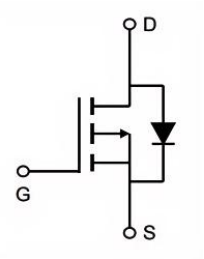
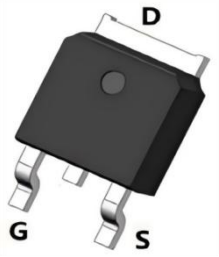
P-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	-200	V
$R_{DS(on)}$	645	mΩ
I_D	-7	A





TO-252

Features

- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

Applications

- DC-DC converters
- Motor control

Absolute Maximum Ratings (T_A=25℃,unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-200	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_C=25℃	I_D	-7	A
Continuous Drain Current [1]	T_C=100℃	I_D	-4.4	A
Pulsed Drain Current [2]		I_{DM}	-28	A
Single Pulse Avalanche Energy [3]		E_{AS}	81	mJ
Total Power Dissipation [4]	T_C=25℃	P_D	37.8	W
Operating Junction Temperature		T_J	-55 to 150	℃
Storage Temperature Range		T_{STG}	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction-ambient [1]	$R_{\theta JA}$	--	--	℃/W
Thermal Resistance Junction-Case [1]	$R_{\theta JC}$	--	3.3	℃/W

Electrical Characteristics(T_J=25℃,unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=-250μA, V_{GS}=0V	-200	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-200V,V_{GS}=0V,T_J=25℃	--	--	-1.0	μA
		V_{DS}=-200V,V_{GS}=0V,T_J=85℃	--	--	-100	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	--	--	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250μA	-2.0	-3.0	-4.0	V
Static Drain-Source ON-Resistance note [2]	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-3A	--	645	838	mΩ
Gate Resistance	R_g	V_{DS}=0V, V_{GS}=0V, f=1MHz	--	5.4	--	Ω
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-25V, f= 1MHz	--	2145	--	pF
Output Capacitance	C_{oss}		-	49.3	--	pF
Reverse Transfer Capacitance	C_{rss}		--	40.4	--	pF
Total Gate Charge	Q_g	V_{GS}=-10V V_{DS}= -50V, I_D=-5A	--	80	--	nC
Gate Source Charge	Q_{gs}		--	15	--	nC
Gate Drain("Miller") Charge	Q_{gd}		--	28	--	nC
Turn-On Delay Time	$t_{d(on)}$	V_{DD}= -50V, V_{GS}= -10V, R_G=3Ω, R_L=16Ω	--	17.3	--	ns
Turn-On Rise Time	t_r		--	4.2	--	ns
Turn-Off Delay Time	$t_{d(off)}$		--	49.6	--	ns
Turn-Off Fall Time	t_f		--	28	--	ns

Diode Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Diode continuous forward current [1,4]	I_S	V_G=V_D=0V, Force Current	--	--	-7	A
Diode Forward Voltage [2]	V_{SD}	V_{GS}=0V, I_S=-5A,T_J=25℃	--	--	-1.2	V
Reverse Recovery Time	t_{rr}	dI/dt=-100A/μs, I_F=-5A	--	63.6	--	ns
Reverse Recovery Charge	Q_{rr}		--	194	--	nC

Notes:

1.The data tested by surface mounted on a 1 inch$_2$ FR-4 board with 2OZ copper.

2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

3.The EAS data shows Max. rating . The test condition is V_{DD}=-50V,V_{GS}=-10V,L=1mH.

4.The power dissipation is limited by 150℃ junction temperature.

Typical Characteristics

Figure 1. Output Characteristics

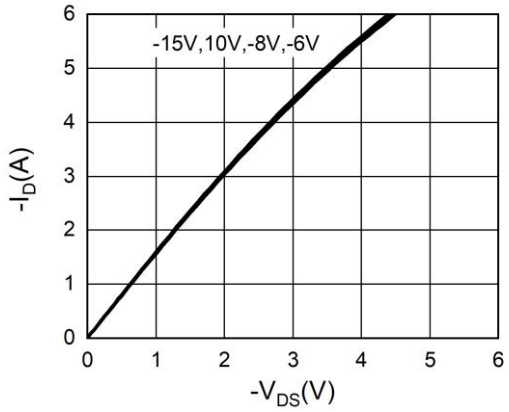


Figure 2. Transfer Characteristics

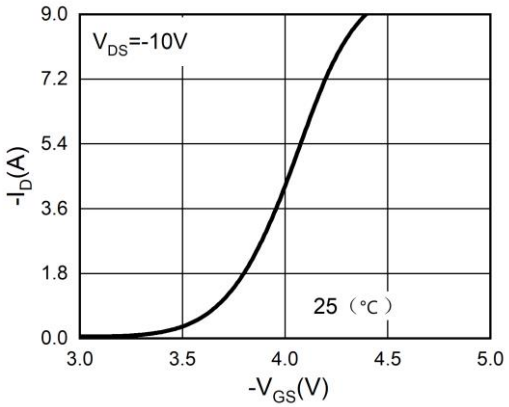


Figure 3. Power Dissipation

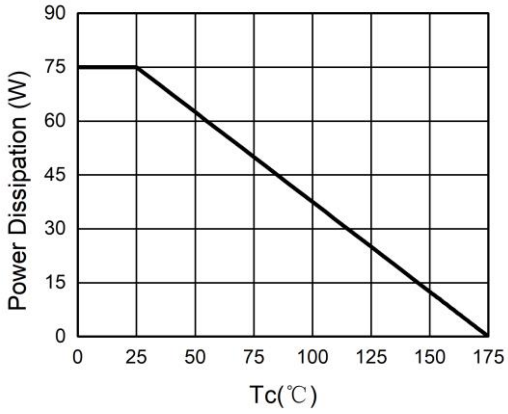


Figure 4. Drain Current

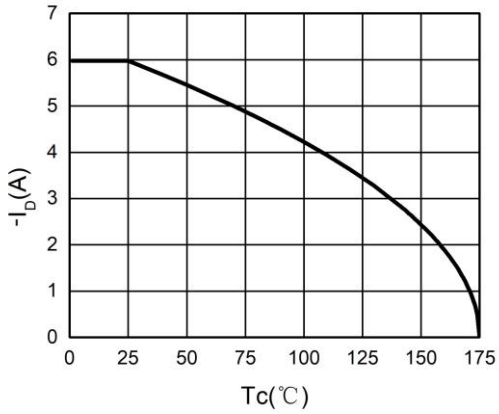


Figure 5. BV_{DSS} vs Junction Temperature

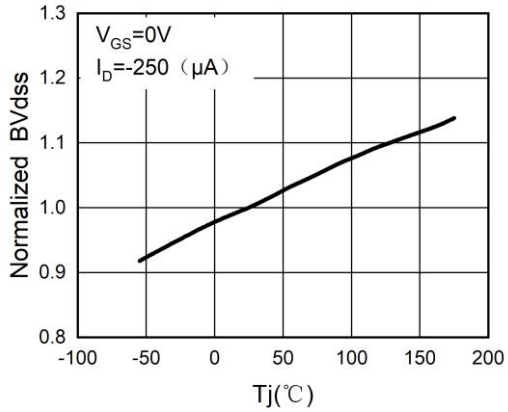


Figure 6. $R_{DS(ON)}$ vs Junction Temperature

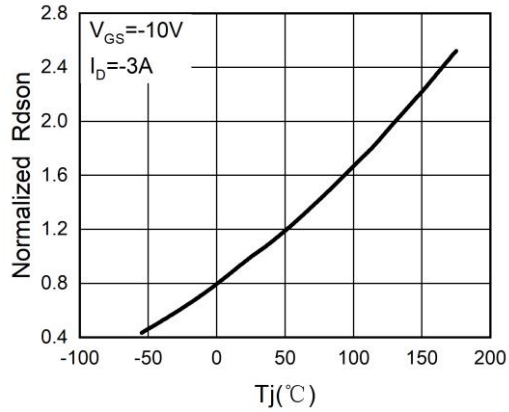


