



General Description

The HSCB6807 is the high cell density trench P-ch MOSFETs, which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

The HSCB6807 meets the RoHS and Green Product requirement with full function reliability approved.

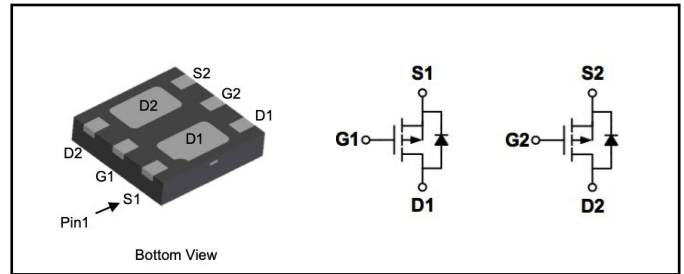
Features

- Super Low Gate Charge
- Green Device Available
- Excellent Cdv/dt effect decline
- Advanced high cell density Trench Technology

Product Summary

V_{DS}	-16	V
$R_{DS(ON),typ}$	21	mΩ
I_D	-7	A

DFN2*2-6L-D Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Limit	Units
V_{DS}	Drain-Source Voltage	-16	V
V_{GS}	Gate-Source Voltage	± 12	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ -4.5V^1$	-7	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ -4.5V^1$	-5.6	A
I_{DM}	Pulsed Drain Current ²	-28	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation ¹	1.5	W
$P_D@T_A=70^\circ\text{C}$	Total Power Dissipation ¹	0.95	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹	---	75	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	6.5	$^\circ\text{C/W}$

Note :

1.Surface mounted on 1" x 1" FR4 board.

2.Pulse width limited by maximum junction temperature.



Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-16	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ¹	$V_{GS}=-4.5V$, $I_D=-4.0A$	---	21	27	$m\Omega$
		$V_{GS}=-2.5V$, $I_D=-3.0A$	---	30	45	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-0.4	-0.65	-1.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-16V$, $V_{GS}=0V$, $T_J=25^\circ\text{C}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 12V$, $V_{DS}=0V$	---	---	± 100	nA
Q_g	Total Gate Charge	$V_{DS}=-8V$, $V_{GS}=-4.5V$, $I_D=-4A$	---	40	---	nC
Q_{gs}	Gate-Source Charge		---	8	---	
Q_{gd}	Gate-Drain Charge		---	9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-8V$, $V_{GS}=-4.5V$, $R_G=3\Omega$ $I_D=-4A$	---	9	---	ns
T_r	Rise Time		---	20	---	
$T_{d(off)}$	Turn-Off Delay Time		---	77	---	
T_f	Fall Time		---	48	---	
C_{iss}	Input Capacitance	$V_{DS}=-8V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	816	---	pF
C_{oss}	Output Capacitance		---	124	---	
C_{rss}	Reverse Transfer Capacitance		---	99	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-4A$, $T_J=25^\circ\text{C}$	---	---	-1.2	V

Note :

1. Pulse test: pulse width $\leq 300\mu s$, duty $\leq 2\%$.

2. Guaranteed by design, not subject to production testing.



Typical Characteristics

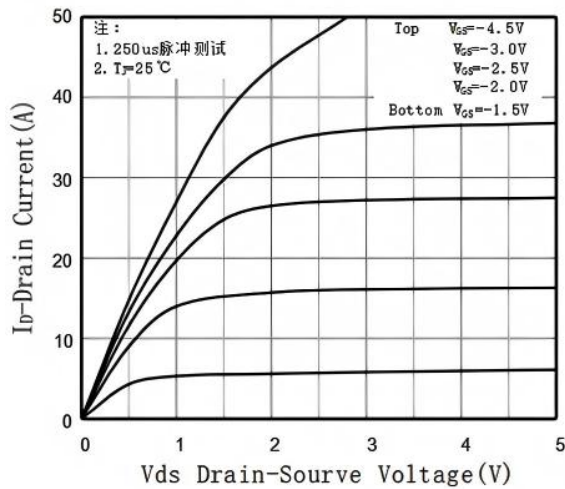


Fig.1 Output Characteristic

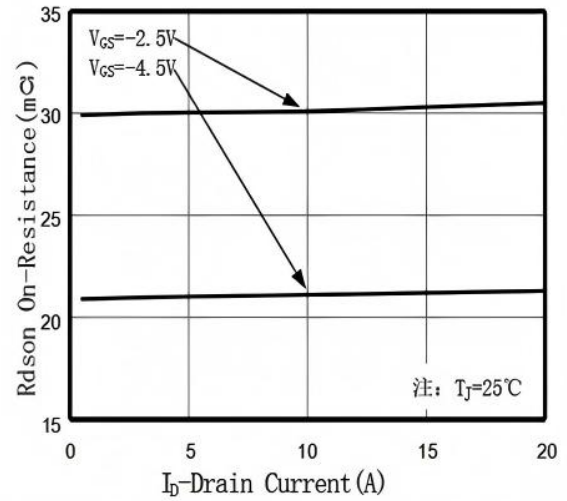


Fig.2 On-Resistance vs. Drain Current

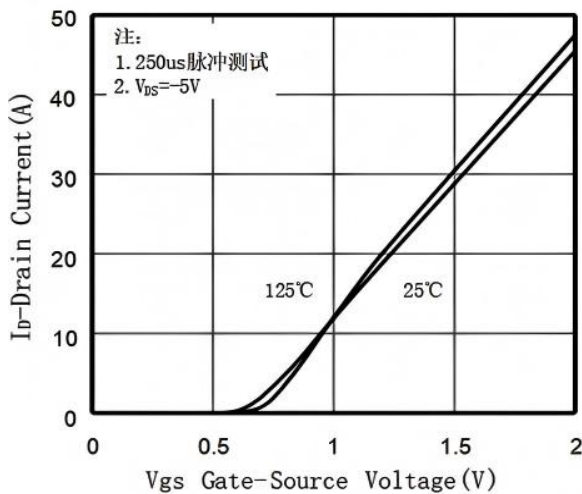


Fig.3 Transfer Characteristic

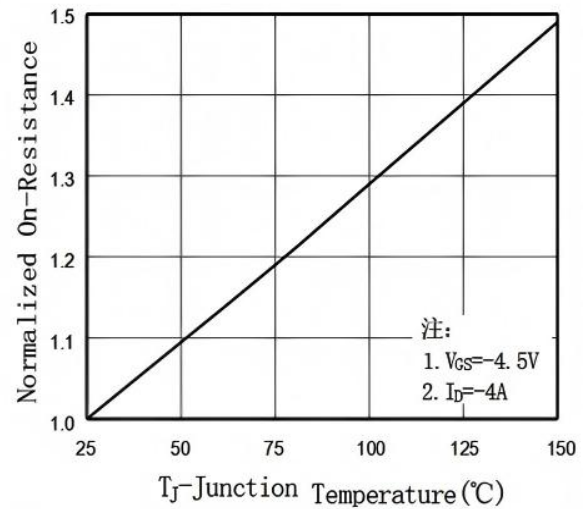


Fig.4 On-Resistance vs. Junction Temperature

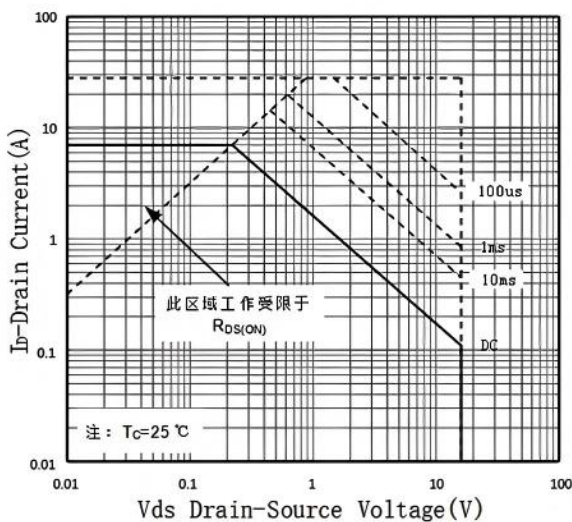


Fig.5 Safe Operation Area

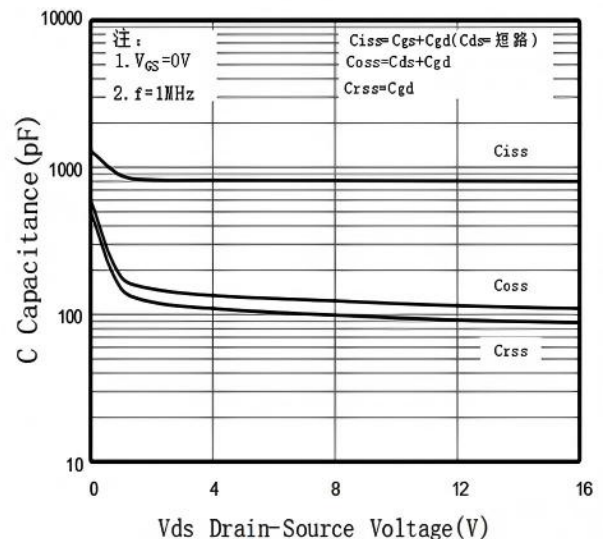


