

General Description

The HSW6832 is the high cell density trench N-ch MOSFETs, which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

The HSW6832 meet the RoHS and Green Product requirement with full function reliability approved.

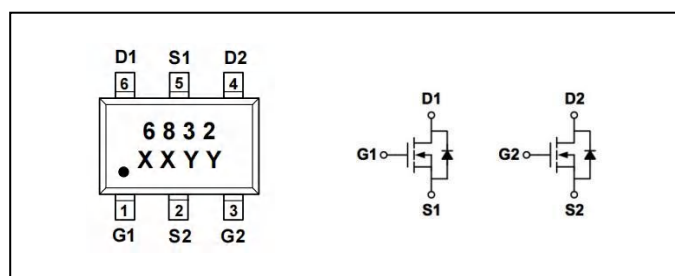
Product Summary

V_{DS}	30	V
$R_{DS(ON),typ}$	25	m Ω
I_D	5	A

Features

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

SOT23-6L Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 12	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 4.5V^{2,3}$	5	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 4.5V^{2,3}$	3.5	A
I_{DM}	Pulsed Drain Current ²	20	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation ³	1.4	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	---	90	$^\circ\text{C/W}$

Note :

1.Surface mounted on FR4 board, $t \leq 10\text{sec}$

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

3.Guaranteed by design, not subject to production testing

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ¹	$V_{GS}=10V$, $I_D=4.5A$	---	25	30	$m\Omega$
		$V_{GS}=4.5V$, $I_D=4A$	---	30	35	
		$V_{GS}=2.5V$, $I_D=3A$	---	40	50	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	0.6	0.85	1.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=30V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 12V$, $V_{DS}=0V$	---	---	± 100	nA
Q_g	Total Gate Charge	$V_{DS}=15V$, $V_{GS}=4.5V$, $I_D=4.5A$	---	6	---	nC
Q_{gs}	Gate-Source Charge		---	1.6	---	
Q_{gd}	Gate-Drain Charge		---	1.8	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=15V$, $V_{GS}=10V$, $R_G=3\Omega$, $RL=2.6\Omega$	---	3.1	---	ns
T_r	Rise Time		---	2.9	---	
$T_{d(off)}$	Turn-Off Delay Time		---	25	---	
T_f	Fall Time		---	4	---	
C_{iss}	Input Capacitance	$V_{DS}=15V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	680	---	pF
C_{oss}	Output Capacitance		---	79	---	
C_{rss}	Reverse Transfer Capacitance		---	53	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current ¹	$V_G=V_D=0V$, Force Current	---	---	5	A
I_{SM}	Pulsed Source Current ¹		---	---	20	A
V_{SD}	Diode Forward Voltage ²	$V_{GS}=0V$, $I_S=1A$, $T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