Figure 7. Gate Charge Waveforms

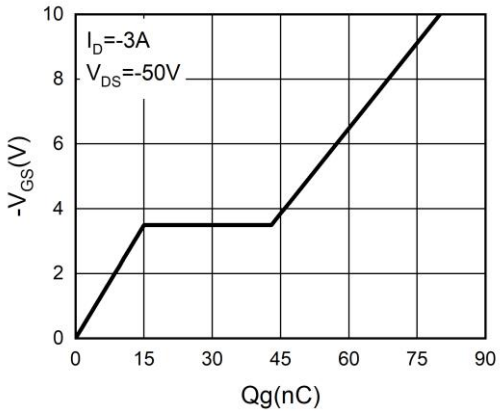


Figure 8. Capacitance

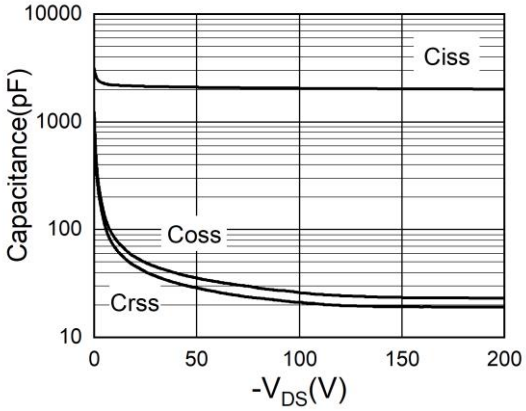


Figure 9. Body-Diode Characteristics

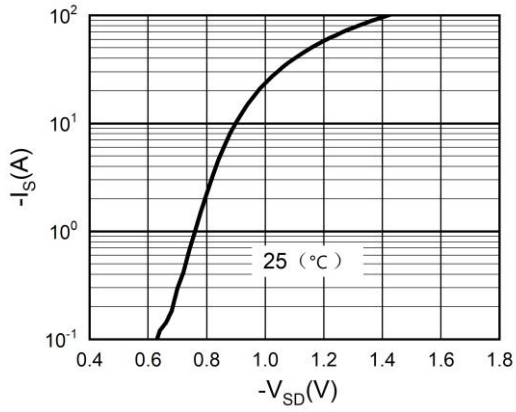
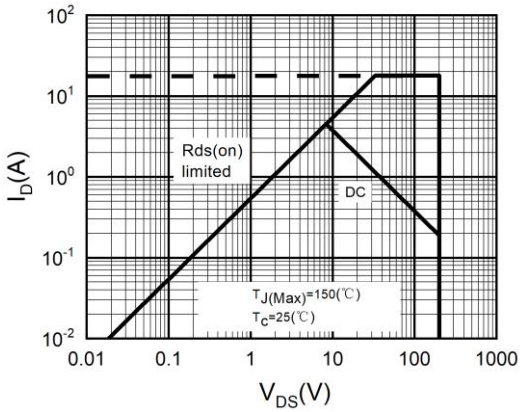
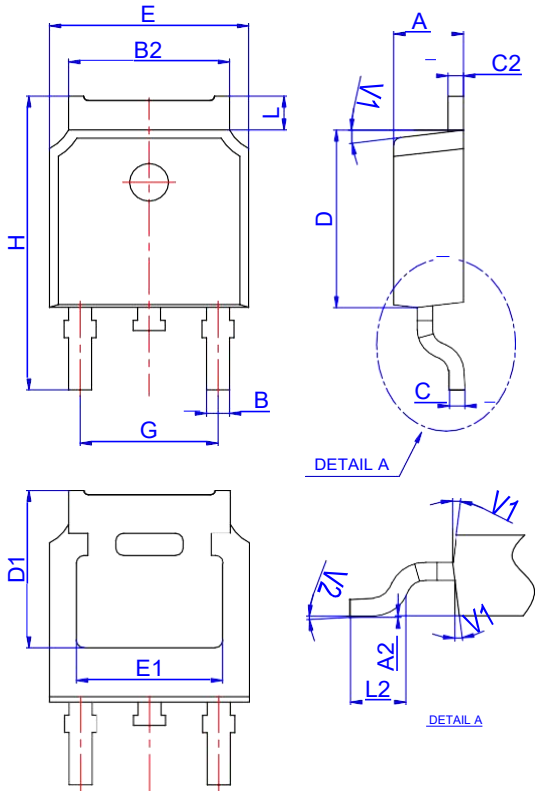


Figure 10. Maximum Safe Operating Area



Package Outlines Dimensions (Units: mm)

TO-252



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

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