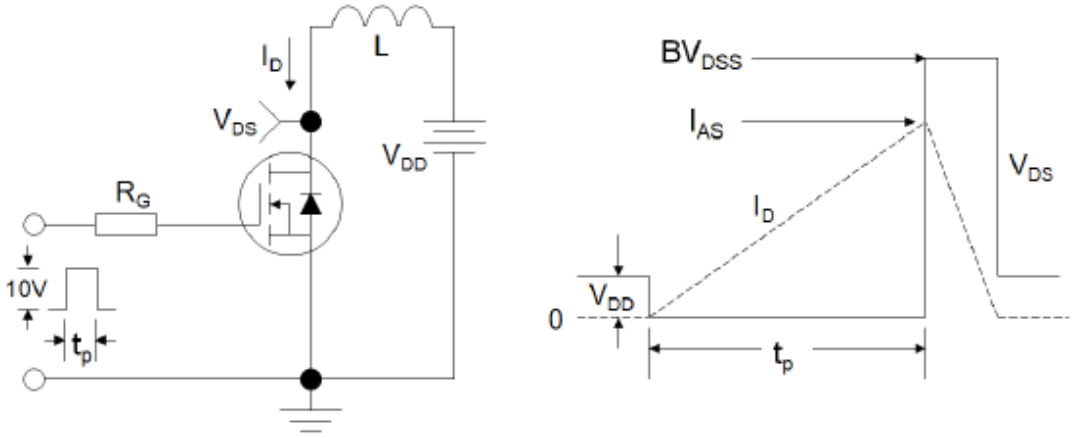


Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms

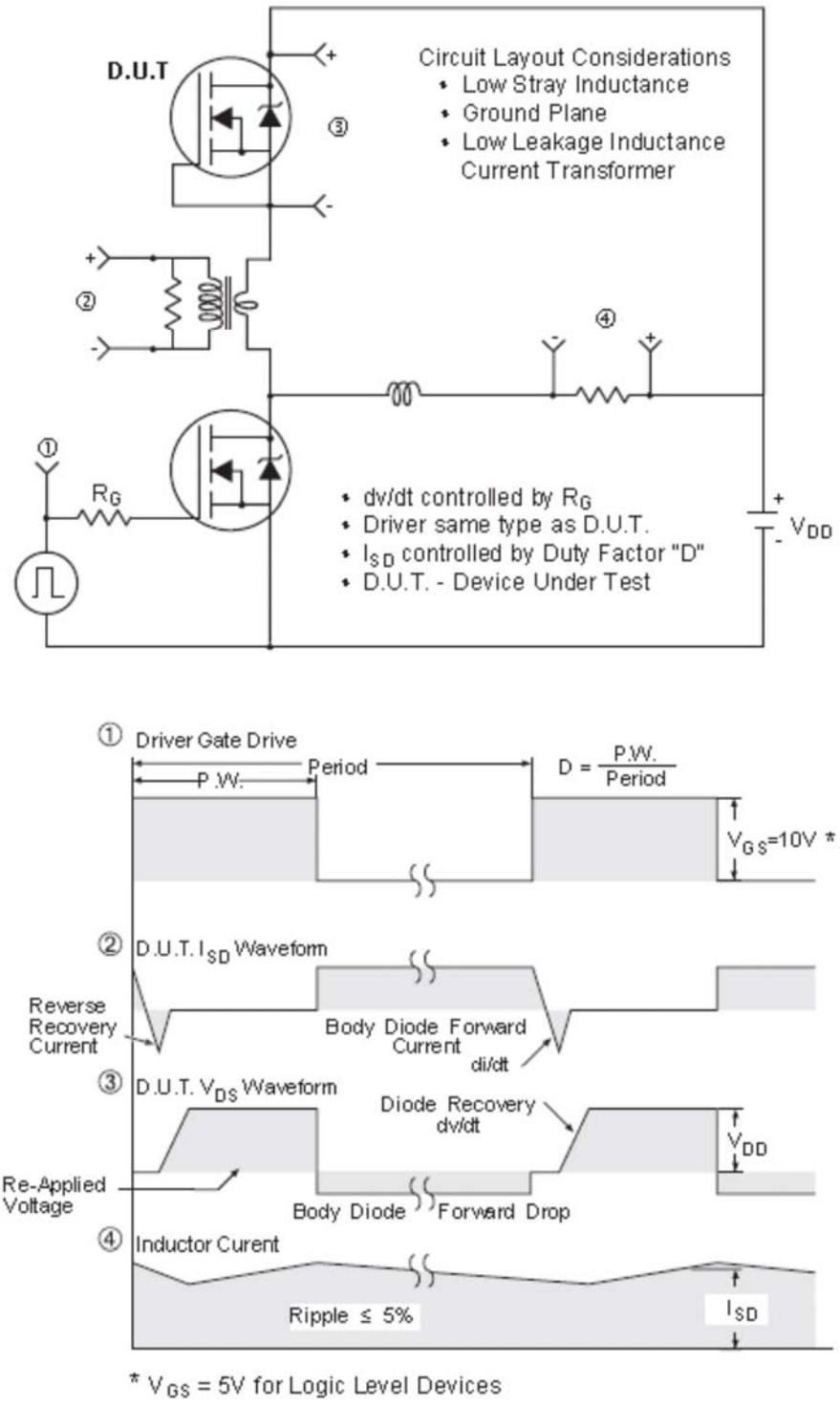