1.Pulse test: Pulse width $\leq 300\text{ }\mu s$, duty cycle $\leq 2\%$

2.Guaranteed by design, not subject to production testing

Typical Characteristics

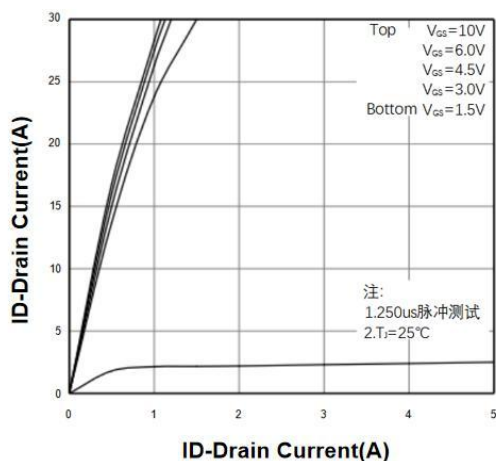


Fig.1 Output Characteristic

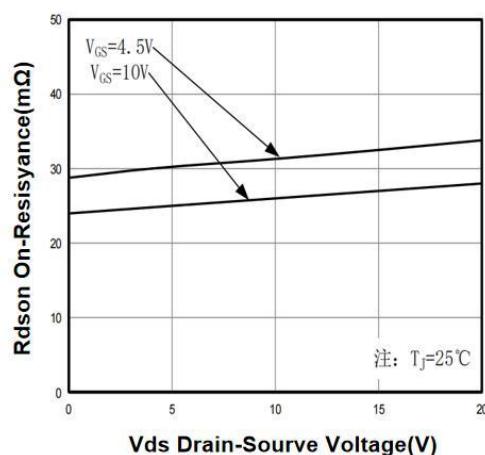


Fig.2 On-Resistance vs. Drain Current

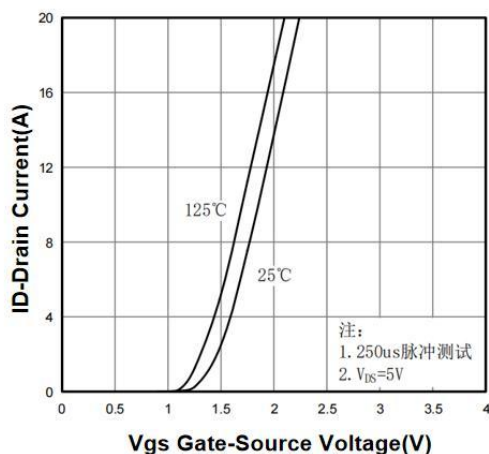


Fig.3 Transfer Characteristic

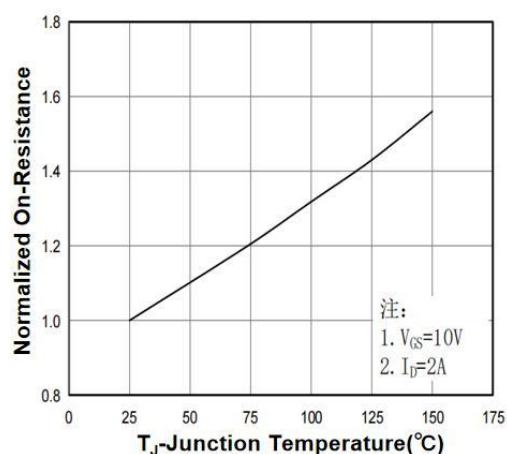


Fig.4 On-Resistance vs. Junction Temperature

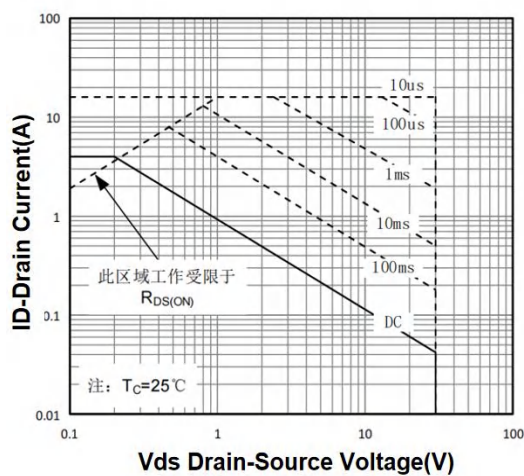


Fig.5 Safe Operation Area

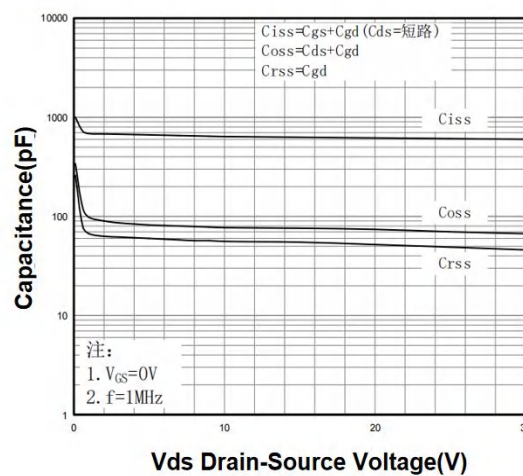


Fig.6 Capacitance Characteristic



Dual N-CH Fast Switching MOSFETs

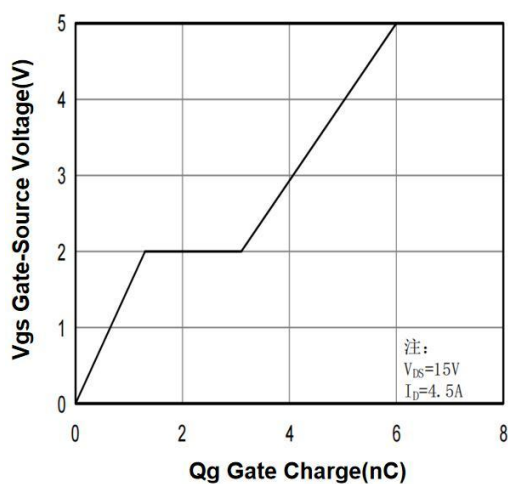


Fig.7 Gate-Charge Characteristic

