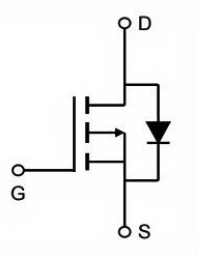
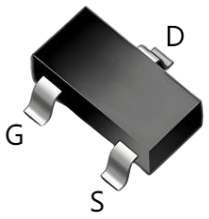
P-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	-30	V
$R_{DS(on)}$	42	mΩ
I_D	-4.5	A





SOT-23

Features

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

Applications

- Battery protection
- Load switch
- Power management

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

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	-4.5	A
Continuous Drain Current	T_A=70℃	I_D	-3.6	A
Pulsed Drain Current[2]		I_{DM}	-16	A
Total Power Dissipation[3]	T_A=25℃	P_D	1.4	W
Total Power Dissipation[3]	T_A=70℃	P_D	0.9	W
Storage Temperature Range		T_{STG}	-55 to 150	℃
Operating Junction Temperature Range		T_J	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction-Ambient [1]	$R_{\theta JA}$	---	105	℃/W

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V	-	-	-1	μA
Gate-Source Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	± 100	nA
Gate-Source Threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1	-1.5	-2.5	V
Drain-Source on-State Resistance[3]	$R_{DS(on)}$	V_{GS}=-10V, I_D=-4.1A	-	42	60	mΩ
		V_{GS}=-4.5V, I_D=-3A	-	54	85	
Dynamic Characteristics[4]						
Input Capacitance	C_{iss}	V_{GS}=0V , V_{DS}=-15V, f=1.0MHz	-	530	-	pF
Output Capacitance	C_{oss}		-	70	-	
Reverse Transfer Capacitance	C_{rss}		-	56	-	
Switching Characteristics[4]						
Total Gate Charge	Q_g	V_{GS}=-10V, V_{DS}=-15V, I_D=-4.1A	-	6.8	-	nC
Gate−Source Charge	Q_{gs}		-	1.0	-	
Gate−Drain Charge	Q_{gd}		-	1.4	-	
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=-10V, V_{DS}=-15V, R_L=15Ω, R_{GEN}=2.5Ω	-	14	-	ns
Rise Time	t_r		-	61	-	
Turn-off Delay time	$td_{(off)}$		-	19	-	
Fall Time	t_f		-	10	-	
Source-Drain Body Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	I_S=-4.1A, V_{GS}=0V	-	-	-1.2	V
Continuous Source Current	I_S		-	-	-4.1	A

Notes:
1. Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150℃.
2. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width≤30us, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

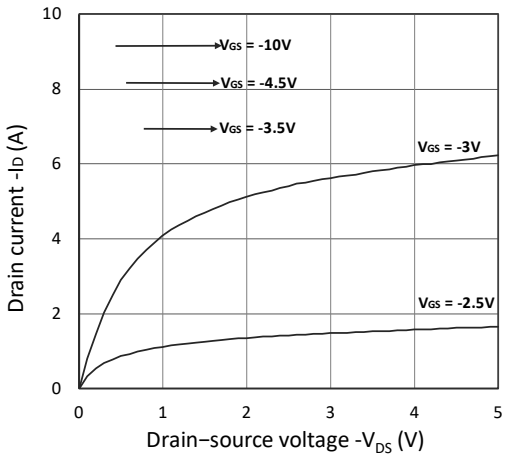


Figure 1. Output Characteristics

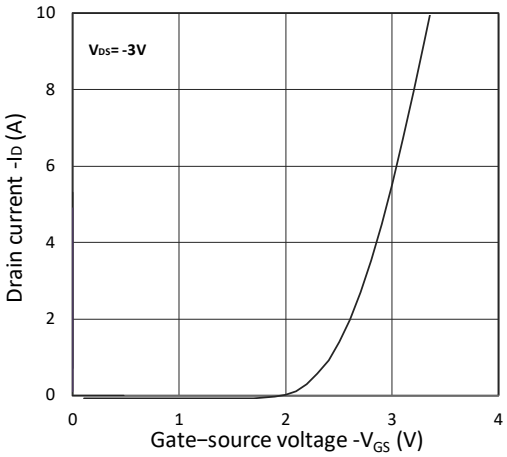


Figure 2. Transfer Characteristics

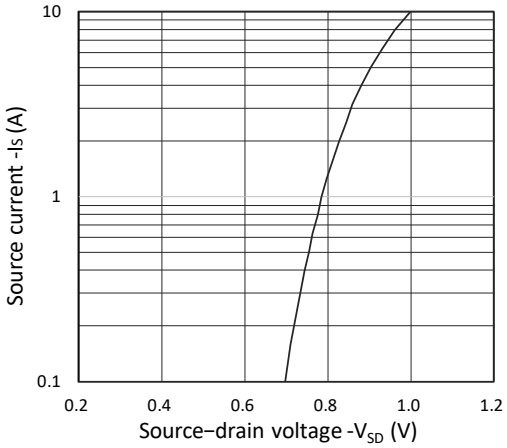


Figure 3. Forward Characteristics of Reverse

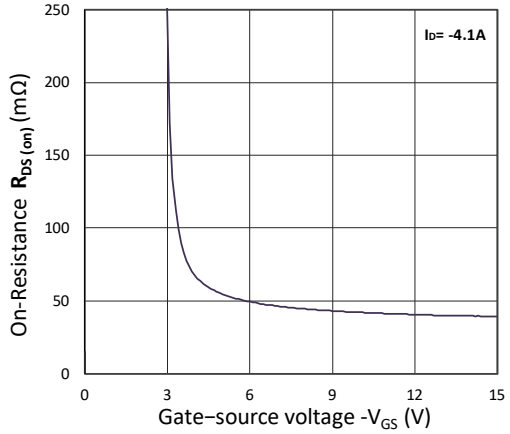


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

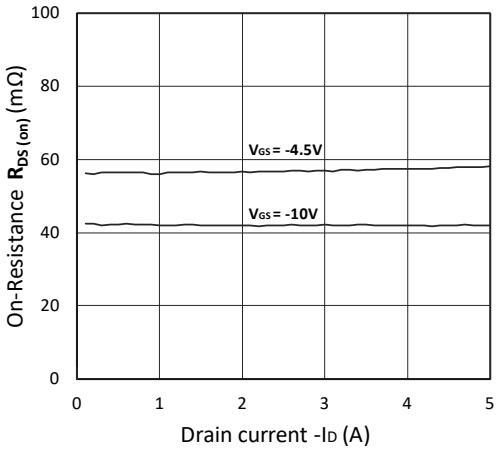


Figure 5. $R_{DS(ON)}$ vs. I_D

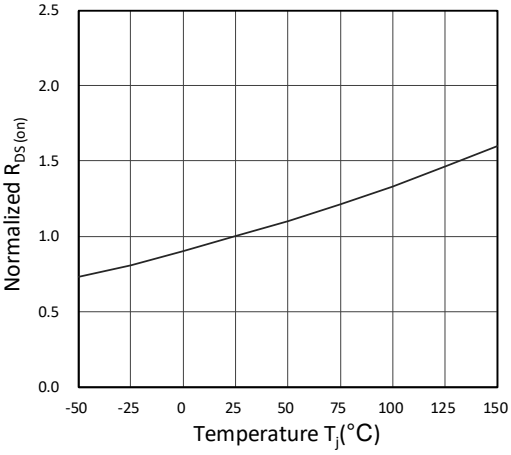


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

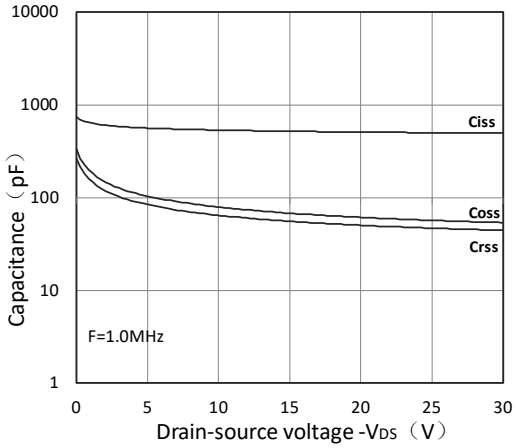


Figure 7. Capacitance Characteristics

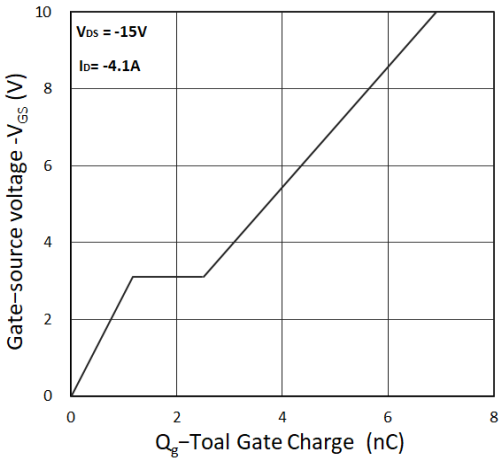
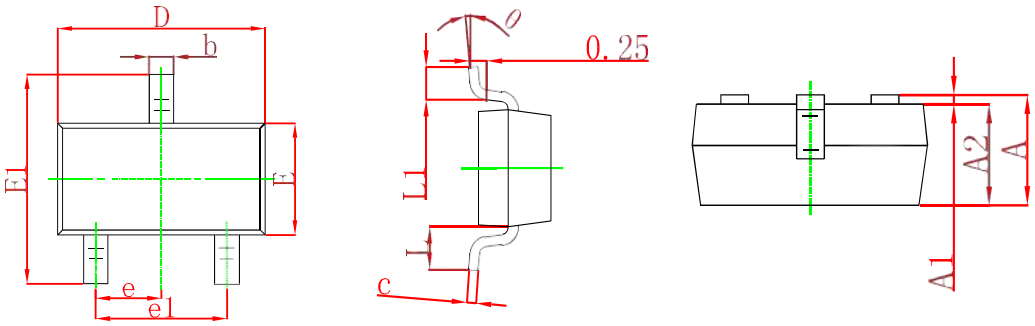


Figure 8. Gate Charge Characteristics

Package Outline Dimensions (Units: mm)

SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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