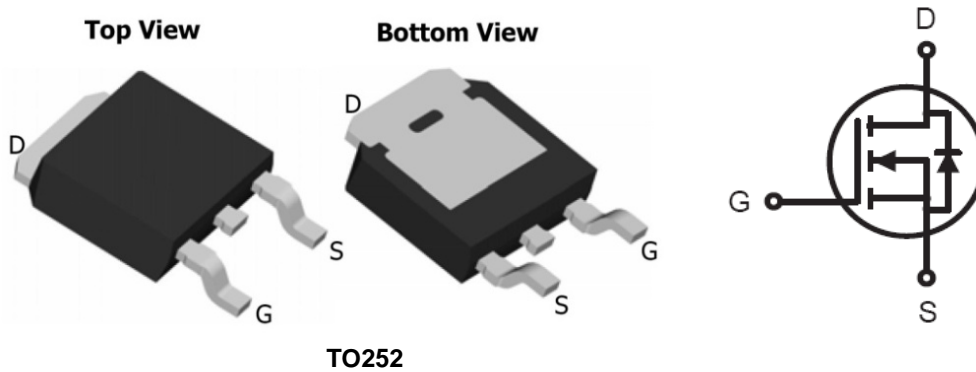


75A、30V N-CHANNEL POWER MOSFET

- Features**

- * $V_{DS} = 30V$
- * $R_{DS(ON)} < 5.2m\Omega @ V_{GS} = 10V$
- * $R_{DS(ON)} < 9m\Omega @ V_{GS} = 4.5V$
- * Minimize input capacitance and gate charge
- * Specially designed for DC/DC converters and DC motor control

- Pin Configurations**



- Absolute Maximum Ratings** @ $T_A=25^\circ C$ unless otherwise noted

Parameter	Symbol	Ratings	Units
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	I_D	$T_A=25^\circ C$	85
		$T_A=100^\circ C$	70
Drain Current Pulsed (Note 1)	I_{DM}	200	A
Total Power Dissipation ($T_C = 25^\circ C$)	P_D	130	W
Derating Factor above $25^\circ C$		0.9	W/ $^\circ C$
Operation Junction Temperature	T_J	-55 ~ +150	$^\circ C$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ C$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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● THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Thermal Resistance, Junction-to-Case	θ_{JC}			1.15	°C/W
Thermal Resistance, Case-to-Sink	θ_{CS}		0.5		
Thermal Resistance, Junction-to-Ambient	θ_{JA}			62.5	

● Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	1		3	
I_{GSS}	Gate-Body Leakage	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance ^a	$V_{GS} = 10V, I_D = 20A$		4	5.2	m Ω
		$V_{GS} = 4.5V, I_D = 20A$		6.5	9	
V_{SD}	Diode Forward Voltage	$I_{SD} = 25A, V_{GS} = 0V$			1.5	V
DYNAMIC PARAMETERS						
Q_g	Total Gate Charge	$V_{DS} = 15V, V_{GS} = 10V, I_D = 20A$		54		nC
Q_g	Total Gate Charge	$V_{DS} = 15V, V_{GS} = 4.5V, I_D = 20A, (Note\ 4,5)$		28		
Q_{gs}	Gate Source Charge			11		
Q_{gd}	Gate-Drain Charge			15		
R_g	Gate Resistance	$f = 1MHz$		1		Ω
C_{iss}	Input capacitance	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		2450		pF
C_{oss}	Output Capacitance			360		
C_{rss}	Reverse Transfer Capacitance			115		
$t_{d(on)}$	Turn-On Delay Time	$V_{GS} = 10V, V_{DD} = 15V, R_L = 15\Omega, R_G = 3\Omega (Note\ 4, 5)$		22		nS
t_r	Turn-On Rise Time			19		
$t_{d(off)}$	Turn-Off Delay Time			71		
t_f	Turn-Off Fall Time			9		

Note 1. Repeatability rating: pulse width limited by junction temperature

2. $L = 5.6mH, I_{AS} = 50A, V_{DD} = 25V, R_G = 0\Omega$, Starting $T_J = 25^\circ\text{C}$

