SSC83A0HN6

Dual N -Channel Enhancement MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
100V	±20V	95mΩ@10V	15.5A
		105mΩ@6V	

➢ Description

The SSC83A0HN6 uses advanced trench technology to provide excellent RDS(ON) and low gate charge. The complementary MOSFETs may be used to form a level shifted high side switch, and for a host of other applications.

100% UIS + ΔVDS + Rg Tested!

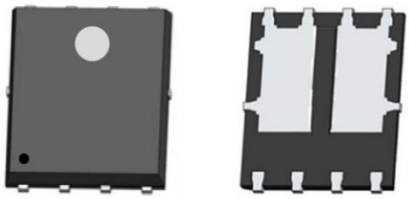
➢ Applications

- PWM Applications
- Load Switch
- DC-DC Converters
- Wireless Chargers

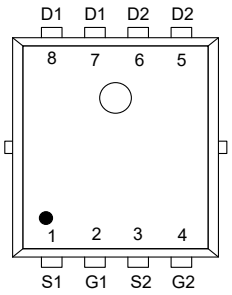
➢ Ordering Information

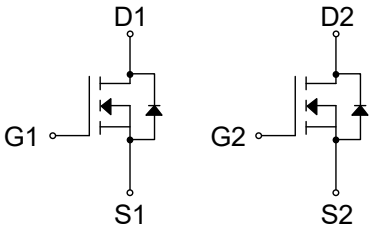
Device	Package	Shipping
SSC83A0HN6	PDFN5X6-8L	5000/Reel

➢ Pin configuration

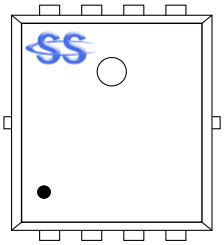


PDFN5X6-8L





Pin Configuration (Top View)



Marking

(XXYY: Internal Traceability Code)

➢ Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Parameter		Symbol	Ratings	Unit
Drain-to-Source Voltage		V_{DSS}	100	V
Gate-to-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current [d]	T_A= 25℃	I_D	15.5	A
	T_A= 100℃		8	A
Continuous Drain Current [a]	T_A= 25℃	I_{DSM}	3.8	A
	T_A= 70℃		2.8	A
Pulsed Drain Current [b]		I_{DM}	62	A
Power Dissipation [a]	T_A= 25℃	P_{DSM}	2	W
	T_A= 100℃		1.3	W
Avalanche Energy [b] L=0.5mH Single Pulse		I_{AS}	4	A
Avalanche Energy [b] L=0.5mH Single Pulse		E_{AS}	5	mJ
Power Dissipation [c]	T_A= 25℃	P_D	34.7	W
	T_A= 100℃		13.9	W
Operation junction temperature		T_J	-55 to 150	℃
Storage temperature range		T_{STG}	-55 to 150	℃

➢ Thermal Resistance Ratings (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	62	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	3.6	

Note:

a. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper,in a still air environment with T_A=25℃.The value in any given application depends on the user is specific board design. The current rating is based on the t≤10s thermal resistance rating.

b. Repetitive rating, pulse width limited by junction temperature.

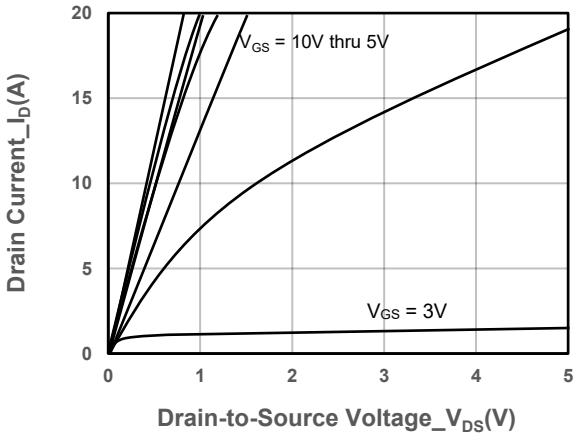
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

