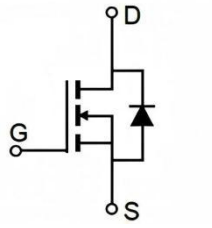
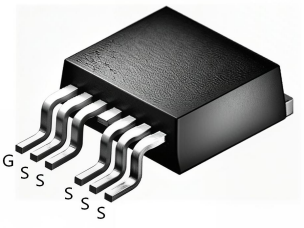
N-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	100	V
$R_{DS(on)}$	1.9	mΩ
I_D	200	A





TO-263-7

Features

- Fast Switching
- Low Gate Charge and Rps(oN)
- Low Reverse transfer capacitance

Applications

- DC Motor Drive
- Uninterruptible Power Supply
- High Speed Power Switching

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

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	Ta=25℃	I_D	200	A
Continuous Drain Current	Ta=100℃	I_D	140	A
Pulsed Drain Current		I_{DM}	800	A
Single Pulse Avalanche Energy [1]		E_{AS}	4622	mJ
Total Power Dissipation	Ta=25℃	P_D	400	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	$R_{\theta JA}$	--	62	℃/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	--	0.31	℃/W

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	B_{VDSS}	V_{GS}=0V, I_D=250uA	100	--	--	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=100A	--	1.9	2.3	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250uA	2	--	4	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V	--	--	1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	--	--	±100	nA
Forward Transconductance	g_{fs}	V_{DS}=10V, I_D=20A	--	55	--	S
Gate Resistance	R_g	V_{DS}=0V, V_{GS}=0V, f=1MHz	--	2	--	Ω
Total Gate Charge	Q_g	I_D=90A V_{DS}=50V V_{GS}=10V	--	169	--	nC
Gate-Source Charge	Q_{gs}		--	67	--	
Gate-Drain Charge	Q_{gd}		--	30	--	
Turn-On Delay Time	$T_{d(on)}$	V_{DD}=50V R_G=3Ω V_{GS}=10V	--	35	--	ns
Rise Time	T_r		--	111	--	
Turn-Off Delay Time	$T_{d(off)}$		--	84	--	
Fall Time	T_f		--	112	--	
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V , f=1MHz	--	14300	--	pF
Output Capacitance	C_{oss}		--	4700	--	
Reverse Transfer Capacitance	C_{rss}		--	370	--	

Diode Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Continuous Source Current	I_S	V_G=V_D=0V , Force Current	--	--	200	A
Pulsed Source Current	I_{SM}		--	--	800	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V , I_S=100A ,T_J=25℃	--	0.86	1.4	V
Reverse Recovery Time	t_{rr}	di/dt=100A/μs T_J=25℃, I_F=90A	--	101	--	ns
Reverse Recovery Charge	Q_{rr}		--	338	--	nC

Note :

1.The EAS data shows Max. rating. The test condition is VDD=100V , VGS=10V , L=5mH , IAS=43A.

