



N-Channel Enhancement Mode Field Effect Transistor

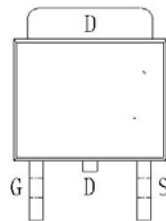
● Features

- N-channel, normal leve
- Excellent gate charge x $R_{DS(on)}$ product (FOM)
- Very low on-resistance $R_{DS(on)}$
- 175 °C operating temperature
- Pb-free lead plating; RoHS compliant
- Qualified according to JEDEC for target application
- Ideal for high-frequency switching and synchronous rectification

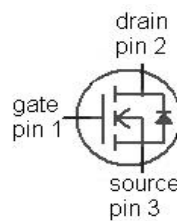
● Product Summary

V_{DS}	V_{GS}	Test Conditions	$R_{DS(on)}$
60V	±20V	5.5A@VGS=10V	30mR
		4.5A@ VGS=4V5	35mR

● Pin Configurations(TO252)



Top View



(mark:7362)

● Absolute Maximum Ratings $T_A=25^{\circ}C$ unless otherwise noted

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current	Continuous	I_D 6 ^(1A) 26 ^(1B)	A
	Pulse	I_{DM} 80	
Total Power Dissipation ^(note1)	P_D	2.5 ^(1A)	W
		50 ^(1B)	
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes

1A、 Surface Mounted on 1x1FR4 Board.

1B、 Pulse width limited maximum junction temperature Pulse test: $PW \leq 300 \mu s$ duty cycle $\leq 2\%$

2、 The value of P_D is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^{\circ} C$. The value in any given application depends on the user's specific board design. The current rating is based on the DC thermal resistance rating and PCB layout: A. Minimum footprint; B. With additional heat sink.

3、 Repetitive rating, pulse width limited by junction temperature



● Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter ^(note2)	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 uA	60	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0 V	--	--	1	uA
Gate–Body Leakage	I _{GSS}	V _{GS} = ± 20 V, V _{DS} = 0 V	--	--	±100	nA
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D = 250 uA	1	1.4	3	V
Static Drain–Source On–Resistance	R _{DS(ON)}	V _{GS} = 10 V, I _D = 5.5 A	--	30	41	mR
		V _{GS} = 4.5 V, I _D = 4.5 A	--	35	52	
Input Capacitance	C _{ISS}	V _{DS} = 10 V, V _{GS} = 0 V, F = 1MHz	--	1180	--	pF
Output Capacitance	C _{OSS}		--	170	--	
Reverse Transfer Capacitance	C _{RSS}		--	100	--	
Turn–On Delay Time	T _{D(ON)}	V _{GS} = 10V, V _{DS} = 30V, R _L = 5.4R, R _{GEN} = 3R, I _D = 5.5A	--	--	25	nS
Turn–On Rise Time	T _R		--	--	70	
Turn–Off Delay Tim	T _{D(OFF)}		--	--	300	
Turn–Off Fall Time	T _F		--	--	150	
Diode Forward Voltage	V _{SD}		V _{GS} = 0 V, I _S = 2 A	0.5	0.77	

1. The value of PD is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with T_A = 25° C. The value in any given application depends on the user's specific board design. The current rating is based on the DC thermal resistance rating and PCB layout: A. Minimum footprint; B. With additional heat sink.
2. Repetitive rating, pulse width limited by junction temperature



● TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

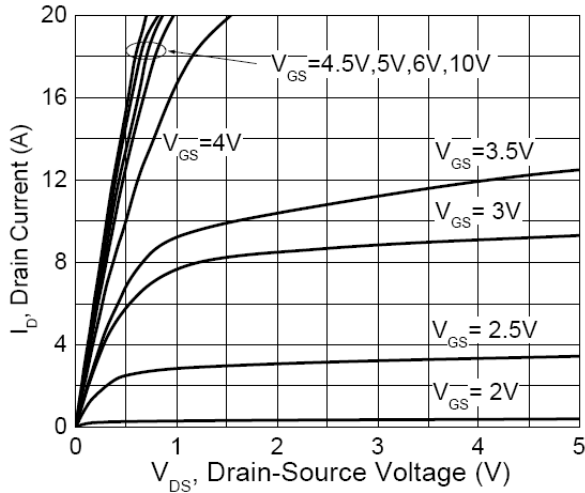


Figure 1. Output Characteristics

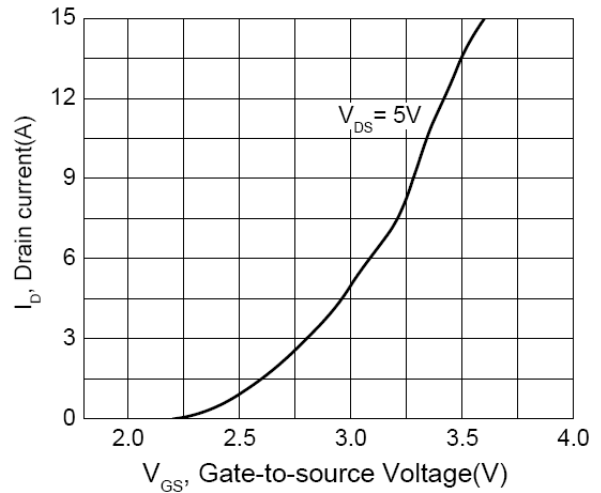


Figure 2. Transfer Characteristics

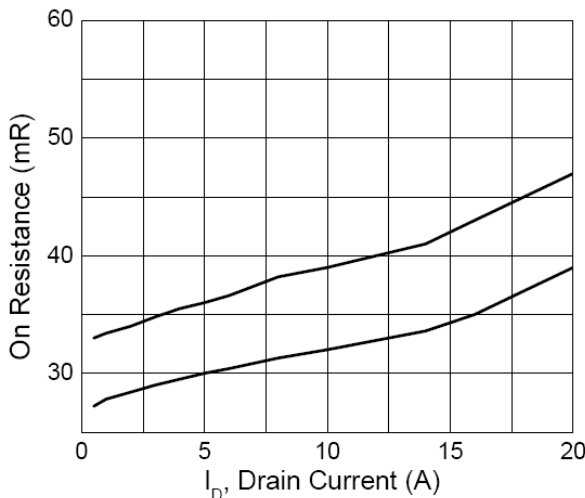


Figure 3. On-Resistance

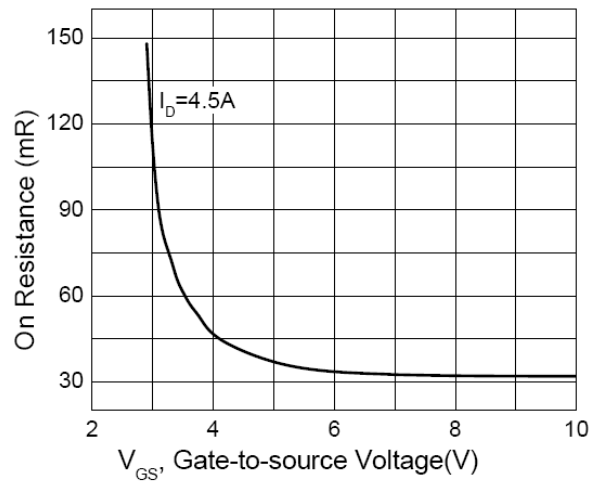


Figure 4. On-Resistance vs. Threshold Voltage

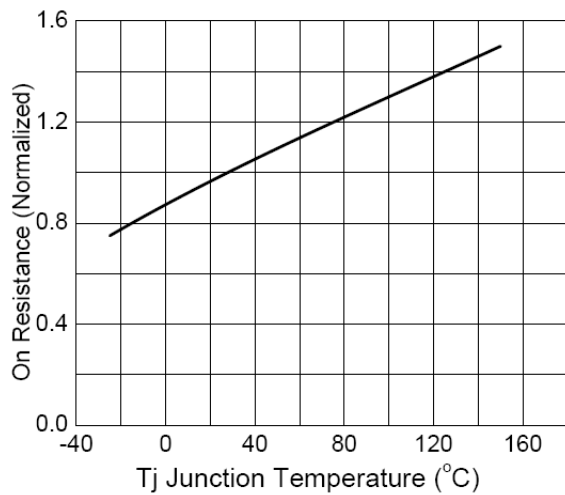


Figure 5. On-Resistance vs. Temperature

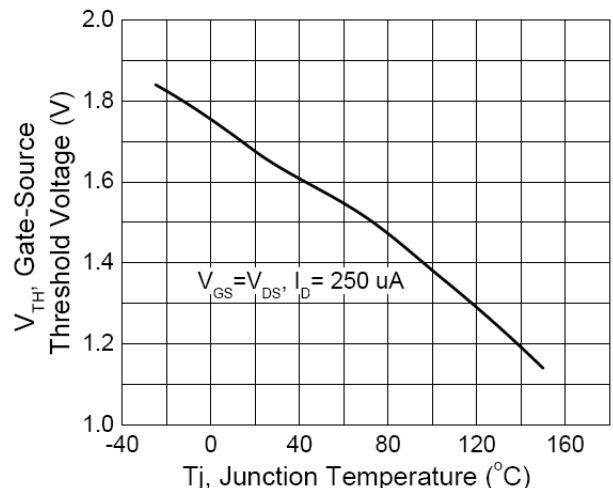
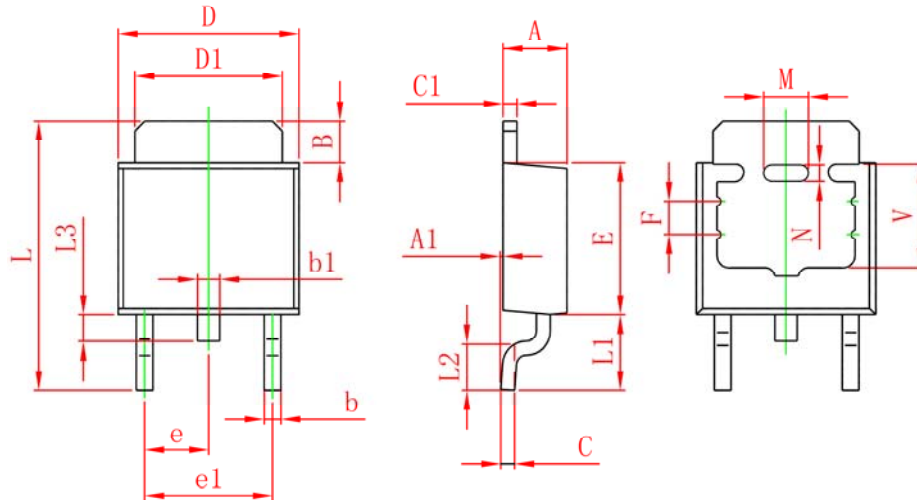


Figure 6. Gate Threshold Vs. Temperature



● **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	