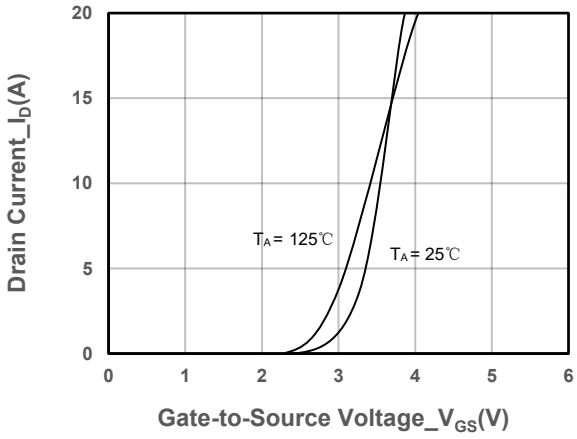
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	1	2	3	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 6A		95	125	mΩ
		V_{GS} = 6V, I_D = 3A		105	140	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 100V, V_{GS} = 0V			1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 5A		0.8	1.3	V
Input Capacitance	C_{ISS}	V_{DS} = 50V, V_{GS} = 0V, f = 1MHz		1160		pF
Output Capacitance	C_{OSS}			82		
Reverse Transfer Capacitance	C_{RSS}			18		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 50V, I_D = 5A		5.8		nC
Gate to Source Charge	Q_{GS}			1.1		
Gate to Drain Charge	Q_{GD}			1.4		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 50V, I_D = 5A, R_{GEN} = 2Ω		15		ns
Rise Time	T_r			3		
Turn-off Delay Time	$T_{D(OFF)}$			12		
Fall Time	T_f			2.1		

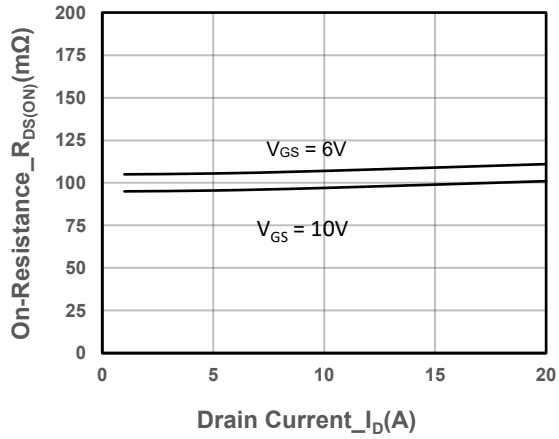
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



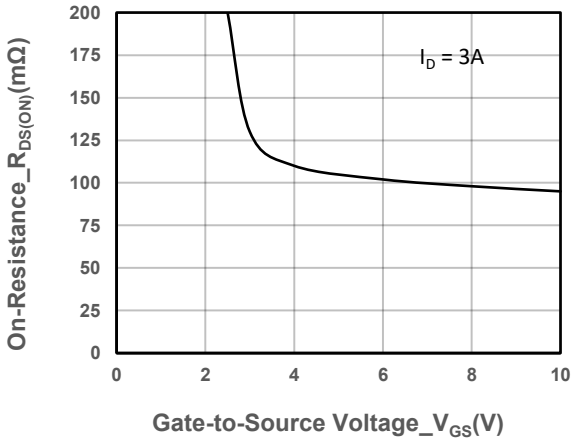
Output Characteristics



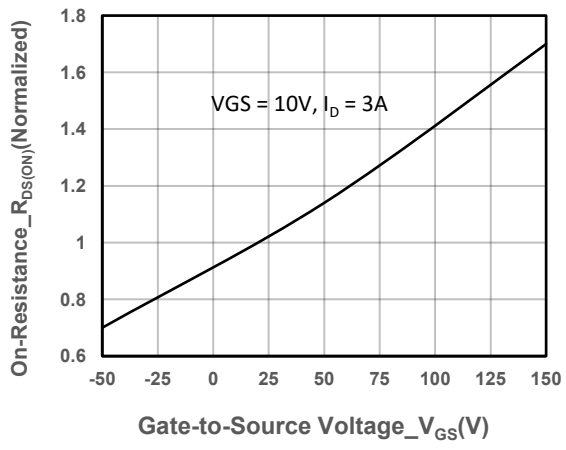
Transfer Characteristics



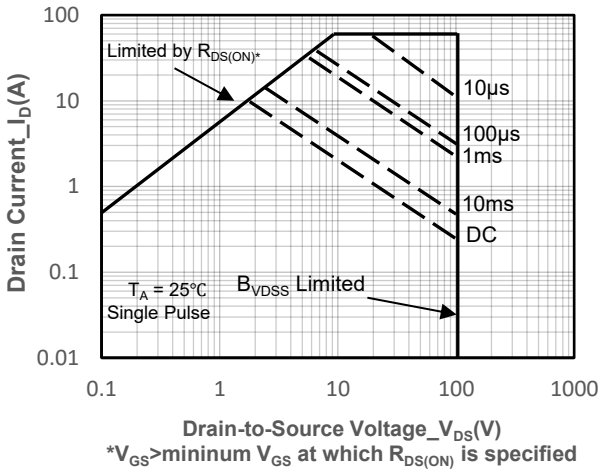
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