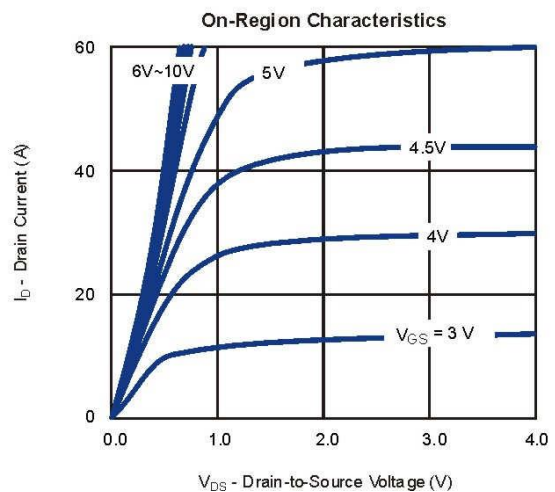
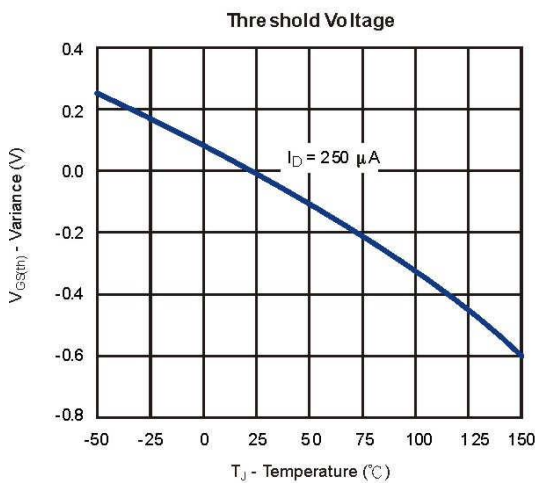
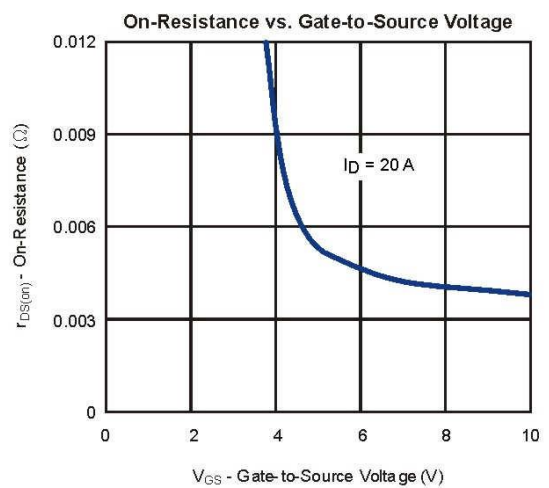
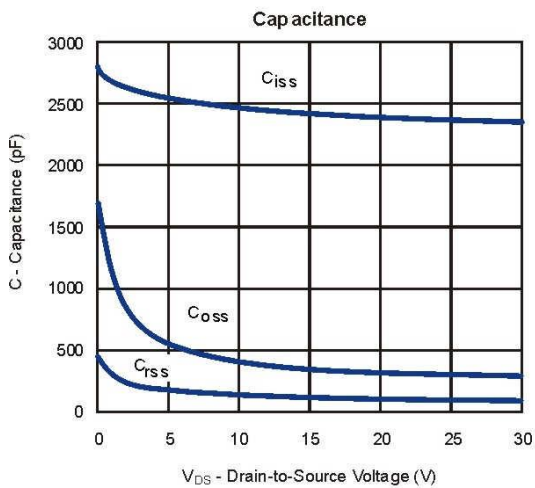
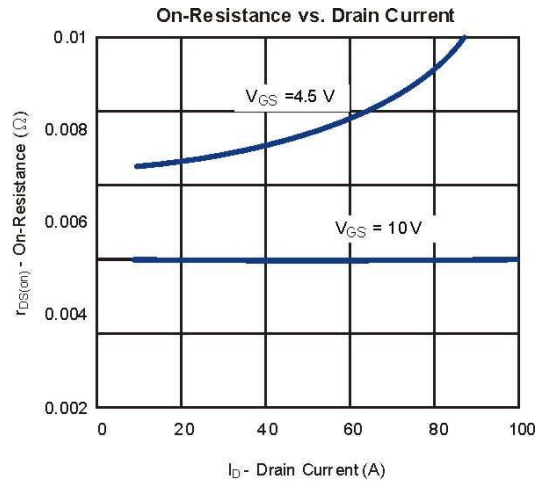
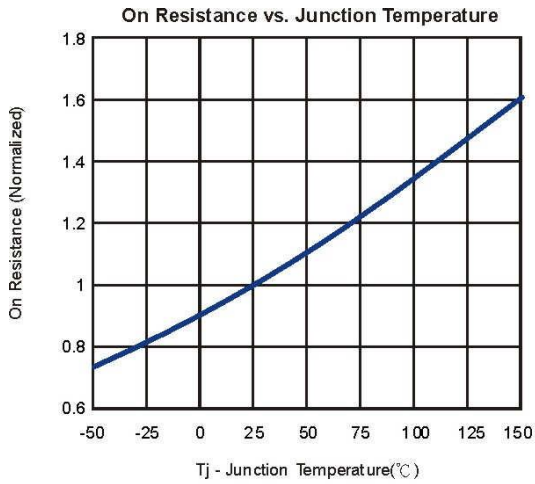
3. $I_{SD} \leq 50A, di/dt \leq 300A/\mu s, V_{DD} \leq BV_{DSS}$, Starting $T_J = 25^\circ\text{C}$