Fig.6 Capacitance Characteristic

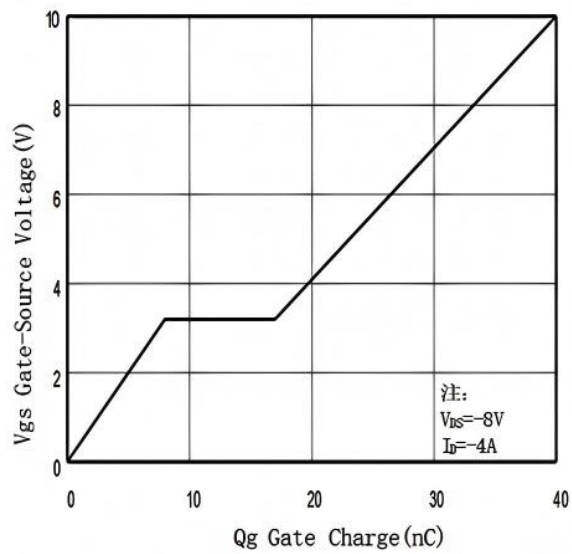


Fig.7 Gate-Charge Characteristic

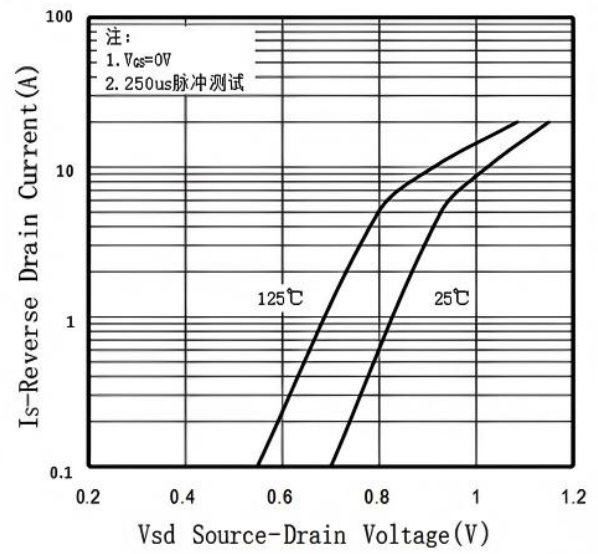


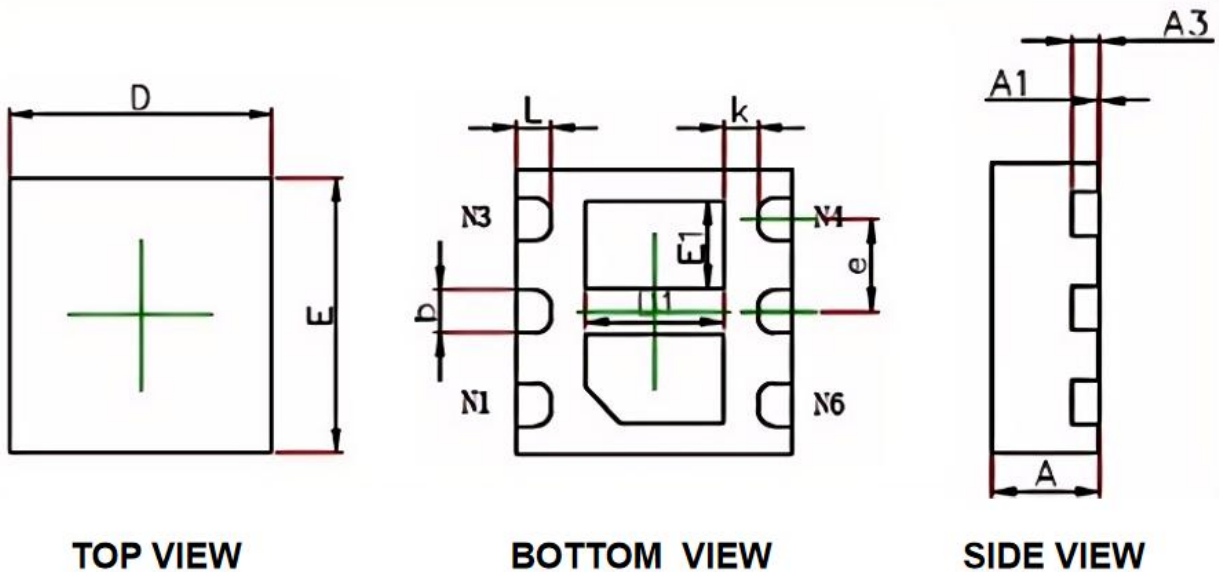
Fig.8 Body Diode Characteristic



Ordering Information

Part Number	Package code	Packaging
HSCB6807	DFN2*2-6L-D	3000/Tape&Reel

DFN2*2-6L-D Dual Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.900	1.100	0.035	0.043
E1	0.520	0.720	0.020	0.028
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
k	0.200MIN.		0.008MIN.	
L	0.200	0.300	0.008	0.012



HSCB6807 Marking:

