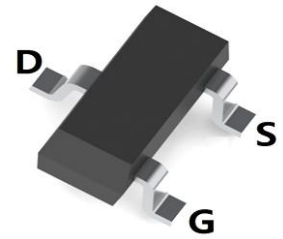
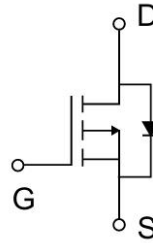


P-Channel Enhancement Mode MOSFET -30V/-3.8A

Parameter	Value	Unit
V _{DS}	-30	V
R _{DS(on)}	45	mΩ
I _D	-3.8	A



SOT-23

APPLICATIONS

- Low Side Load Switch
- Battery Switch
- Optimized for Power Management Applications for Portable Products, such as Aeromodelling, Power bank, Brushless motor, Main board , and Others

ABSOLUTE MAXIMUM RATINGS(T_a=25°C unless otherwise noted)

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{(BR)DSS}	Drain-Source Breakdown Voltage		-30	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	TA =25°C	-3.8	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested (Silicon Limit) (Note1)	TA =25°C	-20	A
I _D	Continuous Drain current	TA =25°C	-3.8	A
P _D	Maximum Power Dissipation	TA =25°C	1.35	W
R _{θJA}	Thermal Resistance Junction-to-Ambient (Note2)		92.6	°C/W

ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain- Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain current	V _{DS} =-30V, V _{GS} =0V	-	-	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1	-	-2.2	V

R _{DS(ON)}	Drain-Source On-State Resistance (Note3)	VGS=-10V, ID=-3.8A	-	45	65	mΩ
		VGS=-4.5V, ID=-3A	-	60	87	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated) (Note4)						
C _{iss}	Input Capacitance	VDS= -15V, VGS=0V, F=1MHz	-	440	-	pF
C _{Oss}	Output Capacitance		-	10	-	pF
C _{rss}	Reverse Transfer Capacitance		-	3	-	pF
Q _g	Total Gate Charge	VDS= -15V, ID= -4A, VGS= -4.5V	-	6.4	-	nC
Q _{gs}	Gate-Source Charge		-	2.3	-	nC
Q _{gd}	Gate-Drain Charge		-	1.1	-	nC
Switching Characteristics (Note4)						
t _{d(on)}	Turn-on Delay Time	VDD=-15V, ID=-1A, RG=15Ω, VGS=-10V	-	7.3	-	nS
t _r	Turn-on Rise Time		-	1.6	-	nS
t _{d(off)}	Turn-off Delay Time		-	15	-	nS
t _f	Turn-off Fall Time		-	2.7	-	nS
Source- Drain Diode Characteristics@ TJ = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage (Note3)	IS=-2.6A,VGS=0V	-	-	-1.3	V

Note:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2.Surface Mounted on FR4 Board, t ≤ 10 sec
- 3.Pulse Test: pulse width ≤ 300 us, duty cycle ≤ 2%.
- 4.Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS

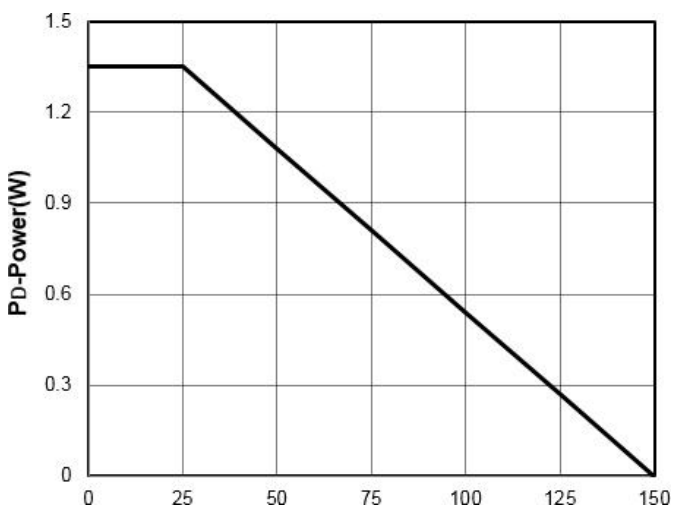


Figure1: TJ Junction Temperature (°C)

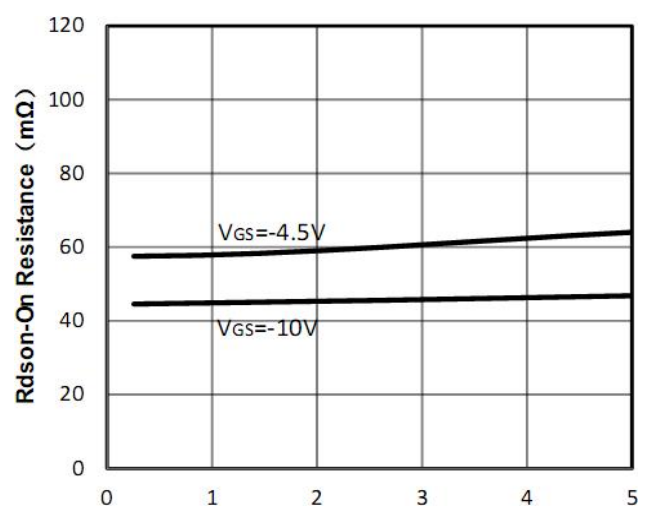


Figure2: -ID Drain Current (A)

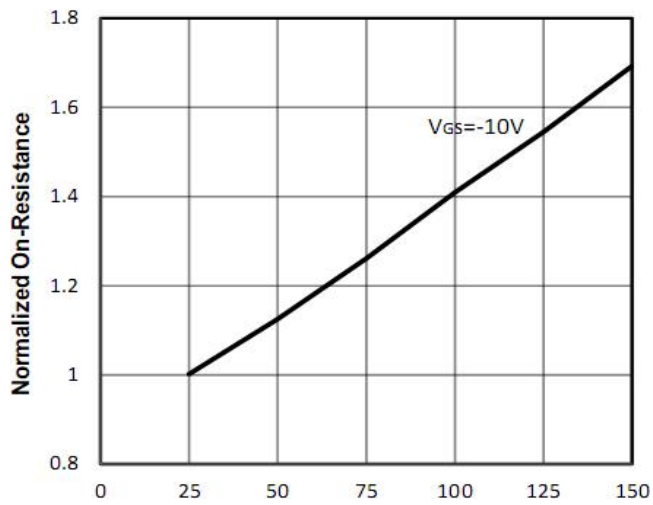


Figure3: T_J Junction Temperature (°C)

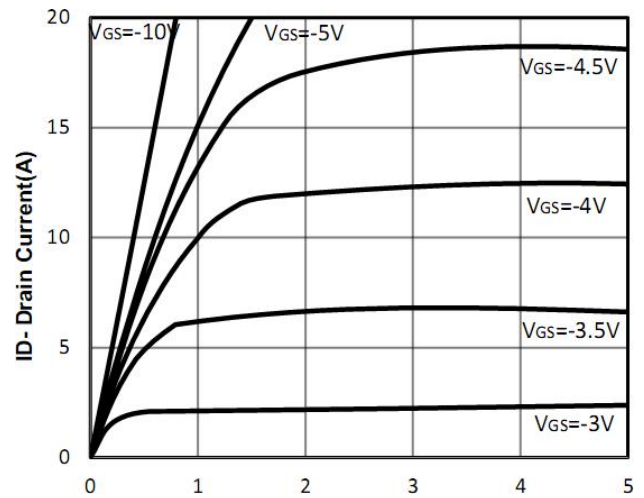


Figure4: $-V_{DS}$ Drain-Source Voltage (V)

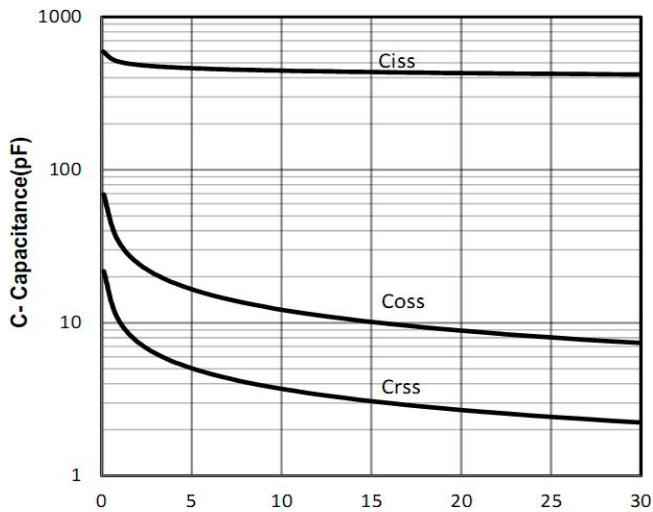


Figure5: $-V_{DS}$ Drain-Source Voltage (V)

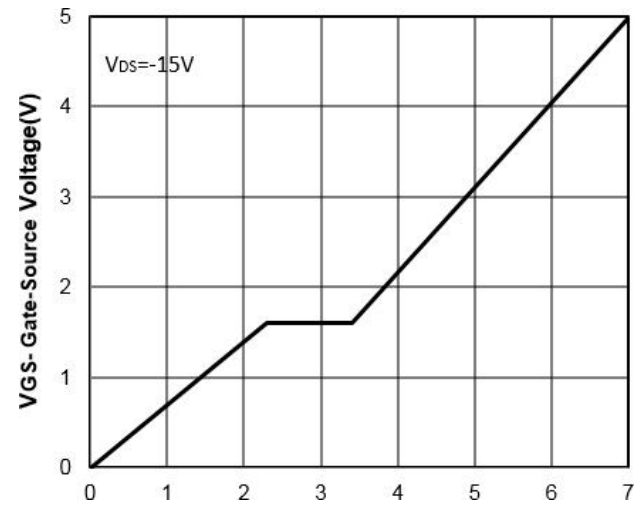


Figure6: Q_g Gate Charge (nC)