4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

5. Essentially independent of operating temperature.

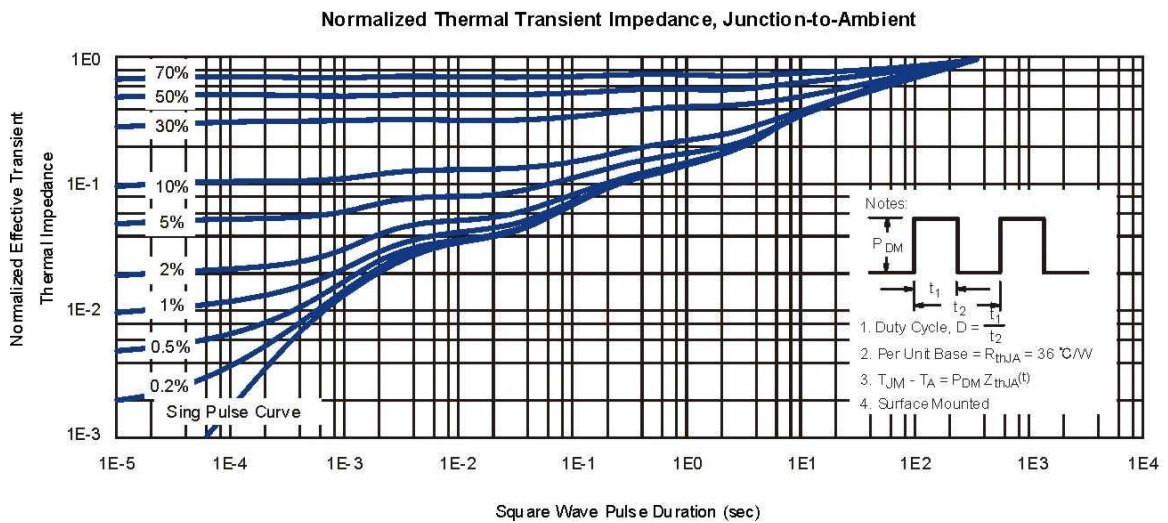
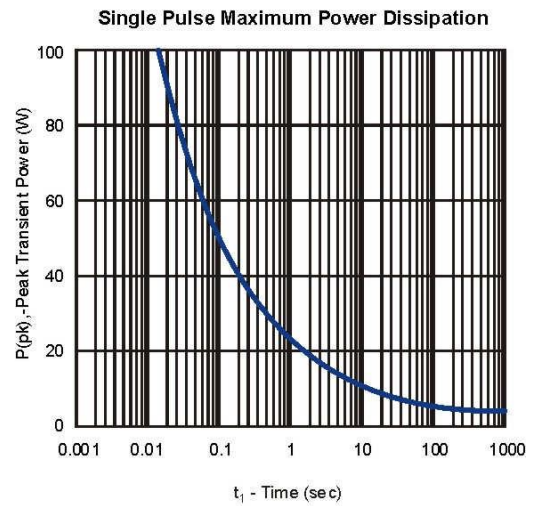
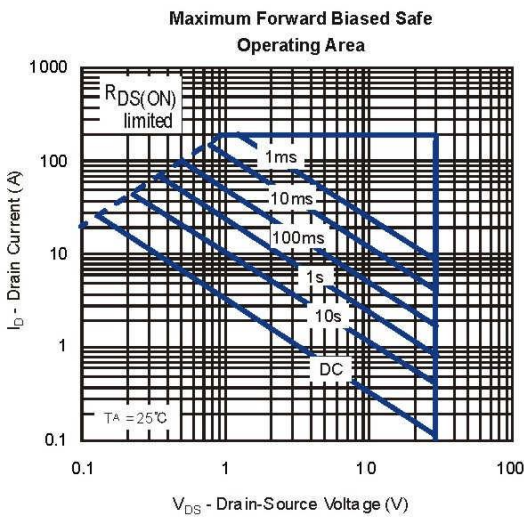
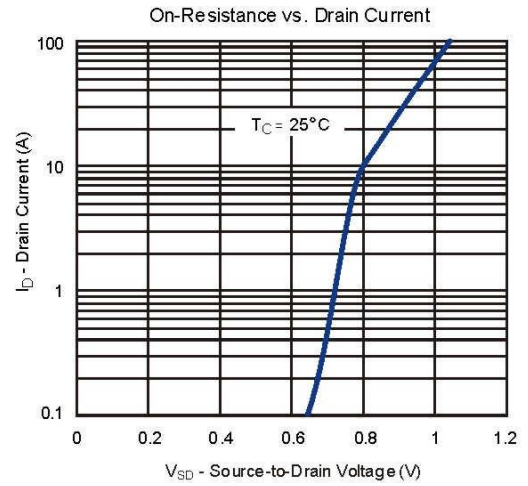
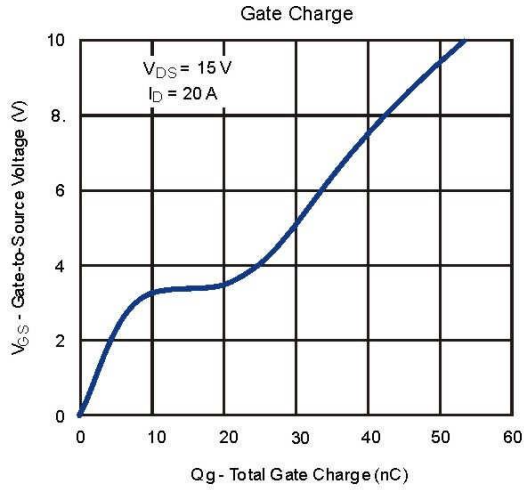
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- Typical Performance Characteristics (T_J = 25 Noted)



