

General Description

The HSS8N06 is the high cell density trenched N-ch MOSFETs, which provide excellent RDS(on) and gate charge for most of the synchronous buck converter applications.

The HSS8N06 meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

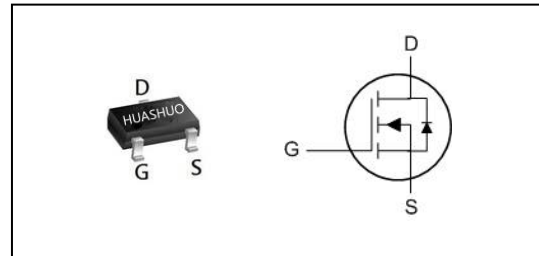
Features

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

Product Summary

V_{DS}	60	V
$R_{DS(ON),typ}$	28	m Ω
I_D	8	A

SOT-23L Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current, $V_{GS} @ 10V^1$	8	A
$I_D@T_C=70^{\circ}C$	Continuous Drain Current, $V_{GS} @ 10V^1$	6.5	A
I_{DM}	Pulsed Drain Current ²	33	A
$P_D@T_C=25^{\circ}C$	Total Power Dissipation ¹	1.4	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹	---	125	$^{\circ}C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	80	$^{\circ}C/W$

Note :

1..Surface mounted on 1" x 1" FR4 board, $t \leq 10sec$

2.Pulse width limited by maximum junction temperature



Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance ¹	V _{GS} =10V, I _D =8A	---	28	36	mΩ
		V _{GS} =4.5V, I _D =6A	---	35	45	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1.0	1.6	2.3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =60V, V _{GS} =0V, T _J =25°C	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	1.7	---	Ω
Q _g	Total Gate Charge	V _{DS} =30V, V _{GS} =10V, I _D =8A	---	15	---	nC
Q _{gs}	Gate-Source Charge		---	4	---	
Q _{gd}	Gate-Drain Charge		---	5	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V, V _{GS} =10V, R _G =3Ω I _D =8A	---	9	---	ns
T _r	Rise Time		---	27	---	
T _{d(off)}	Turn-Off Delay Time		---	25	---	
T _f	Fall Time		---	8	---	
C _{iss}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	---	1350	---	pF
C _{oss}	Output Capacitance		---	65	---	
C _{rss}	Reverse Transfer Capacitance		---	53	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =4A, T _J =25°C	---	---	1.2	V

Note :

