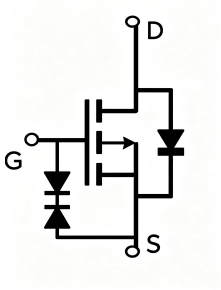
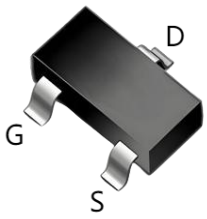
P-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	-17	V
$R_{DS(on)}$	30	mΩ
I_D	-5.0	A





SOT-23

Features

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

Applications

- Battery protection
- Load switch
- Power management

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

Parameter		Symbol	Value		Units
			10s	Steady State	
Drain-Source Voltage		V_{DS}	-17		V
Gate-Source Voltage		V_{GS}	±10		V
Continuous Drain Current	T_A=25℃	I_D	-5.	-4.	A
Continuous Drain Current	T_A=70℃	I_D	-4.	-3.7	A
Pulsed Drain Current [2]		I_{DM}	-18		A
Total Power Dissipation [3]	T_A=25℃	P_D	1.32	1	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]	$R_{\theta JA}$	-	125	℃/W
Thermal Resistance Junction-Ambient [1] (t ≤10s)	$R_{\theta JA}$	-	95	℃/W
Thermal Resistance Junction-Case [1]	$R_{\theta JC}$	-	80	℃/W

Electrical Characteristics(T_J=25℃unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V , I_D=-250uA	-17	-	-	V
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	V_{GS}=-4.5V , I_D=-1A	-	30	40	mΩ
		V_{GS}=-2.5V , I_D=-1A	-	38	50	
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS} , I_D=250uA	-0.4	-0.7	-1	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=-17V, V_{GS}=0V T_J=25℃	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}= ±12V , V_{DS}=0V	-	-	±100	nA
Total Gate Charge	Q_g	V_{DS}=-10V , V_{GS}=-4.5V I_D=-3A	-	13	-	nC
Gate-Source Charge	Q_{gs}		-	1.5	-	
Gate-Drain Charge	Q_{gd}		-	3.9	-	
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=-4.5V,V_{DD}=-10V R_L=0.75Ω , R_{GEN}=3Ω I_D=-3.3A	-	18	-	ns
Rise Time	T_r		-	48	-	
Turn-Off Delay Time	$T_{d(off)}$		-	43	-	
Fall Time	T_f		-	15	-	
Input Capacitance	C_{iss}	V_{DS}=-10V , V_{GS}=0V f=1MHz	-	833	-	pF
Output Capacitance	C_{oss}		-	147	-	
Reverse Transfer Capacitance	C_{rss}		-	33	-	

Diode Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Continuous Source Current[1,5]	I_S	V_G=V_D=0V , Force Current	-	-	-5	A
Diode Forward Voltage[2]	V_{SD}	V_{GS}=0V , I_S=-1A , T_J=25℃	-	-	1.2	V

Note :
1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
3. The power dissipation is limited by 150℃ junction temperature
4. The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

