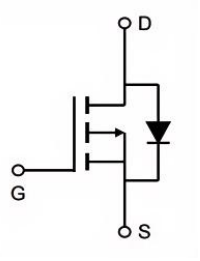
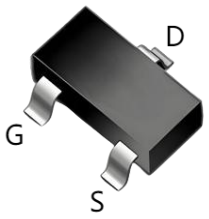
P-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	-50	V
$R_{DS(on)}$	3.6	Ω
I_D	-0.13	A





SOT-23

Features

- Advanced trench cell design
- High speed switch
- Low Gate Charge

Applications

- Portable appliances
- Video monitor

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

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-50	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25℃	I_D	-0.13	A
Pulsed Drain Current	T_C=25℃	I_{DM}	-0.52	A
Total Power Dissipation	T_C=25℃	P_D	0.225	W
Thermal Resistance Junction to Ambient		$R_{\theta JA}$	556	℃W
Maximum Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-50 to 150	℃

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Electrical Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-50	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-50V, V_{GS}=0V	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.0	-1.4	-2.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-0.13A	-	3.6	5.0	Ω
		V_{GS}=-4.5V, I_D=-0.1A	-	4.0	6.0	Ω
Dynamic Electrical Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-30V, V_{GS}=0V, f=1MHz	-	43	-	pF
Output Capacitance	C_{oss}		-	2.9	-	pF
Reverse Transfer Capacitance	C_{rss}		-	1.8	-	pF
Switching Characteristics						
Total Gate Charge	Q_g	V_{DD}=-30V, I_D=-0. 15A, V_{GS}=-4.5V	-	1.77	-	nC
Gate Source Charge	Q_{gs}		-	0.57	-	nC
Gate Drain Charge	Q_{gd}		-	0.18	-	nC
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-30V, I_D=-0.15A V_{GS}=-4.5V, R_G=2.5Ω	-	8.6	-	nS
Turn-on Rise Time	t_r		-	20	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	15	-	nS
Turn-Off Fall Time	t_f		-	77	-	nS
Source-Drain Diode Characteristics						
Diode Continuous Forward Current	I_S		-	-	-0.13	A
Forward on voltage	V_{SD}	T_j=25 ℃, I_S=-0.13A	-	-	-1.2	V