1.Pulse test: pulse width≤300μs,duty≤2%

2.Guaranteed by design, not subject to production testing



Typical Characteristics

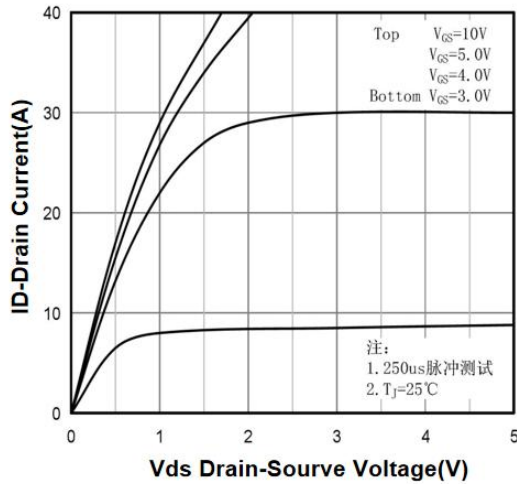


Fig.1 Output Characteristic

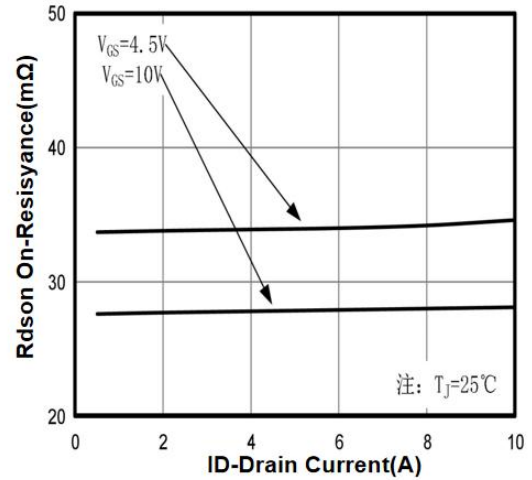


Fig.2 On-Resistance vs. Drain Current

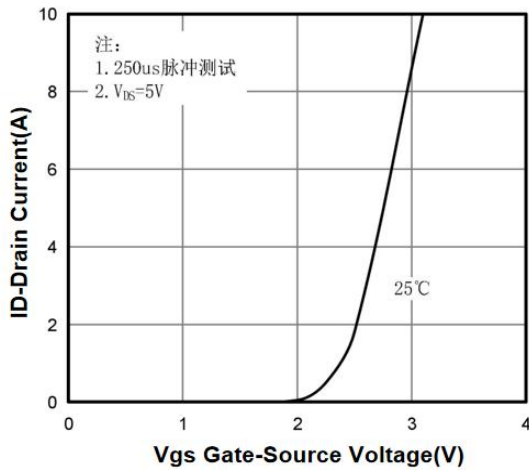


Fig.3 Transfer Characteristic

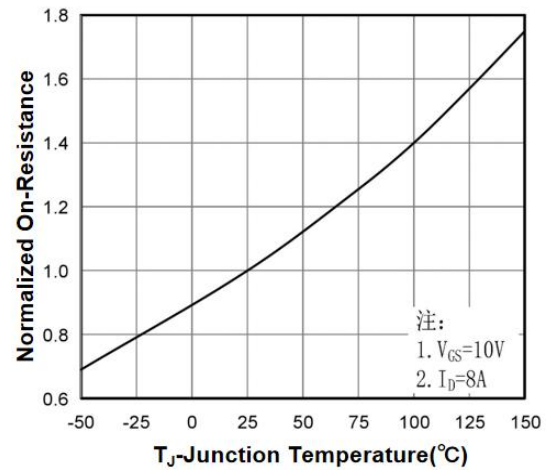


Fig.4 On-Resistance vs. Junction Temperature

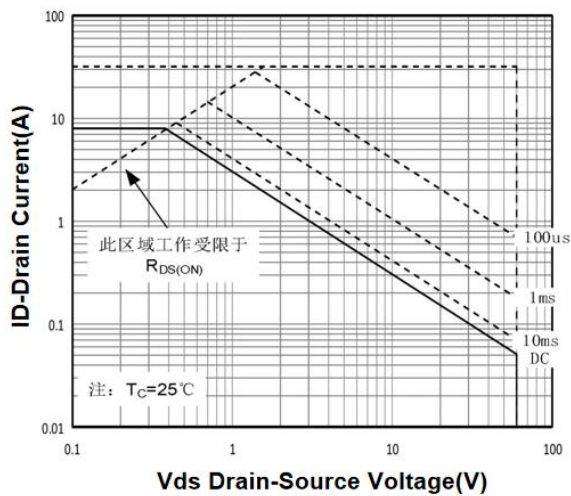


Fig.5 Safe Operation Area

