Features

- Super Low Gate Charge
- Green Device Available
- 100% EAS Guaranteed
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

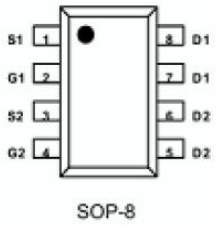
Bvdss	Rdson	ID
-30V	18mΩ	-9.5A

Application

- Battery Switch
- Load switch
- Power management

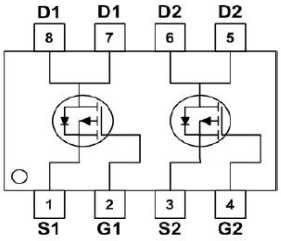
RoHS

Package



1.Marking and pin assignment

2. SOP-8 top view



3.Schematic diagram

Package Marking and Ordering Information

Device Marking	Device	Device Package	Quantity
4805	4805	SOP-8	3000

Absolute Maximum Ratings (T_C=25℃unless otherwise specified)

Parameter		Symbol	Max.	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{Gs}	±20	V
Continuous Drain Current	T_a= 25℃	I_D	-9.5	A
Continuous Drain Current	T_a= 100℃	I_D	-5.9	A
Pulsed Drain Current(1)		I_{DM}	-36	A
Single Pulse Avalanche Energy(2)		EAS	25	mJ
Power Dissipation(2)	T_C = 25℃	P_d	3.3	W
Junction Temperature		T_J	-55~+150	℃
Storage Temperature		T_{STG}	-55~+150	℃

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient	$R_{\theta JA}$	38	℃/W

Ordering Information

Ordering Number	Package	Pin Assignment						Packing
Halogen Free		G1	G2	D1	D2	S1	S2	
HL4805	SOP-8	2	4	7,8	5,6	1	3	Tape Reel

Electrical Characteristics (Tj=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain- Source Breakdown Voltage	B_{VDSS}	V_{GS}=0V , I_D=-250uA	-30	---	---	V
B_{VDSS} Temperature Coefficient	△B_{VDSS}/△ T_J	Reference to 25℃, I_D=- 1mA	---	-0.022	---	V/℃
Static Drain- Source On- Resistance(2)	$R_{DS(ON)}$	V_{GS}=- 10V , I_D=-6A	---	18	25	mΩ
		V_{GS}=-4.5V , I_D=-4A	---	25	42	
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS} , I_D =-250uA	-1.0	---	-2.5	V
$V_{GS(th)}$ Temperature Coefficient	△$V_{GS(th)}$		---	4.6	---	mV/ C
Drain- Source Leakage Current	I_{DSS}	V_{DS} =- 24 V , V_{GS}=0 V , T_J=25℃	---	---	- 1	uA
		V_{DS} =- 24 V , V_{GS}=0 V , T_J=55℃	---	---	-5	
Gate- Source Leakage Current	I_{GSS}	V_{GS}=±20 V , V_{DS} =0 V	---	---	±100	nA
Forward Transconductance	gfs	V_{DS} =-5V , I_D=-6A	---	17	---	S
Gate Resistance	Rg	V_{DS} =0V , V_{GS}=0V , f=1 MHz	---	13	---	Ω
Total Gate Charge (-4.5 V)	Qg	V_{DS}=- 15V , V_{GS}=-4.5V , I_D=-6A	---	12.6	---	nC
Gate- Source Charge	Qgs		---	4.8	---	
Gate- Drain Charge	Qgd		---	4.8	---	
Turn- On Delay Time	Td(on)	V_{DD}=- 15V , V_{GS}=- 10V , R_G=3.3Ω , I_D=-6A	---	4.6	---	ns
Rise Time	Tr		---	14.8	---	
Turn- Off Delay Time	Td(off)		---	41	---	
Fall Time	Tf		---	19.6	---	
Input Capacitance	Ciss	V_{DS}=- 15V , V_{GS}=0V , f=1MHz	---	1345	---	pF
Output Capacitance	Coss		---	194	---	
Reverse Transfer Capacitance	Crss		---	158	---	
Continuous Source Current(1)(5)	I_S	V_G=V_D=0 V , Force Current	---	---	-6.5	A
Pulsed Source Current(2)(5)	I_{SM}		---	---	-26	A
Diode Forward Voltage(2)	V_{SD}	V_{GS}= 0V , I_S=- 1A , T_J=25℃	---	---	-1.2	V
Reverse Recovery Time	trr	IF=-6 A , dI/dt=100 A/μs , T_J=25℃	---	16.3	---	nS
Reverse Recovery Charge	Qrr		---	5.9	---	nC

Notes:

1 . The data tested by surface mounted on a 1 inch2 FR- 4 board with 2 OZ copper.

2 . The data tested by pulsed , pulse width≦300us , duty cycle ≦2%

3 . The EAS data shows Max. rating . The test condition is V_{DD}=-25V, V_{GS}=-10V, L=0.1mH, IAS=- 38A

4 . The power dissipation is limited by 150℃ junction temperature

5 . The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

Figure1 : Output Characteristics

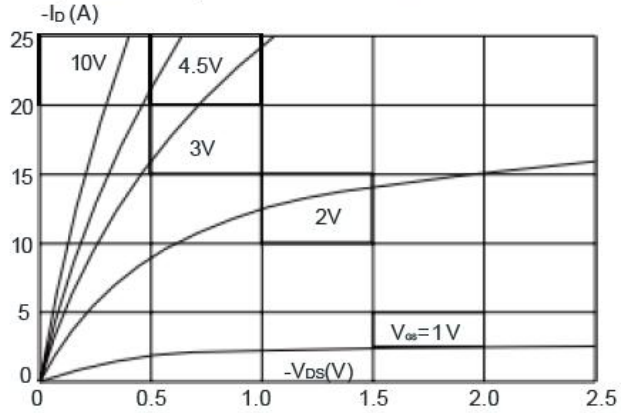


