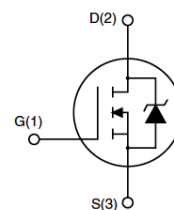
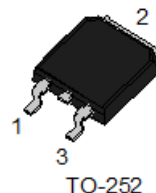


N-Channel Enhancement Mode Power MOSFET
PRIMARY CHARACTERISTICS

BV _{DSS}	R _{DS(on)} MAX	I _D
30V	4mΩ@V _{GS} =10V	100A
	6mΩ@V _{GS} =4.5V	

SCHEMATIC DIAGRAM
TO-252 PACKAGE

GENERAL DESCRIPTION

- 30V,100A
- R_{DS(ON)}=3.1mΩ (Typ.) @ V_{GS} =10V
- R_{DS(ON)}=4.5mΩ (Typ.) @ V_{GS} =4.5V
- Advanced Trench Technology
- Provide Excellent R_{DS(ON)} and Low Gate Charge

MECHANICAL DATA

- Case : Molded plastic,TO-252
- Polarity : Shown above
- Terminals :Plated terminals, solderable per MIL-STD-750,Method 2026
- Epoxy : UL94-V0 rated flame retardant

Absolute Maximum Ratings (T_c=25°C unless otherwise specified)

Symbol	Parameter		Max.		Units
V _{DSS}	Drain-Source Voltage		30		V
V _{GSS}	Gate-Source Voltage		±20		V
I _D	Continuous Drain Current	T _C = 25°C	100		A
		T _C = 100°C	65		A
I _{DM}	Pulsed Drain Current ^{note1}		400		A
E _{AS}	Single Pulsed Avalanche Energy ^{note2}		180		mJ
P _D	Power Dissipation	T _C = 25°C	88	115	W
R _{θJC}	Thermal Resistance, Junction to Case		1.7	1.3	°C/W
T _J , T _{STG}	Operating and Storage Temperature Range		-55 to +175		°C



N-Channel Enhancement Mode Power MOSFET

Electrical Characteristics ($T_C=25^{\circ}\text{C}$ 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,	-	-	1.0	μA
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 =24A	-	3.1	4	mΩ
		V _{GS} =4.5V, I _D =12A	-	4.5	6	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =10A	-	15.5	-	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f = 1.0MHz	-	2200	-	pF
C _{oss}	Output Capacitance		-	280	-	pF
C _{rss}	Reverse Transfer Capacitance		-	177	-	pF
Q _g	Total Gate Charge	V _{DS} =15V, I _D =24A, V _{GS} =10V	-	42	-	nC
Q _{gs}	Gate-Source Charge		-	4	-	nC
Q _{gd}	Gate-Drain(“Miller”) Charge		-	13	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} =15V, I _D =15A, R _{GEN} =3.3Ω, V _{GS} =10V	-	12.6	-	ns
t _r	Turn-on Rise Time		-	19.5	-	ns
t _{d(off)}	Turn-off Delay Time		-	42.8	-	ns
t _f	Turn-off Fall Time		-	13.2	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	100	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	400	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S =30A	-	-	1.2	V
t _{rr}	Body Diode Reverse Recovery Time	I _F =30A,dI/dt=100A/μs	-	19	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge		-	11	-	nC

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

2. EAS condition: $T_J=25^{\circ}\text{C}, V_{DD}=25V, V_G=10V, R_G=25\Omega$ 3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics

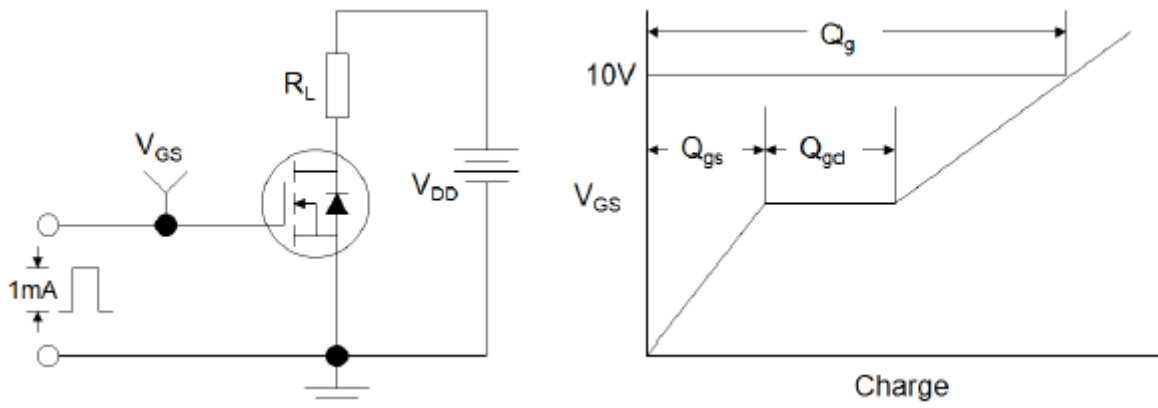


Figure1:Gate Charge Test Circuit & Waveform

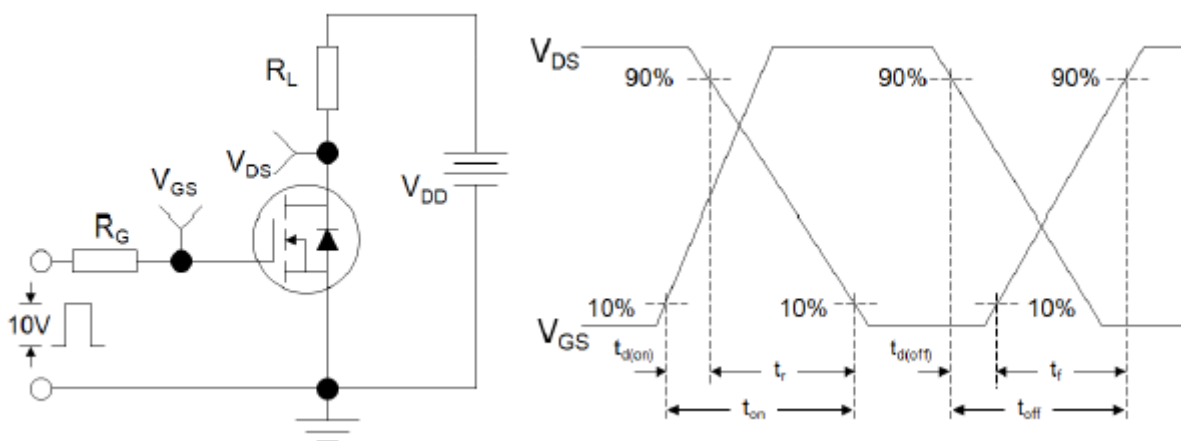


Figure 2: Resistive Switching Test Circuit & Waveforms

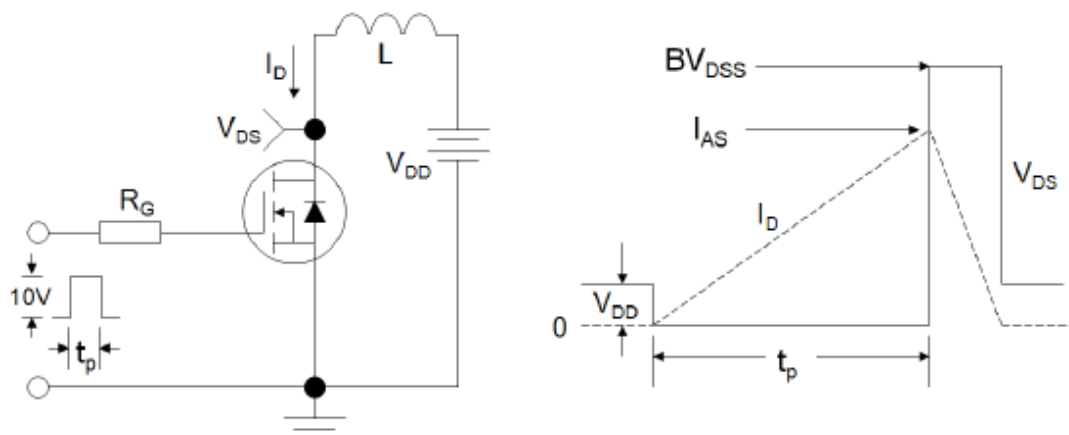
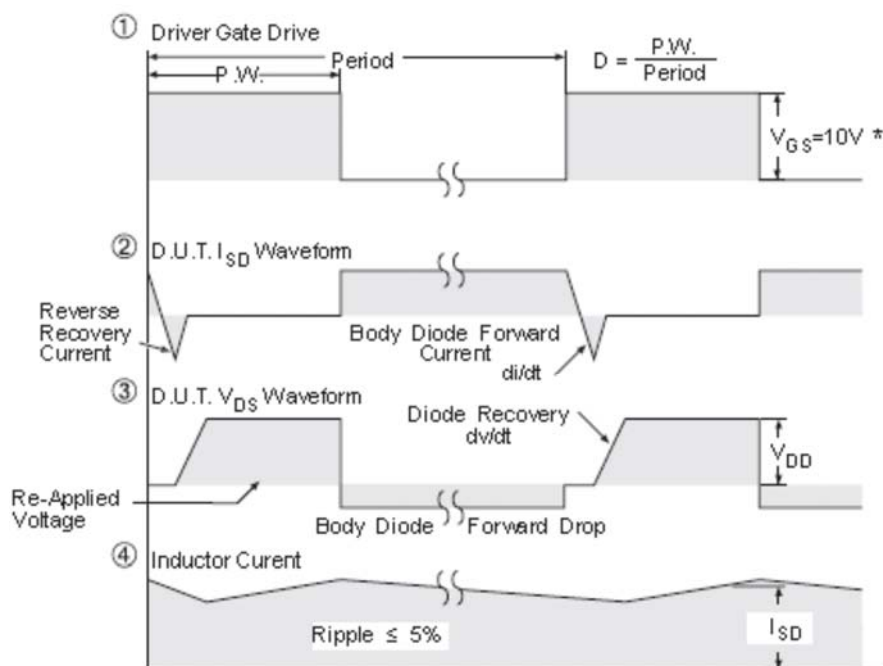
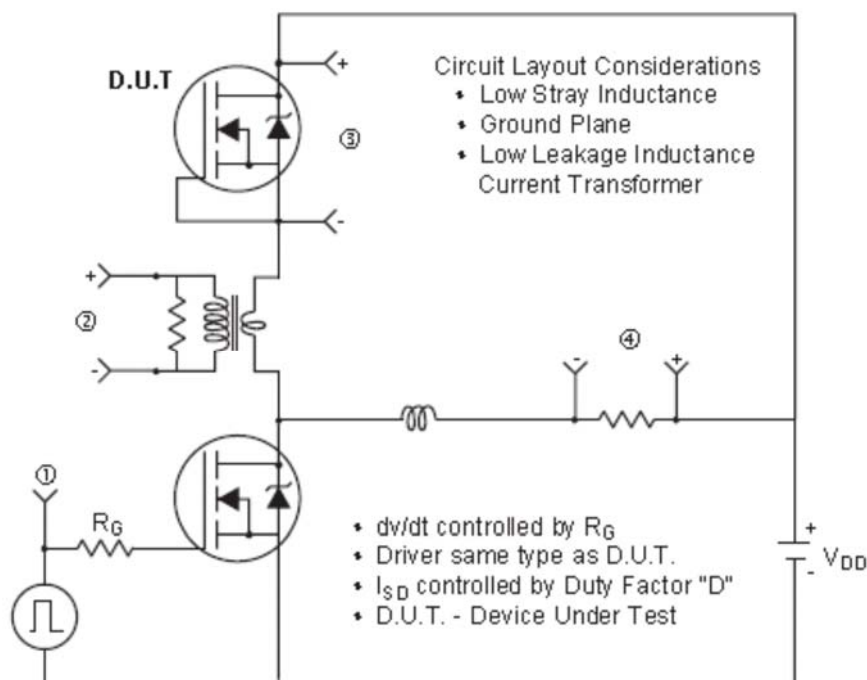


Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms



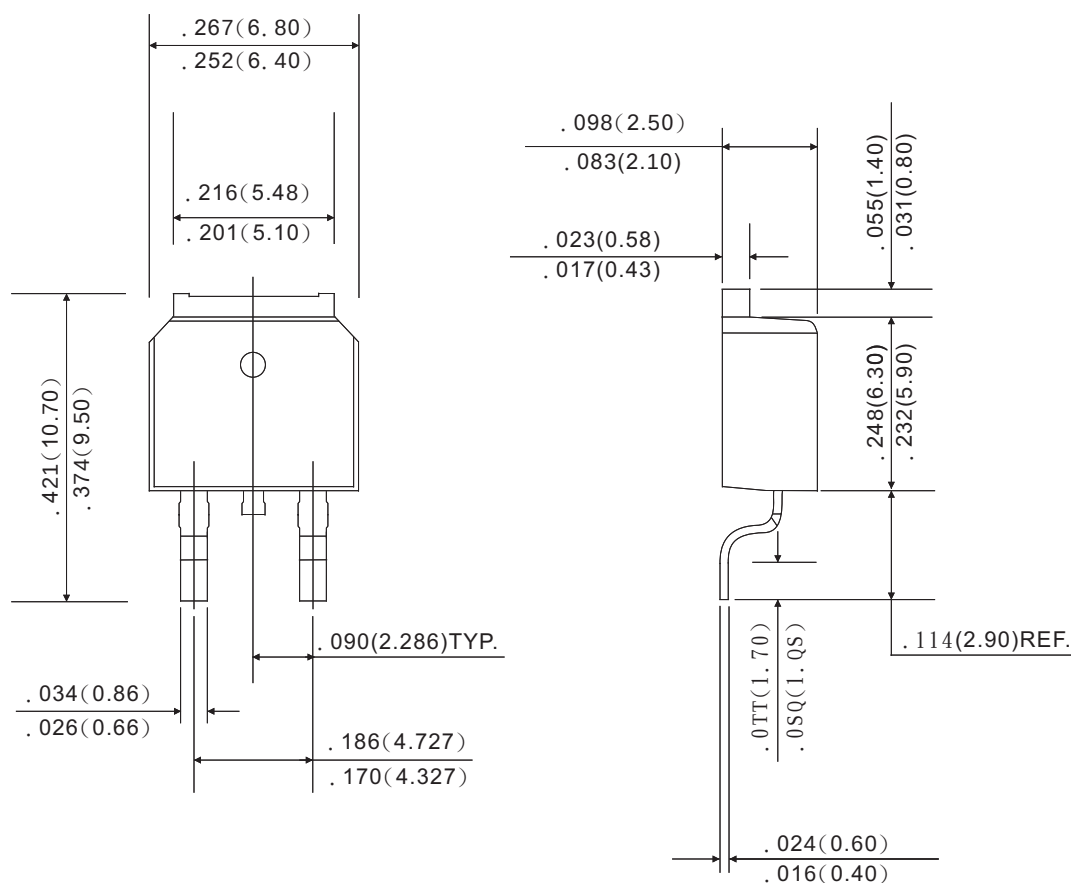
N-Channel Enhancement Mode Power MOSFET



* $V_{GS} = 5V$ for Logic Level Devices

Outline Drawing

TO-252(j)



Dimensions in inches and (millimeters)

Rev.B

Ordering Information:

Device PN	Packing
Part Number -T ⁽¹⁾ G ⁽²⁾ -WS ⁽³⁾	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

(3) WS : Willas brand abbreviation, Label Type does not display

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