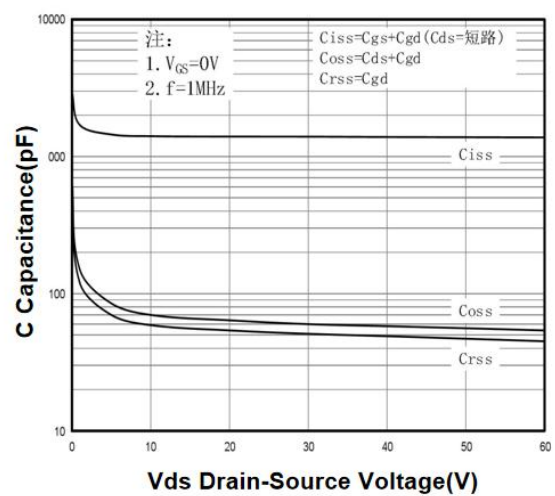


Fig.6 Capacitance Characteristic

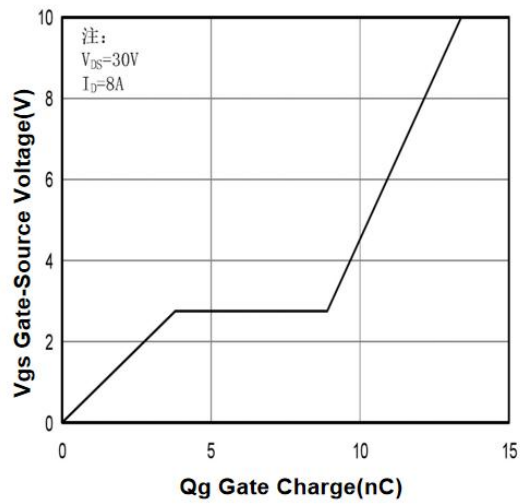


Fig.7 Gate-Charge Characteristic

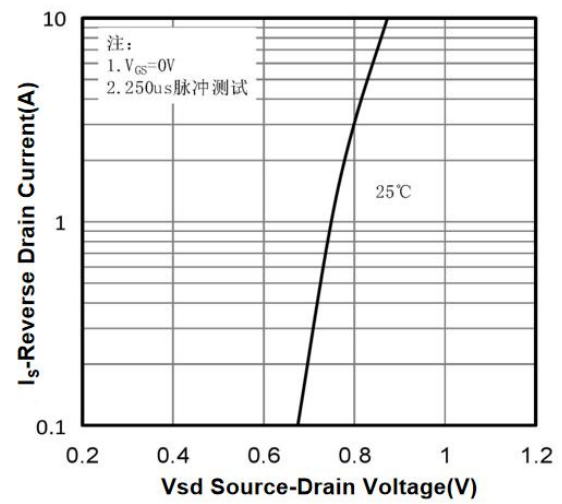


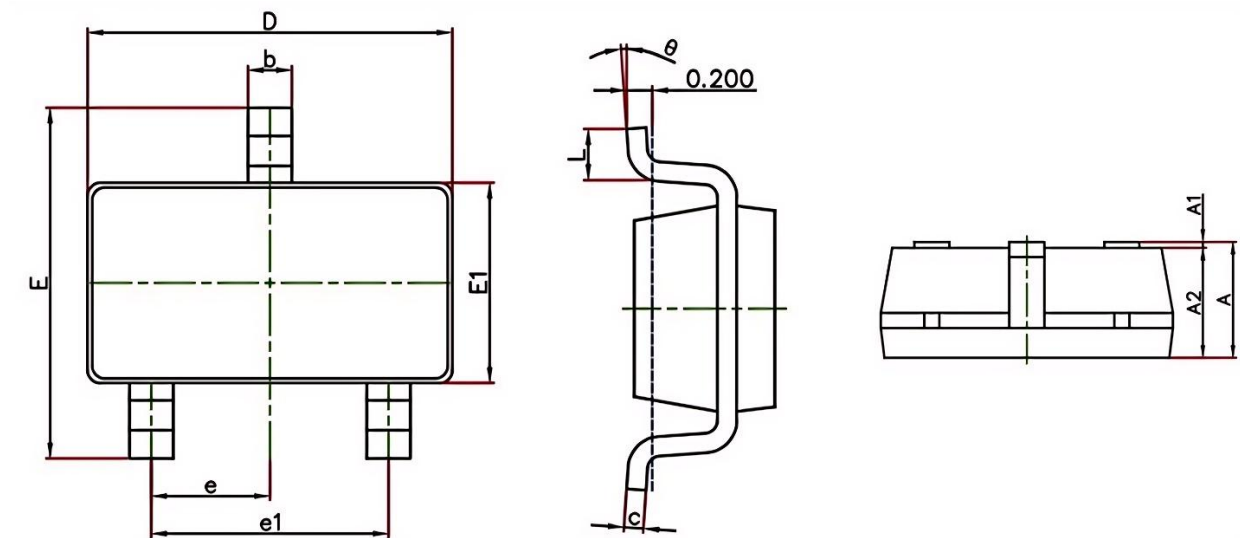
Fig.8 Body Diode Characteristic



Ordering Information

Part Number	Package code	Packaging
HSS8N06	SOT-23L	3000/Tape&Reel

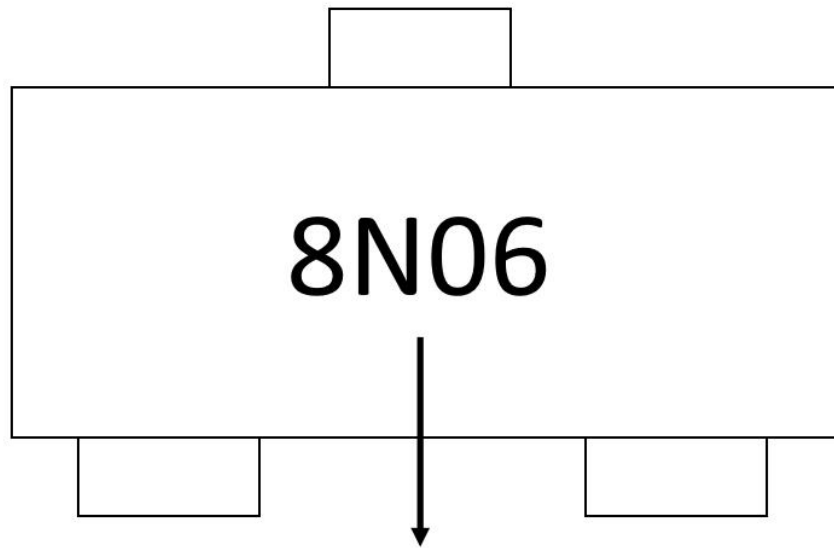
SOT-23L Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
C	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



HSS8N06 TOP Marking



Part Number