Figure 2 : Typical Transfer Characteristics

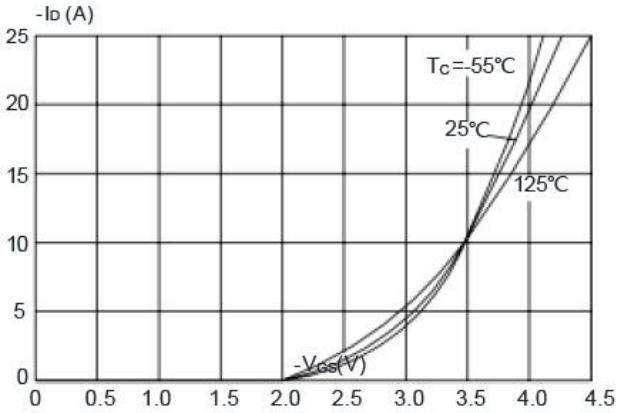


Figure 3 : On-resistance vs. Drain Current

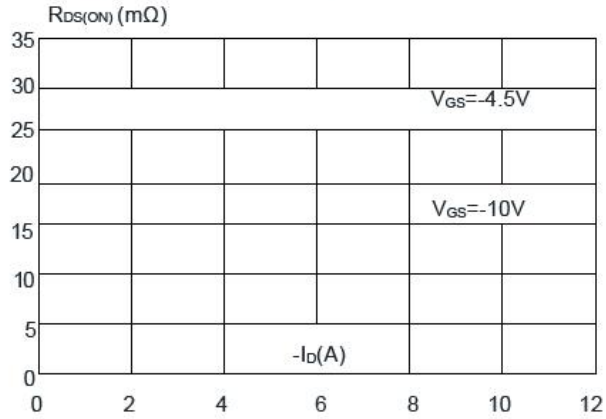


Figure 4 : Body Diode Characteristics

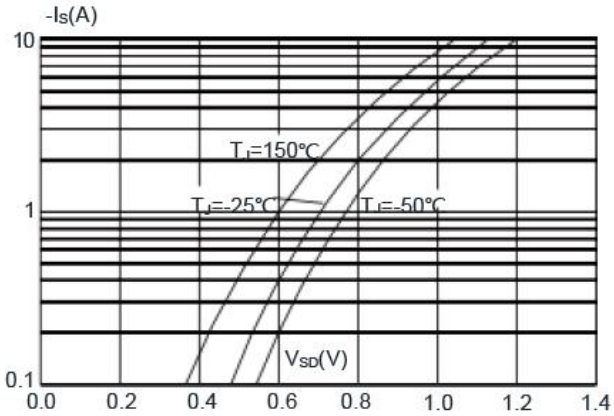


Figure 5 : Gate Charge Characteristics

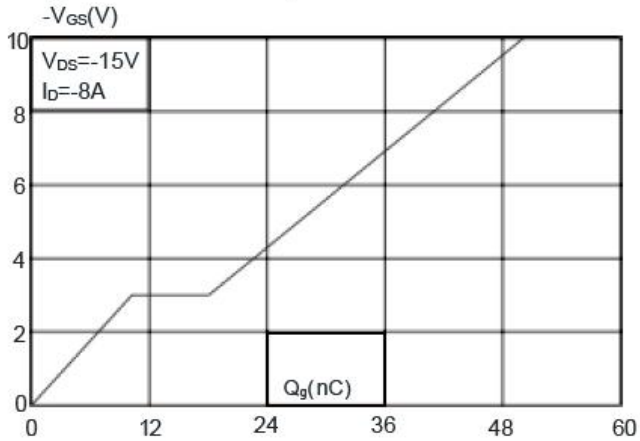


Figure 6 : Capacitance Characteristics

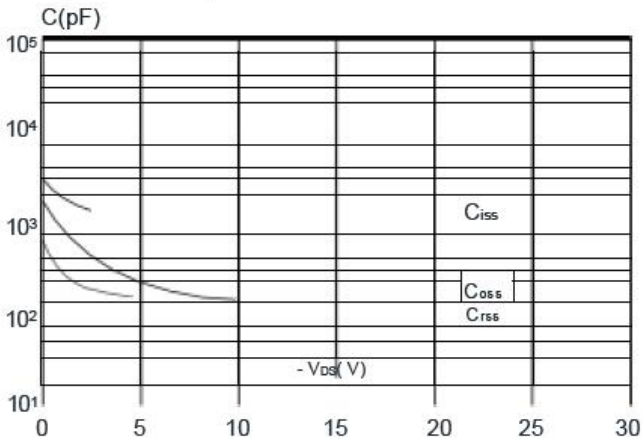