Typical Characteristics

Figure1: Output Characteristics

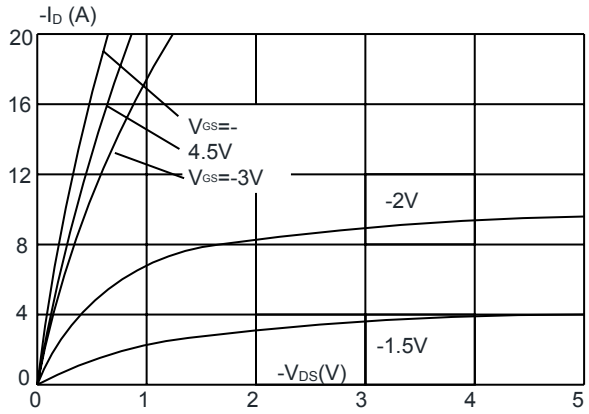


Figure 2: Typical Transfer Characteristics

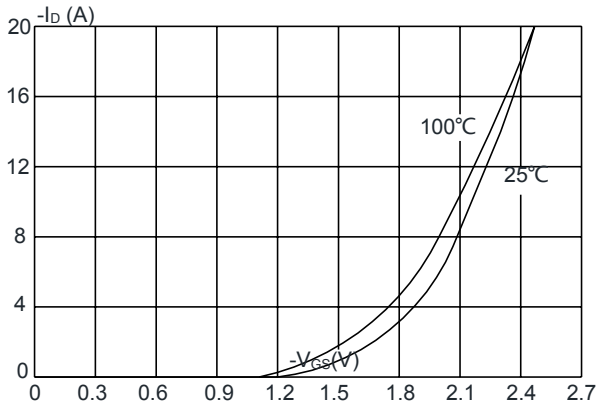


Figure 3: On-resistance vs. Drain Current

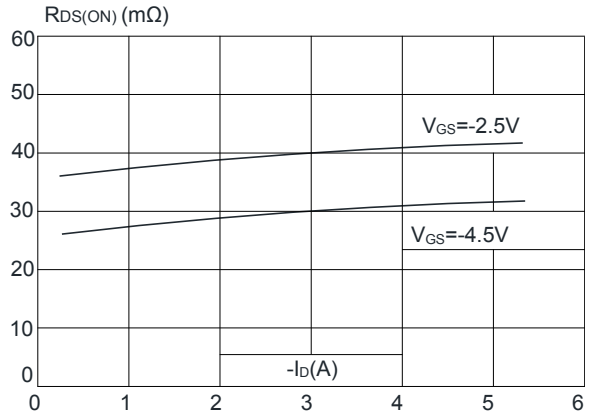


Figure 4: Body Diode Characteristics

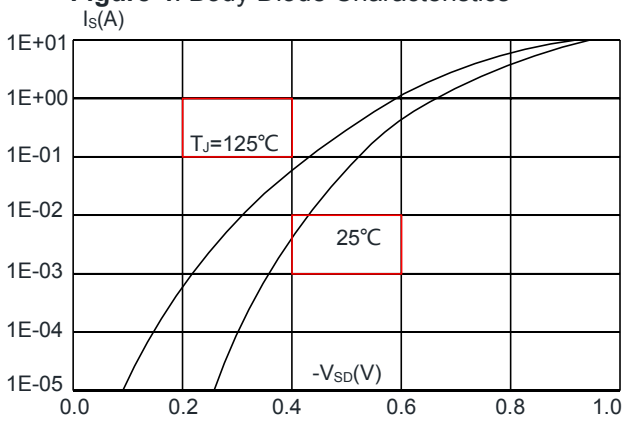


Figure 5: Gate Charge Characteristics

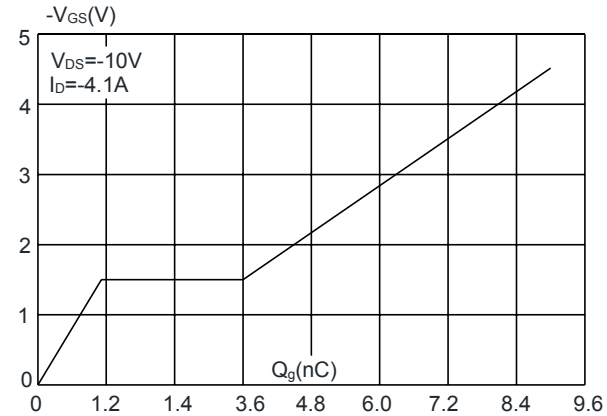


Figure 6: Capacitance Characteristics

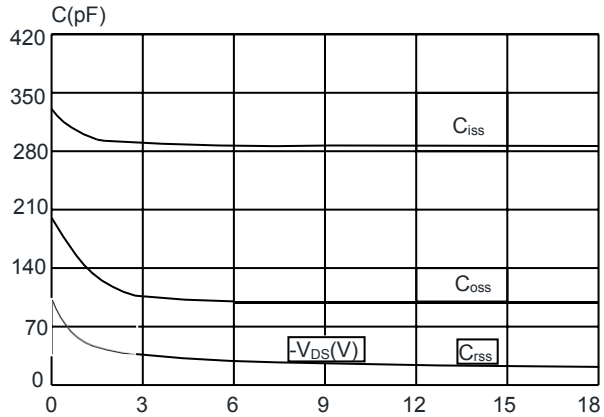


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

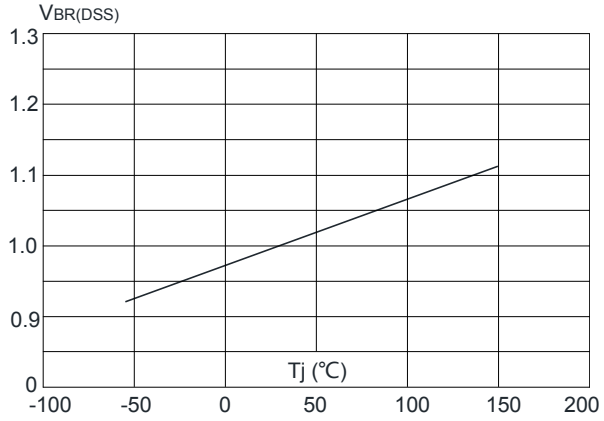


Figure 8: Normalized on Resistance vs. Junction Temperature

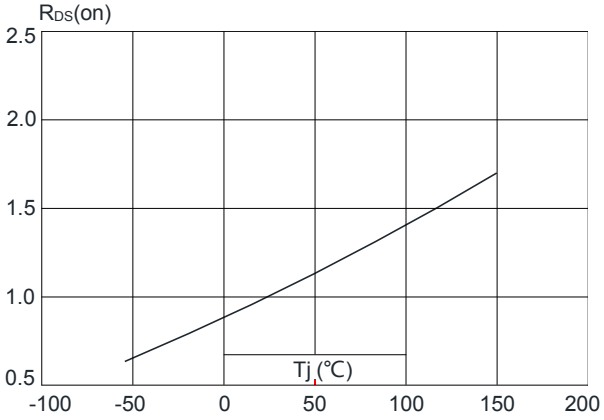


Figure 9: Maximum Safe Operating Area

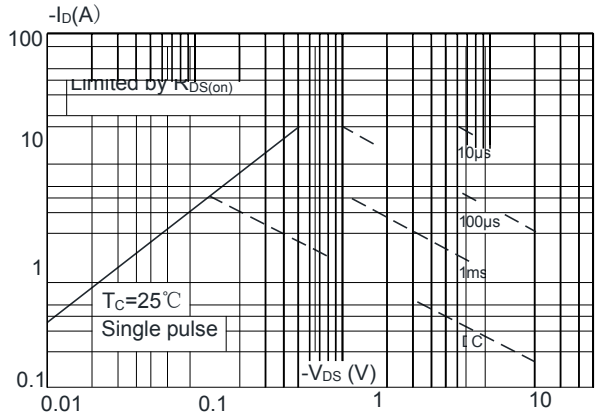


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

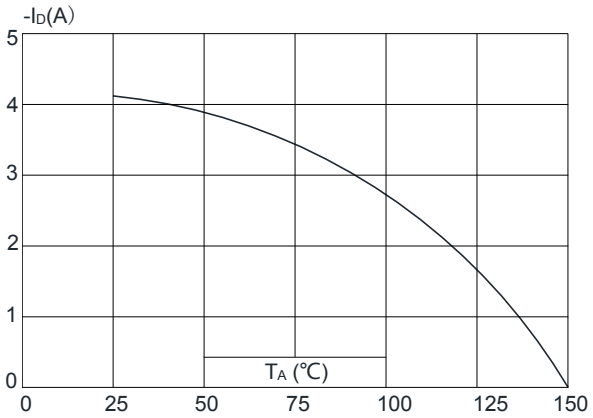
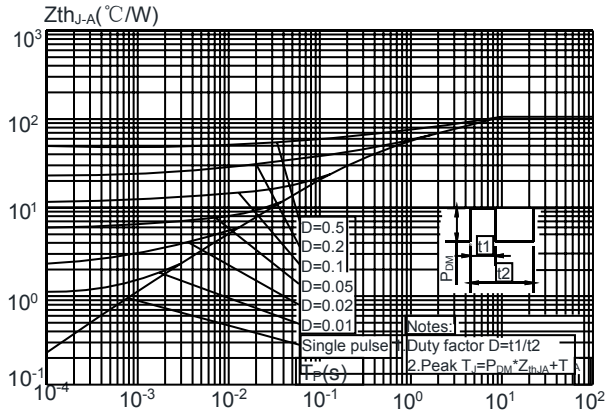
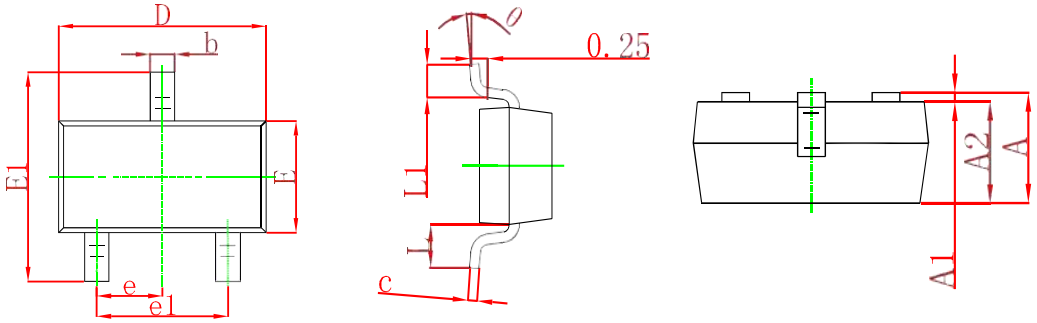


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



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	0.950 TYP		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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