Typical Characteristics

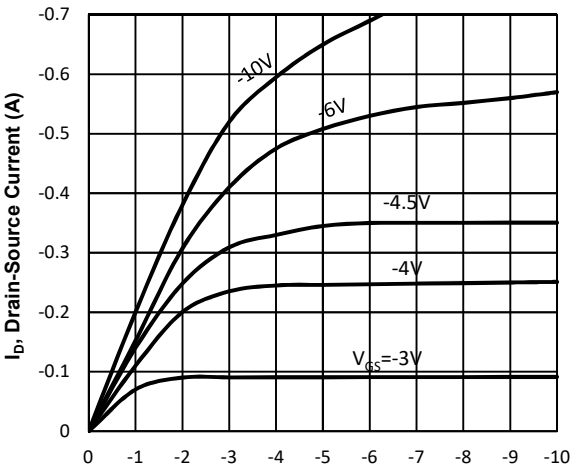


Fig1. Typical Output Characteristics

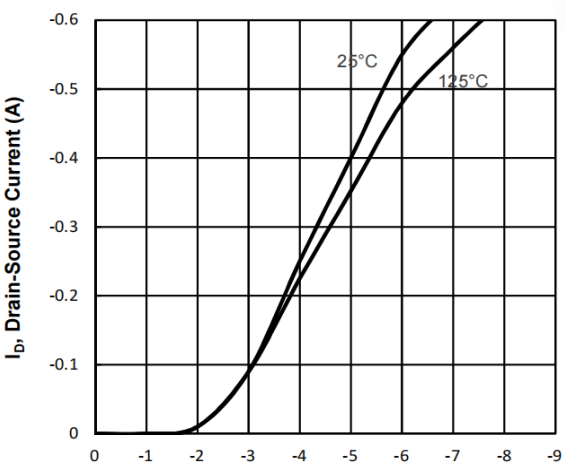


Fig2. Typical Transfer Characteristics

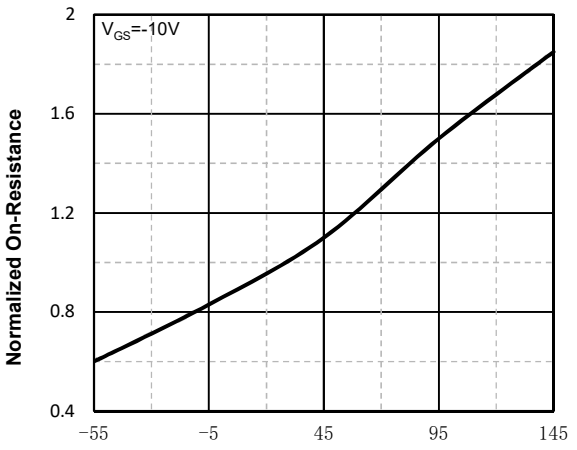


Fig3. Normalized On-Resistance Vs. Temperature

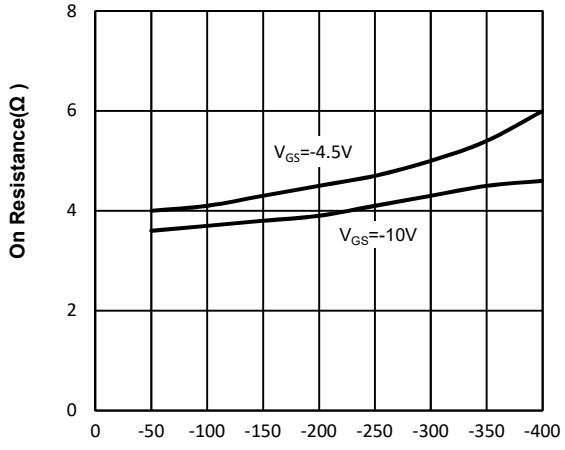


Fig4. On Resistance Vs.Drain-Source Current

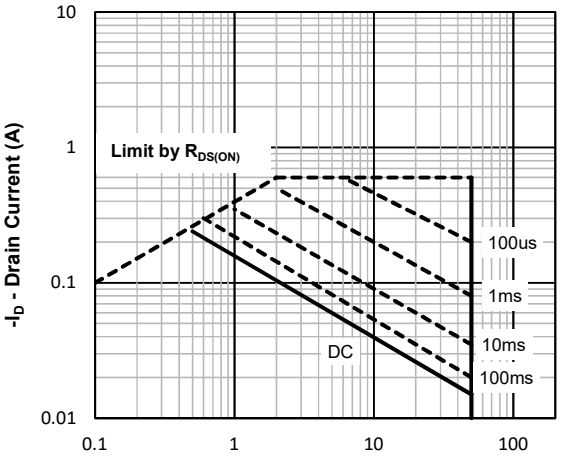


Fig5. Maximum Safe Operating Area

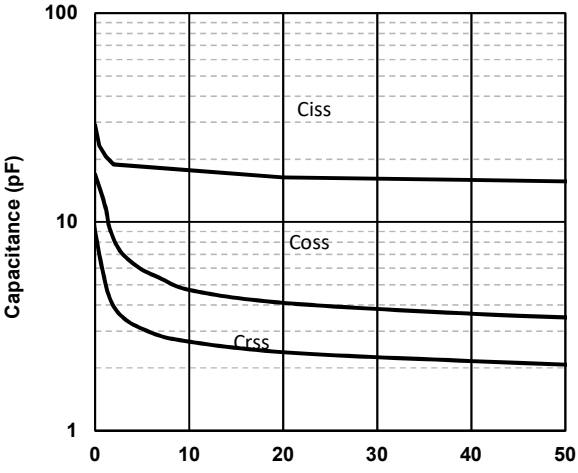
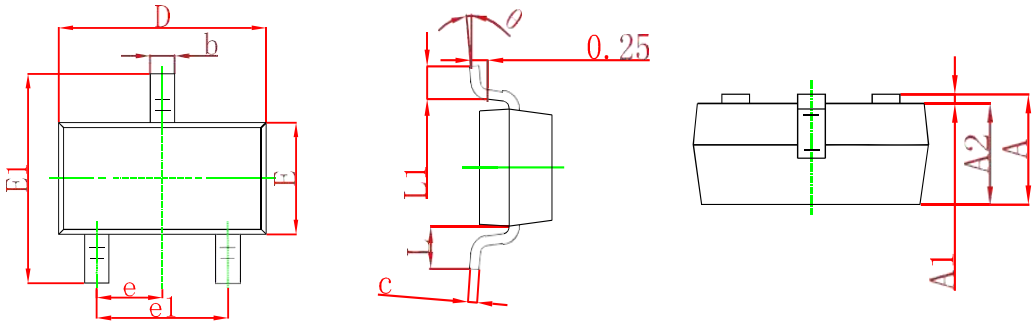


Fig6 Typical Capacitance Vs.Drain-Source Voltage

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°

***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.