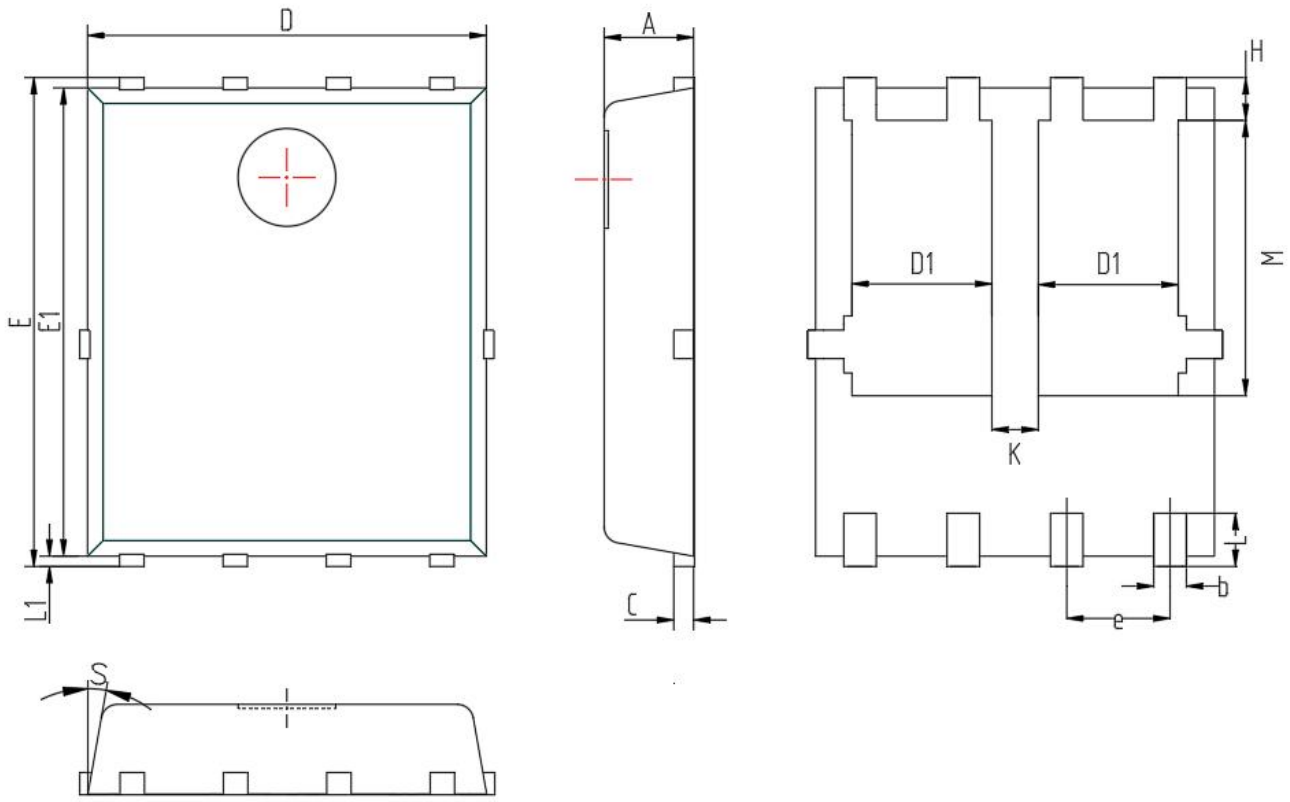


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➢ Package Information



Symbol	MILL IMETER		
	Min	Nom	Max
A	0.9	1.10	1.20
b	0.25	0.30	0.5
C	0.20	0.25	0.35
D	4.80	5.00	5.20
D1	1.50	1.70	1.80
E	5.90	6.00	6.30
E1	5.60	5.75	5.90
e	1.27BSC		
H	0.48	0.58	0.80
K	0.50	0.60	0.70
L	0.50	0.60	0.84
L1	0.10	0.15	0.30
M	3.30	3.48	3.67
S	12° BSC		

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