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

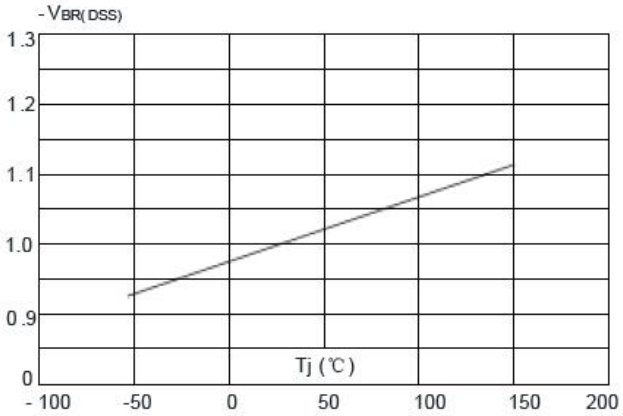


Figure 8: Normalized on Resistance vs. Junction Temperature

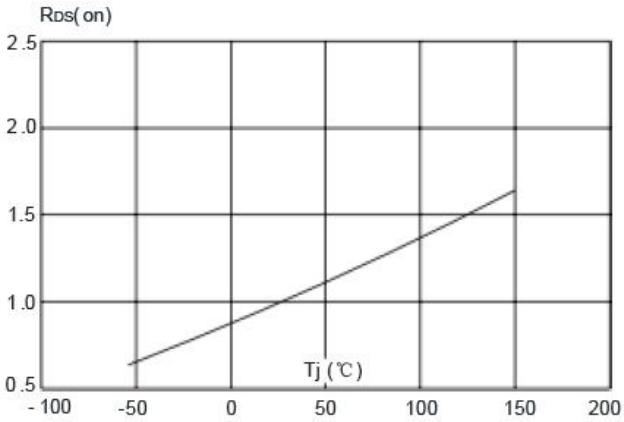


Figure 9: Maximum Safe Operating Area

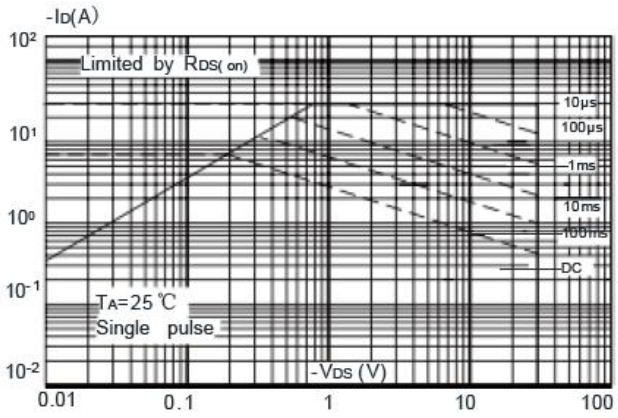


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

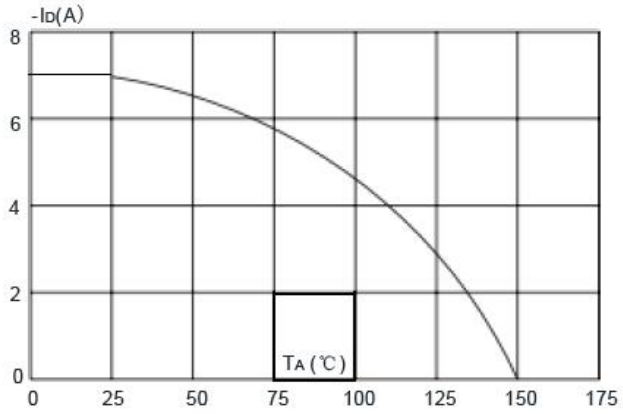
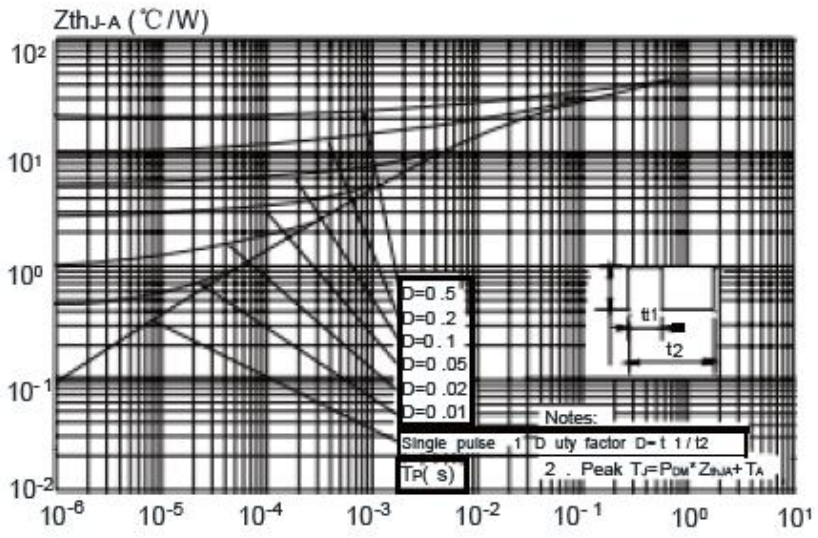
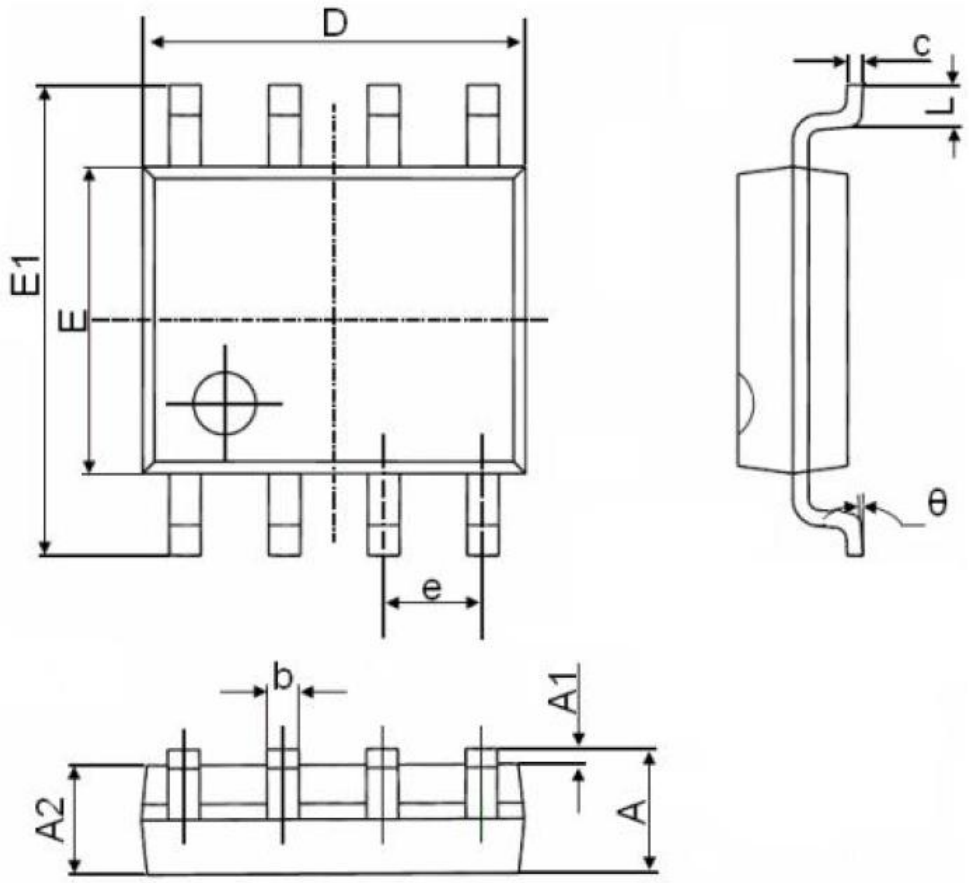


Figure 11 : Maximum Continuous Drain Current vs. Ambient Temperature



Package Dimensions

- SOP-8



COMMON DIMENSIONS
(UNITS OF MEASURE=mm)

SYMBOL	MIN	NOM	MAX
A	1.40	1.60	1.80
A1	0.05	0.15	0.25
A2	1.35	1.45	1.55
b	0.30	0.40	0.50
c	0.153	0.203	0.253
D	4.80	4.90	5.00
E	3.80	3.90	4.00
E1	5.80	6.00	6.20
L	0.45	0.70	1.00
θ	2°	4°	6°
L1	1.04 REF		
e	1.27 BSC		
R1	0.07 TYP		
R2	0.07 TYP		

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