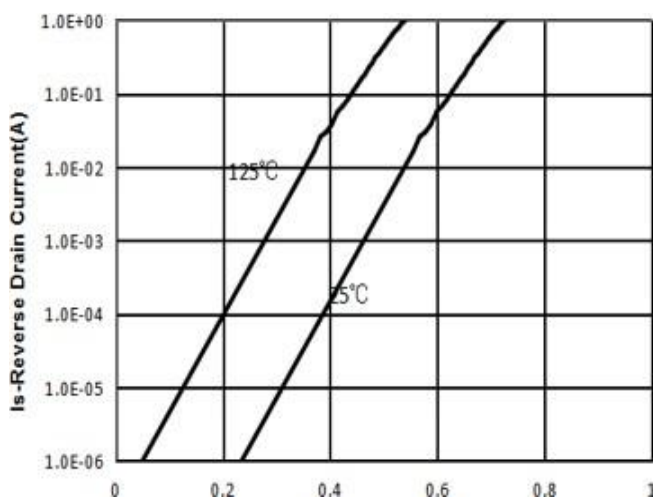


Figure7: $-V_{SD}$ Source-Drain Voltage (V)

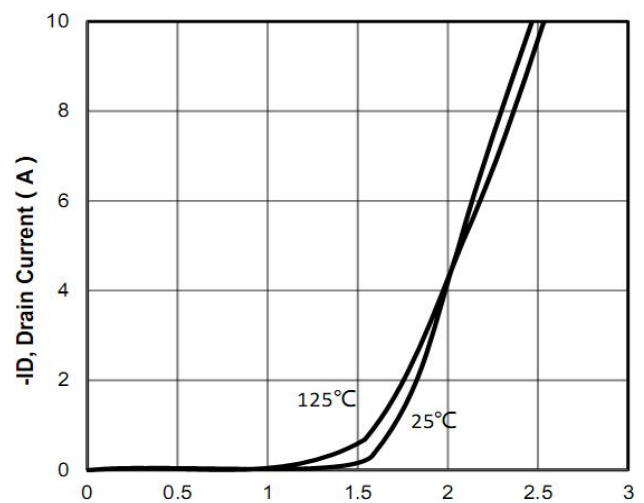


Figure8: $-V_{GS}$ Gate-Source Voltage (V)

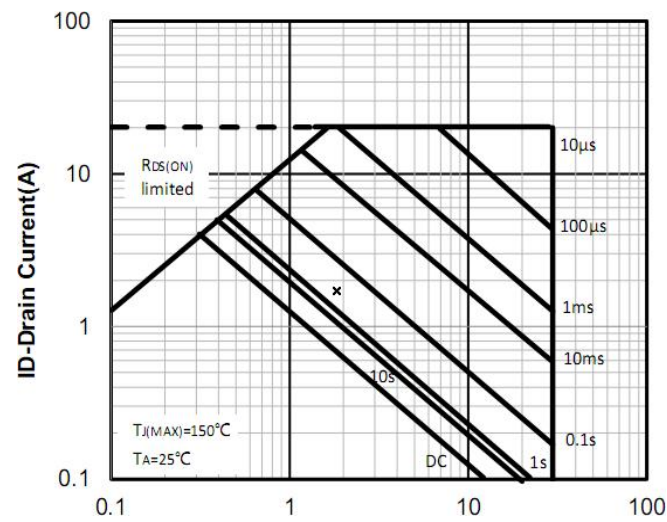


Figure9: $-V_{DS}$ Drain -Source Voltage (V)

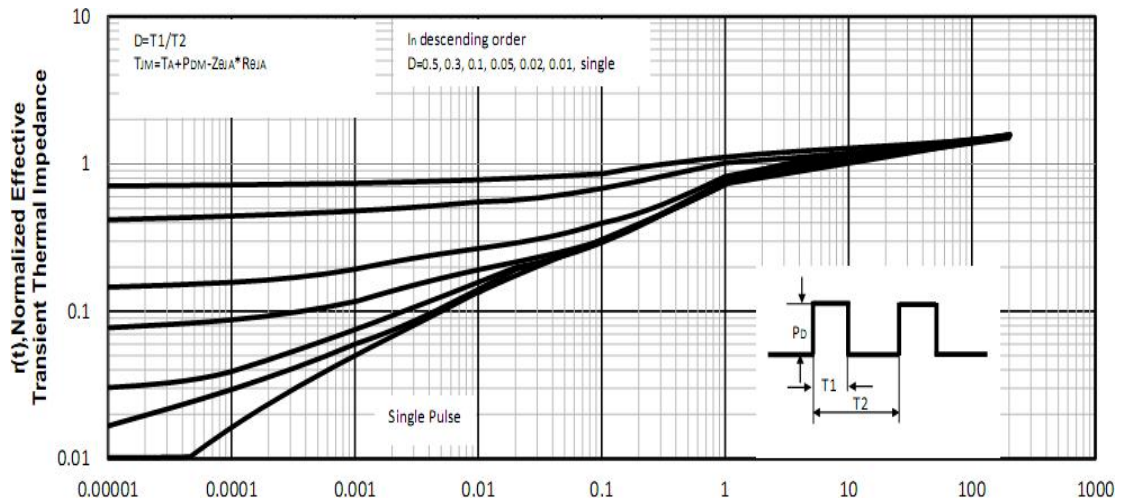
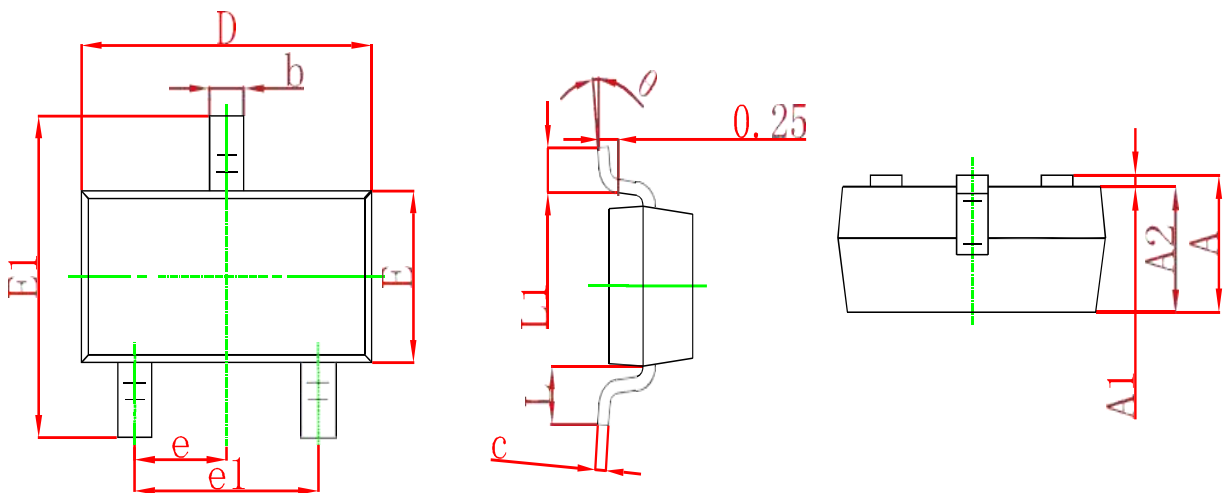


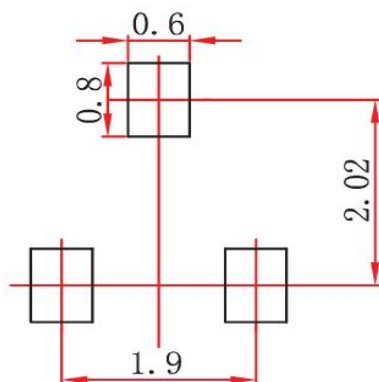
Figure10: Square Wave Pulse Duration (sec)

PACKAGE OUTLINE



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°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

*Important Usage Information and Disclaimer

The specifications of Zhuhai Hypersemi Co., Ltd. products are not guarantees of product characteristics. They reflect typical performance expected in standard applications, which may vary with specific uses. Users must conduct prior testing for their applications and make necessary adjustments.

Users are responsible for the safety of applications utilizing our products and must implement adequate safety measures to prevent physical injury, fire, or other risks in case of product failure. It is the user's duty to ensure that application designs comply with all applicable laws and standards. Our products must not be used in any applications where a product failure could reasonably result in personal injury, unless specifically authorized in a signed document by Zhuhai Hypersemi Co., Ltd.

No representations or warranties are made regarding the accuracy or completeness of this information, including any claims of non-infringement of third-party intellectual property rights. Zhuhai Hypersemi Co., Ltd. assumes no liability for any applications or uses of its products and does not grant any licenses to its intellectual property rights or those of others. We also make no claims regarding non-infringement of third-party intellectual property rights that may arise from applications.

Due to technical requirements, our products may contain hazardous substances. For details, please contact your nearest sales office. This document replaces all previous information and may be updated. We reserve the right to make changes.