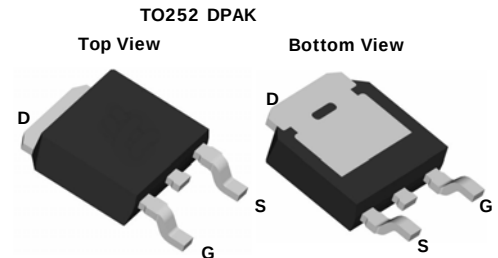


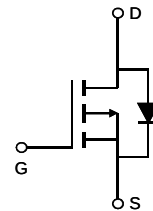
Features

- 60V, -65A
- $R_{DS(ON)}$ Typ = 22m Ω @ $V_{GS} = -10V$
- $R_{DS(ON)}$ Typ = 28m Ω @ $V_{GS} = -4.5V$
- Excellent $R_{DS(ON)}$ and Low Gate Charge



Application

- Load Switch
- PWM Application
- Power Management



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

Symbol	Parameter		Max.	Units
V _{DSS}	Drain-Source Voltage		-60	V
V _{GSS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current	T _A = 25°C	-65	A
		T _A = 100°C	-30	
I _{DM}	Pulsed Drain Current ^{note1}		-110	A
P _D	Power Dissipation	T _A = 25°C	89	W
R _{θJA}	Thermal Resistance, Junction to Ambient		45	°C/W
T _J , T _{STG}	Operating and Storage Temperature Range		-55 to +150	°C

Electrical Characteristics ($T_J=25^{\circ}\text{C}$ 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	-60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -60V, V _{GS} =0V,	-	-	-1	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	-1.1	-1.6	-2.2	V
R _{DS(on)}	Static Drain-Source on-Resistance note2	V _{GS} = -10 V, I _D = -20 A	-	22	27	mΩ
		V _{GS} = -4.5V, I _D = -15 A	-	28	33	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} = -30V, V _{GS} =0V, f=1.0MHz		4076		pF
C _{oss}	Output Capacitance		-	168	-	pF
C _{rss}	Reverse Transfer Capacitance		-	139	-	pF
Q _g	Total Gate Charge	V _{DS} = -30V, I _D = -15A, V _{GS} = -0-10V	-	26	-	nC
Q _{gs}	Gate-Source Charge		-	9	-	nC
Q _{gd}	Gate-Drain(“Miller”) Charge		-	6	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} = -30V, I _D = -15A, R _G = 6Ω, V _{GEN} = -10V	-	10	-	ns
t _r	Turn-on Rise Time		-	14	-	ns
t _{d(off)}	Turn-off Delay Time		-	30	-	ns
t _f	Turn-off Fall Time		-	15	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-65	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-110	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S = -4.1A	-	-	-1.2	V

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting $T_J=25^{\circ}\text{C}$, $V_{DD}=-50V$, $V_G=-10V$, $R_G=25\Omega$, $L=0.5mH$, $I_{AS}=-21A$
 3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.

Test Circuit

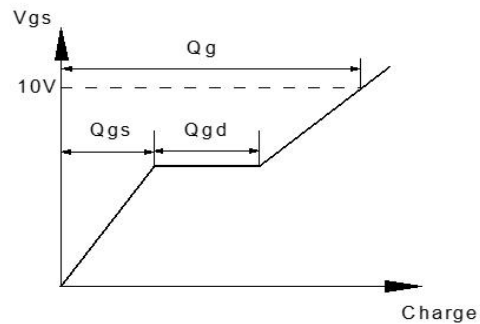
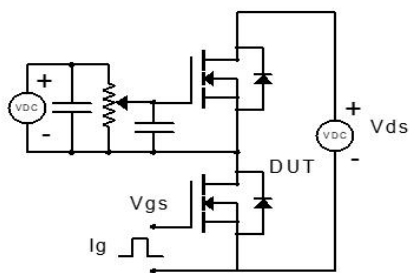


Figure 1: Gate Charge Test Circuit & Waveform

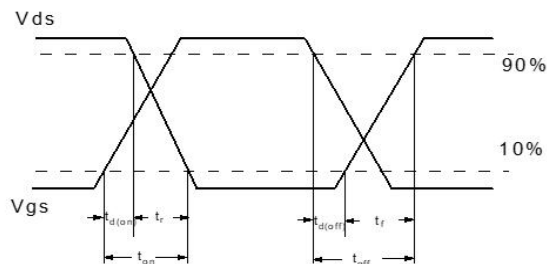
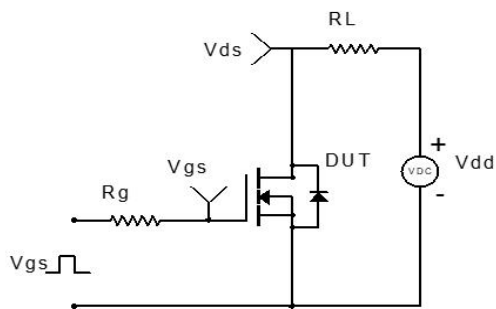


Figure 2: Resistive Switching Test Circuit & Waveform

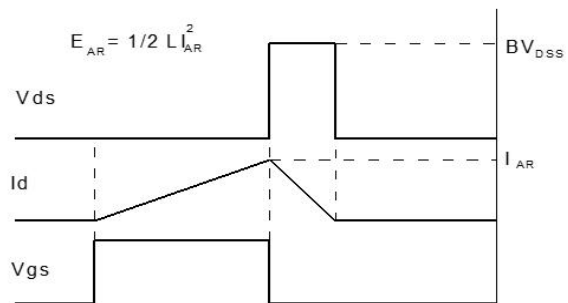
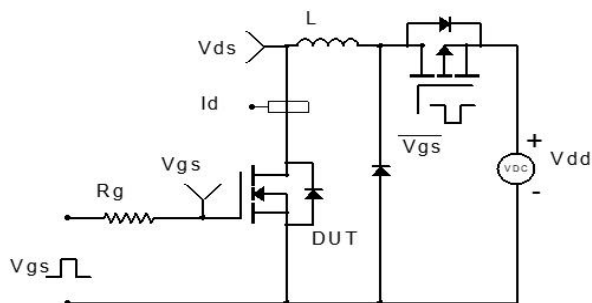


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

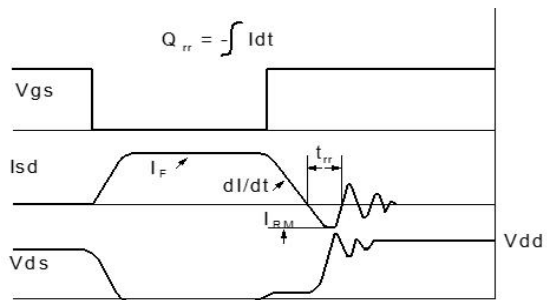
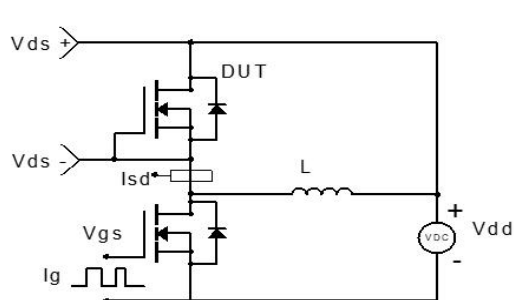
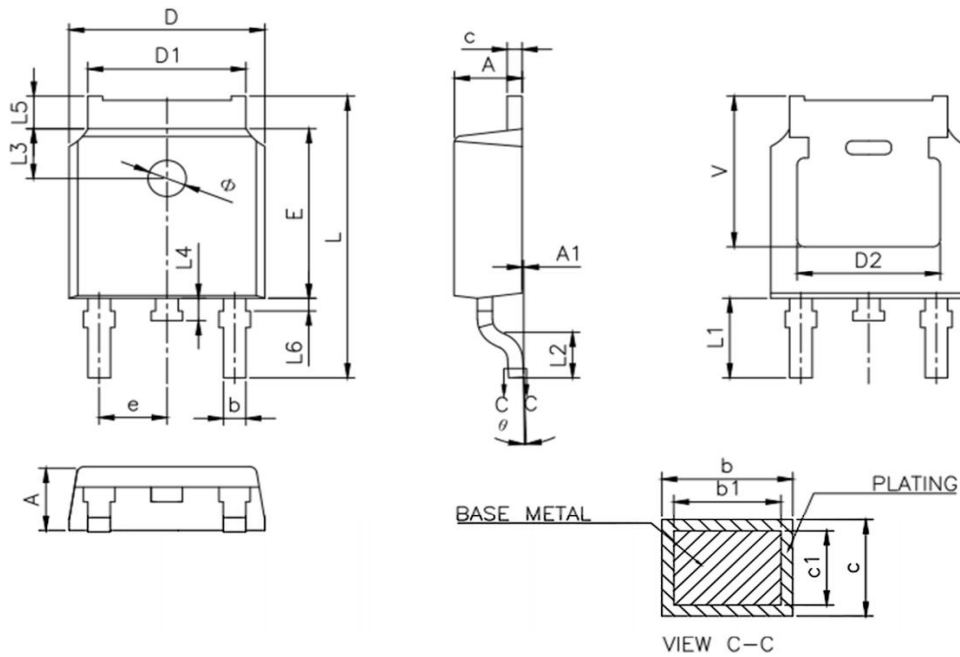


Figure 4: Diode Recovery Test Circuit & Waveform

Package Mechanical Data(TO-252-3L)



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A1	0.00	--	0.127
b	0.66	--	0.86
b1	0.65	0.76	0.81
D	6.50	6.60	6.70
D1	5.10	5.33	5.46
c	0.47	--	0.60
c1	0.46	0.51	0.56
D2	4.83 REF.		
E	6.00	6.10	6.20
e	2.186	2.286	2.386
L	9.80	10.10	10.40
L1	2.90 REF.		
L2	1.40	1.50	1.60
L3	1.80 REF.		
L4	0.60	0.80	1.00
L5	0.90	--	1.25
L6	0.15	--	0.75
Φ	1.10	--	1.30
θ	0°	--	8°
V	5.40 REF.		