Typical Characteristics

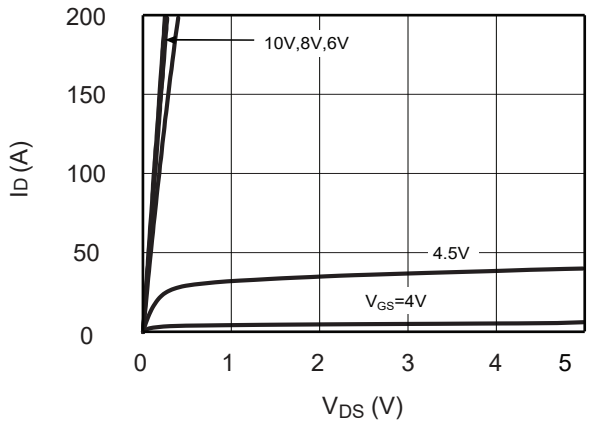


Fig 1.Output Characteristics

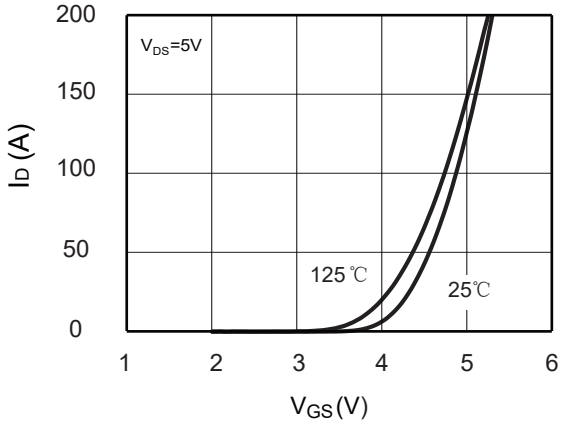


Fig 2. Transfer characteristics

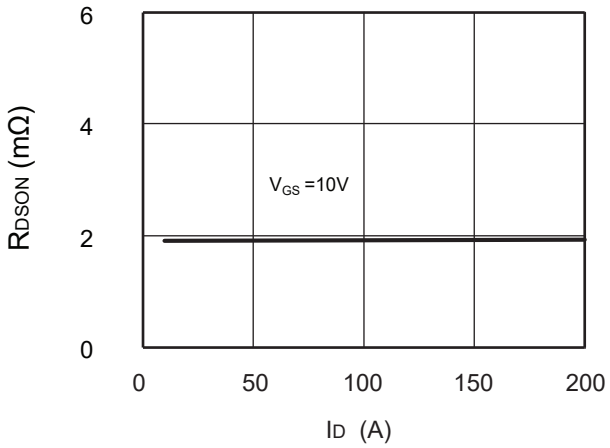


Fig 3. Drain-source on-resistance

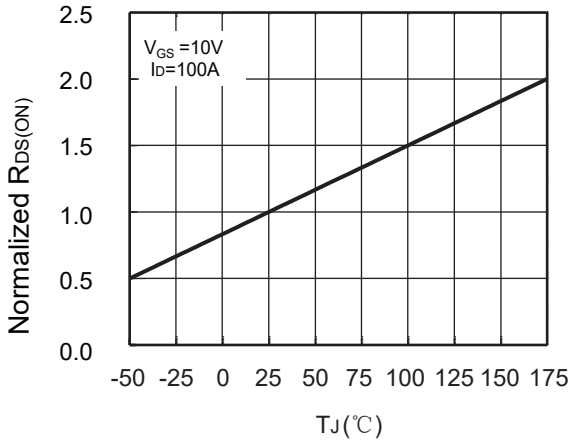


Fig 4. On-Resistance vs. Junction Temperature

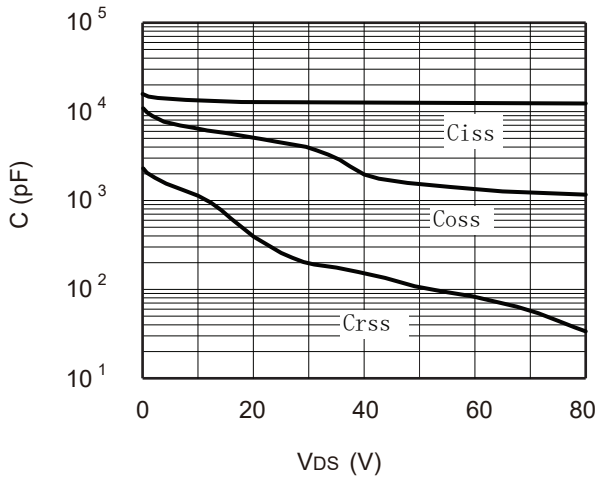


Fig 5. Capacitance Characteristics

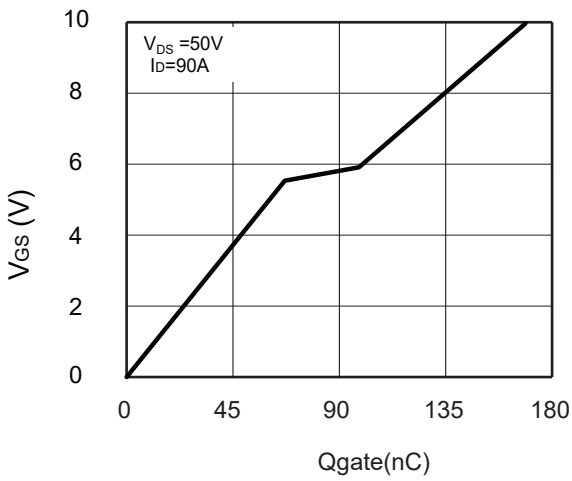
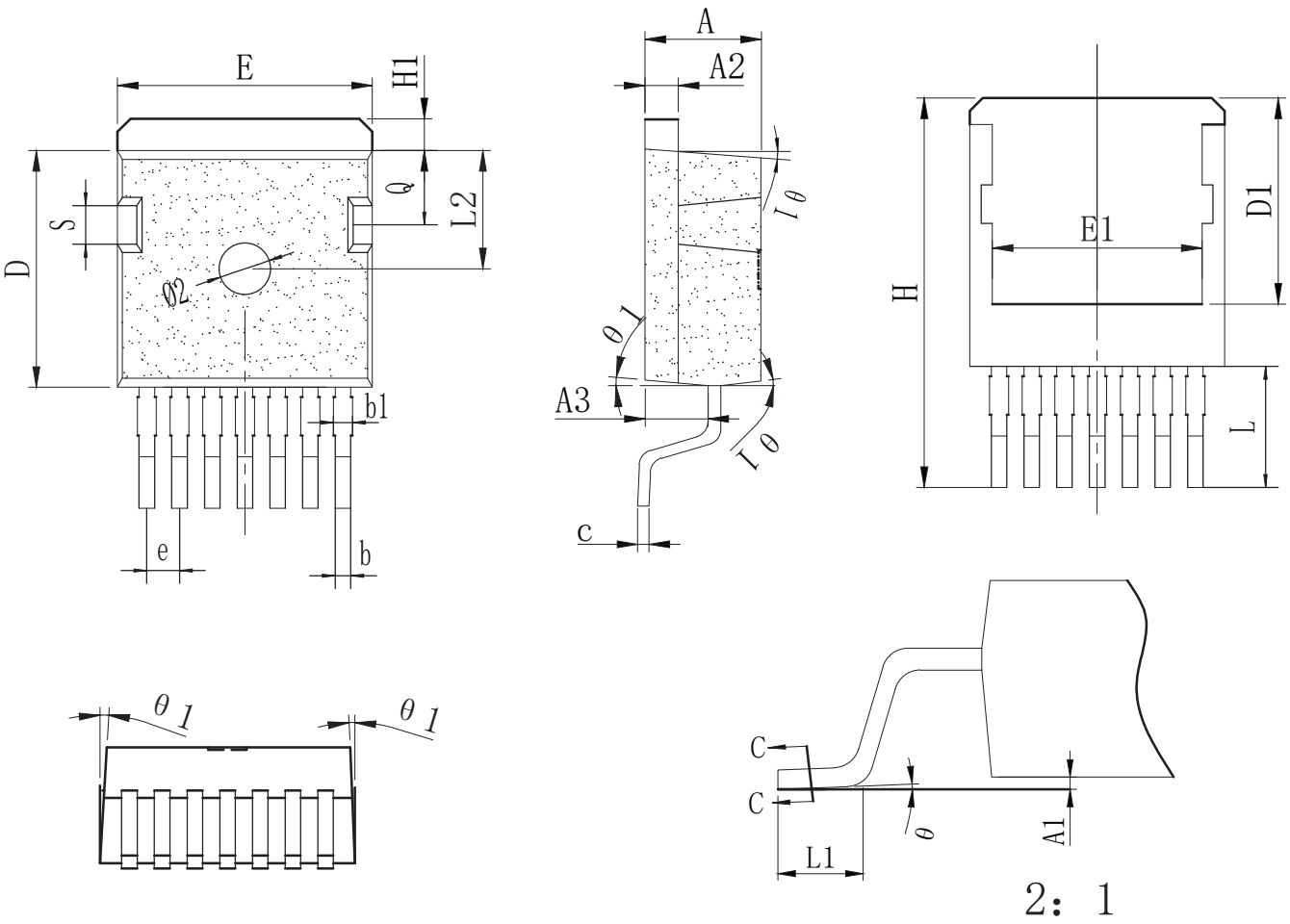


Fig 6. Gate charge vs gate-source voltage

Package Outline Dimensions (Units: mm)

TO-263-7



SYMBOL	mm			SYMBOL	mm		
	MIN	NOM	MAX		MIN	NOM	MAX
✻A	4.30	4.40	4.50	E1	8.20	8.40	8.60
✻A1	0.00	0.10	0.20	✻e	1.25	1.27	1.29
✻A2	1.22	1.27	1.32	✻H	14.85	15.00	15.15
✻A3	2.30	2.40	2.50	H1	1.10	1.20	1.30
✻b	0.50	0.60	0.70	✻L	4.50	4.70	4.90
✻b1	-	-	0.63	L1	1.70	2.00	2.30
✻c	0.45	0.50	0.55	L2	4.55	4.65	4.75
✻D	9.15	9.30	9.45	S	1.40	1.50	1.60
D1	A: 8.00REF			Q	2.80	2.90	3.00
	B: 5.70REF			✻θ	0°	2.5°	8°
✻E	10.12	10.16	10.20	θ1	5°	7°	9°

***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.