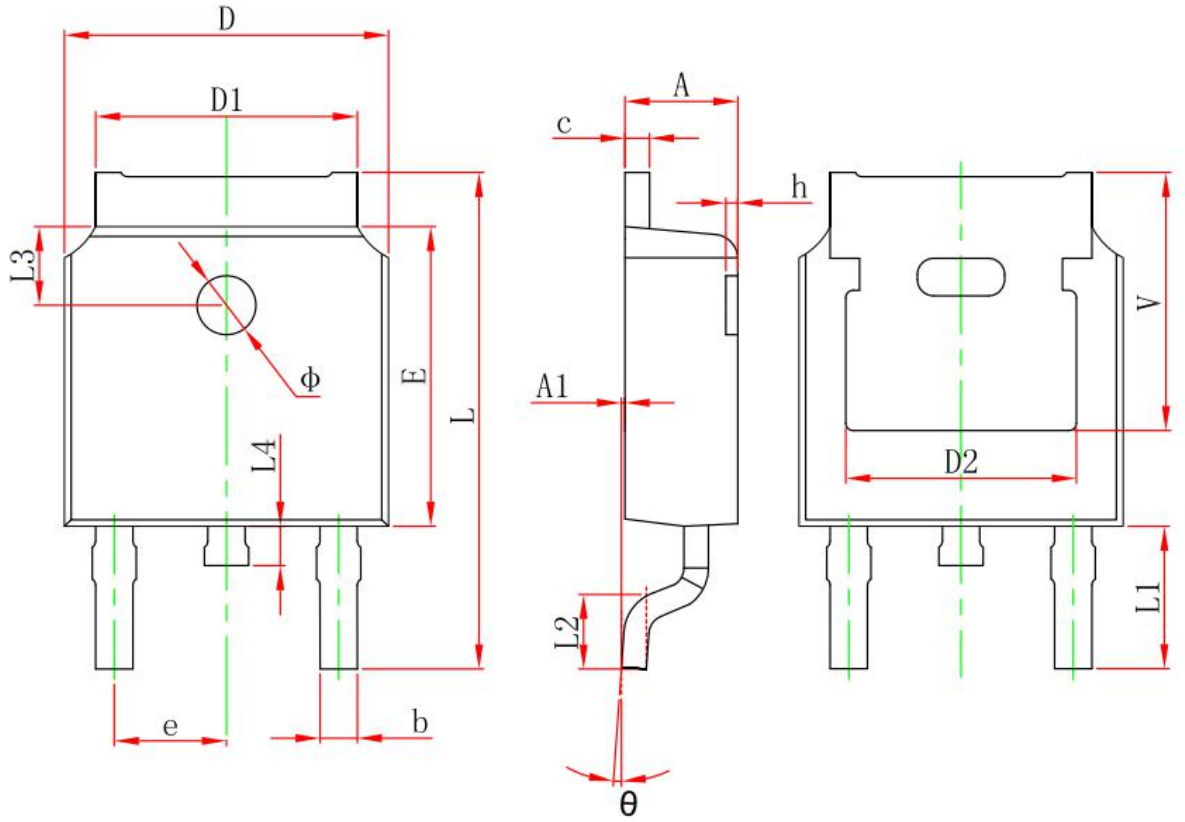


Figure 4:Peak Diode Recovery dv/dt Test Circuit & Waveforms (For N-channel)

TO-252-2L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	