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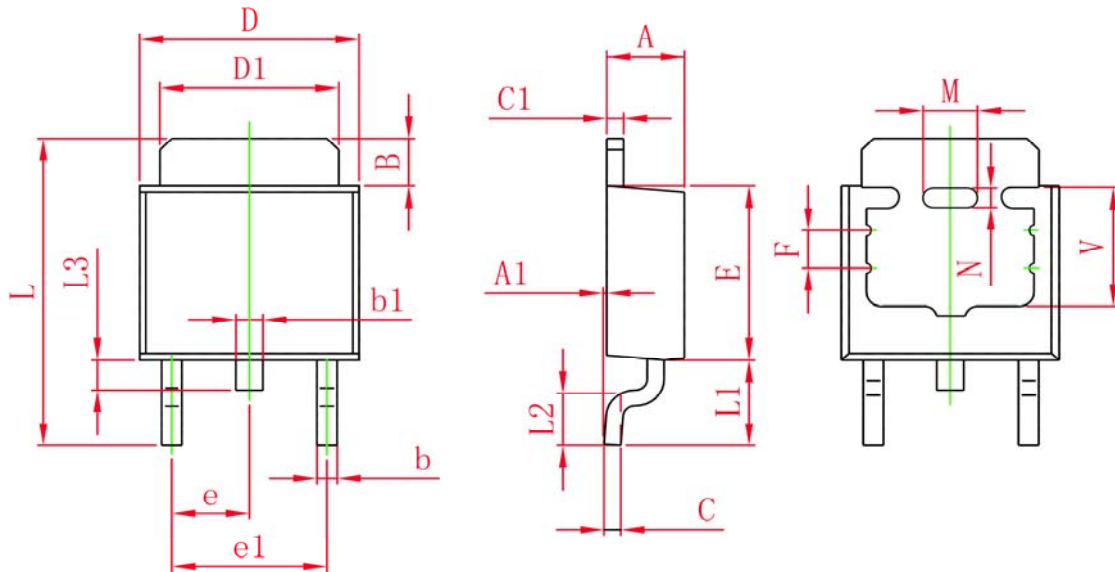
Typical Performance Characteristics (T_J = 25°C Noted)



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- Package Information

TO-252C-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	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
F	1.200REF.		0.047REF.	
M	1.600REF.		0.063REF.	
N	0.450REF.		0.018REF.	
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
L3	0.600	0.900	0.024	0.035
V	3.800 REF.		0.150 REF.	