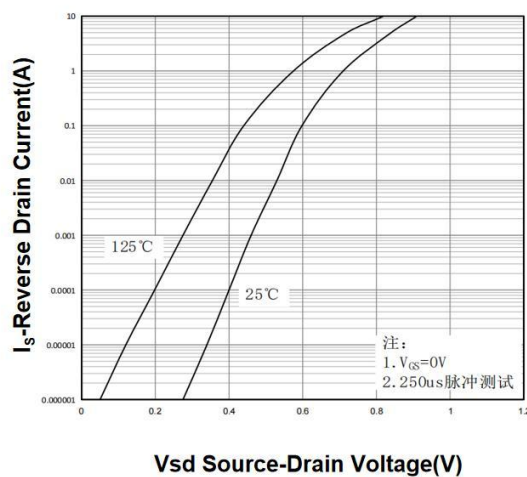


Fig.8 Body Diode Characteristic

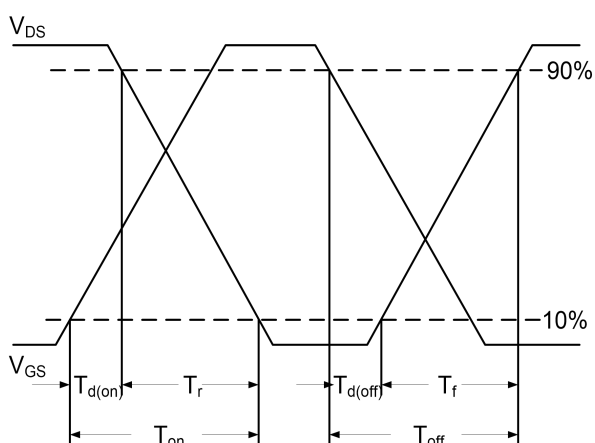


Fig.9 Switching Time Waveform

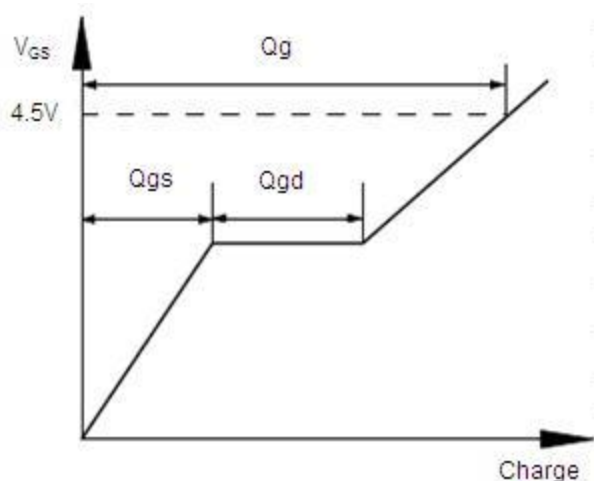
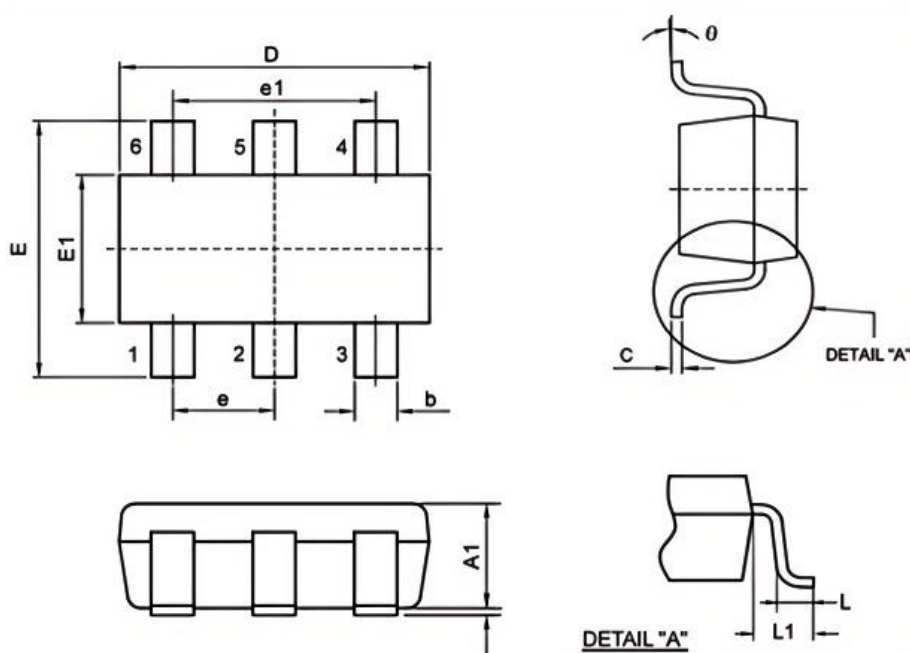


Fig.10 Gate Charge Waveform

Ordering Information

Part Number	Package code	Packaging
HSW6832	SOT23-6L	3000/Tape&Reel

SOT23-6L Package Outline



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
D	2.692	3.099	0.106	0.122
E	2.591	3.000	0.102	0.118
E1	1.397	1.803	0.055	0.071
e	0.950 REF.		0.037 REF.	
e1	1.900 REF.		0.075 REF.	
b	0.300	0.500	0.012	0.020
C	0.080	0.200	0.003	0.008
A	0.000	0.100	0.000	0.004
A1	0.700	1.200	0.028	0.048
L	0.300	0.600	0.012	0.024
L1	0.600 REF.		0.023 REF.	
θ	0°	9°	0°	9°

HSW6832 Marking:

