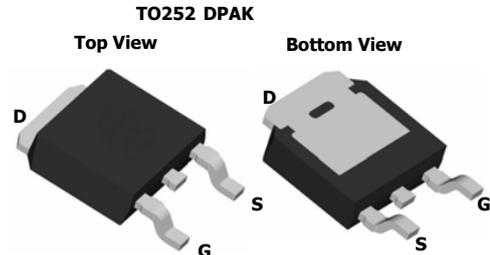


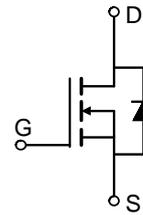
Features

- 150V, 30A
 $R_{DS(ON)}$ Typ= 65m Ω @ $V_{GS} = 10V$
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge



Applications

- Load Switch
- PWM Application
- Power Management



Absolute Maximum Ratings (@ $T_J = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Value	Units
V_{DS}	Drain-to-Source Voltage	150	V
V_{GS}	Gate-to-Source Voltage	± 20	V
I_D	Continuous Drain Current	$T_C = 25^\circ C$	30
		$T_C = 100^\circ C$	12.6
I_{DM}	Pulsed Drain Current ⁽¹⁾	79	A
E_{AS}	Single Pulsed Avalanche Energy ⁽²⁾	10.5	mJ
P_D	Power Dissipation	$T_C = 25^\circ C$	74
$R_{\theta JC}$	Thermal Resistance, Junction to Case	3.0	$^\circ C/W$
T_J, T_{STG}	Junction & Storage Temperature Range	-55 to 150	$^\circ C$

Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$I_D = 250\mu\text{A}, V_{GS} = 0\text{V}$	150	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 150\text{V}, V_{GS} = 0\text{V}$	-	-	1.0	μA
I_{GSS}	Gate-Body Leakage Current	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	2.4	3.2	4.1	V
$R_{DS(ON)}$	Static Drain-Source ON-Resistance ⁽³⁾	$V_{GS} = 10\text{V}, I_D = 5\text{A}$	-	65	78	$\text{m}\Omega$
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{GS} = 0\text{V}, V_{DS} = 25\text{V},$ $f = 1\text{MHz}$	-	569	-	pF
C_{oss}	Output Capacitance		-	110	-	pF
C_{riss}	Reverse Transfer Capacitance		-	13	-	pF
Q_g	Total Gate Charge	$V_{GS} = 0 \text{ to } 10\text{V}$ $V_{DS} = 75\text{V}, I_D = 5\text{A}$	-	8.2	-	nC
Q_{gs}	Gate Source Charge		-	1.6	-	nC
Q_{gd}	Gate Drain ("Miller") Charge		-	2.2	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-On DelayTime	$V_{GS} = 10\text{V}, V_{DD} = 75\text{V}$ $I_D = 1\text{A}, R_{GEN} = 6\Omega$	-	8	-	ns
t_r	Turn-On Rise Time		-	10	-	ns
$t_{d(off)}$	Turn-Off DelayTime		-	20	-	ns
t_f	Turn-Off Fall Time		-	15	-	ns
Drain-Source Diode Characteristics and Max Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	20	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	79	A
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS} = 0\text{V}, I_S = 5\text{A}$	-	-	0.7	V

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting $T_J=25^\circ\text{C}$, $V_{DD}=75\text{V}$, $V_G=10\text{V}$, $R_G=25\text{ohm}$, $L=0.5\text{mH}$, $I_{AS}=5\text{A}$
 3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.

Test Circuit

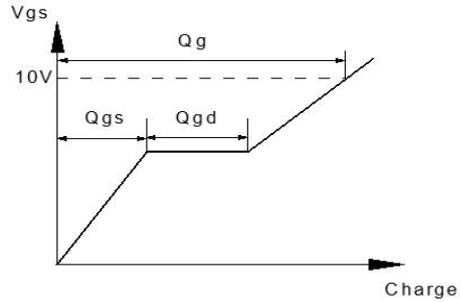
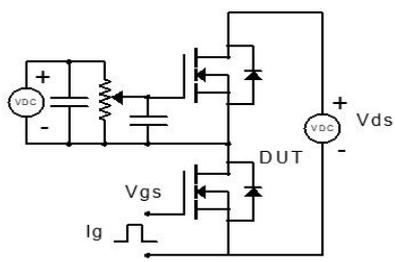


Figure 1: Gate Charge Test Circuit & Waveform

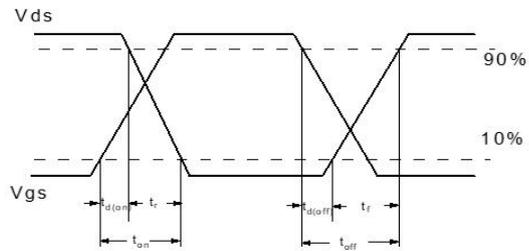
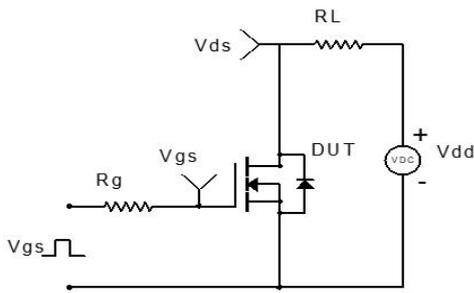


Figure 2: Resistive Switching Test Circuit & Waveform

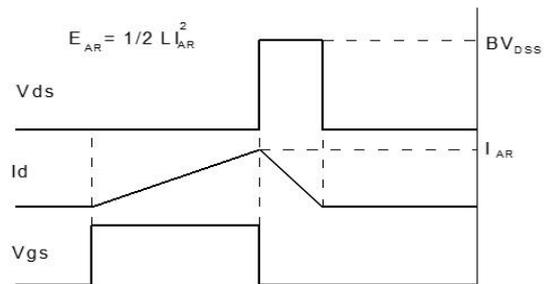
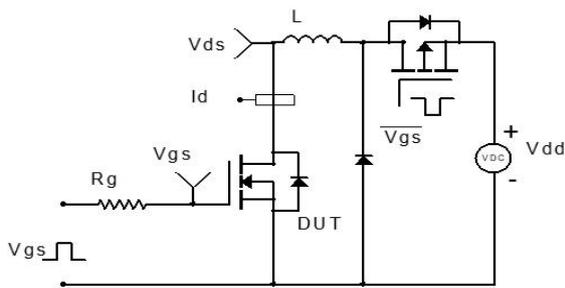


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

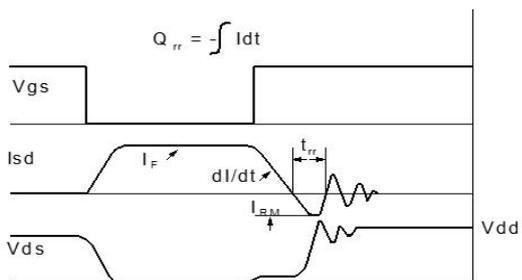
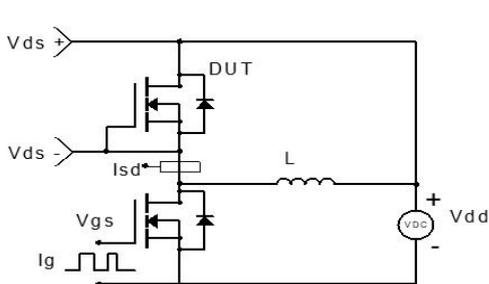
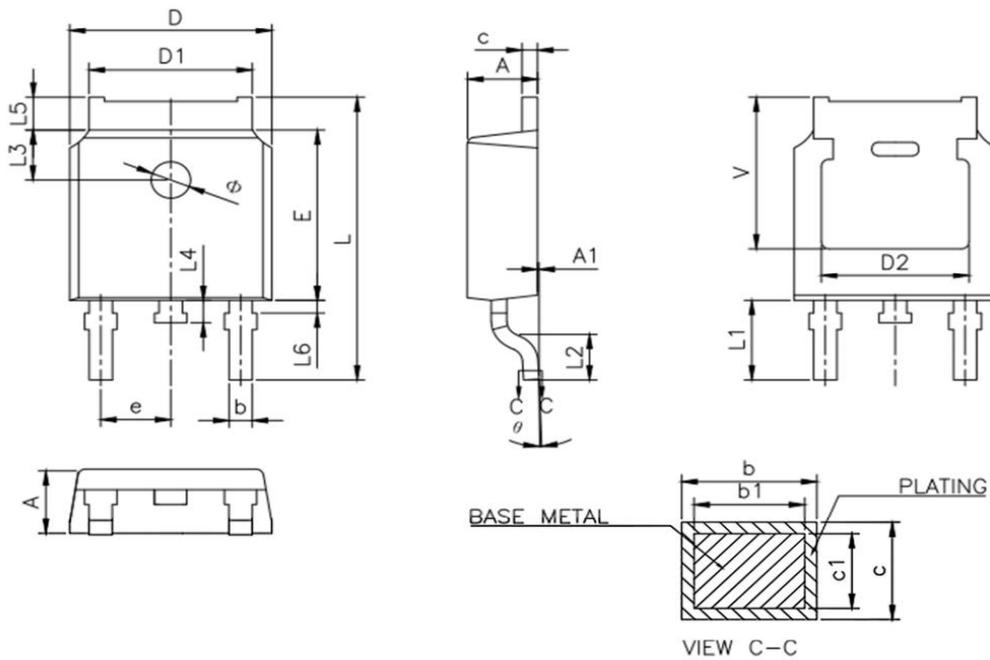


Figure 4: Diode Recovery Test Circuit & Waveform

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.		