



SSC83A0GN6

Dual N -Channel Enhancement MOSFET

Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
100V	$\pm 20V$	85m Ω @10V	17A
		93m Ω @6V0	

Description

The SSC83A0GN6 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 + ΔV_{DS} + R_g Tested!

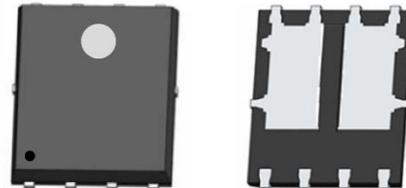
Applications

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

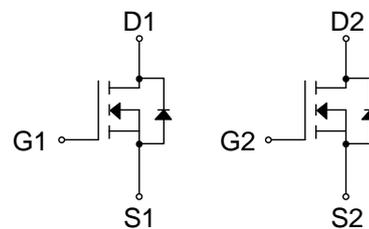
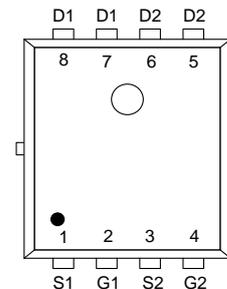
Ordering Information

Device	Package	Shipping
SSC83A0GN6	PDFN5X6-8L	2500/Reel

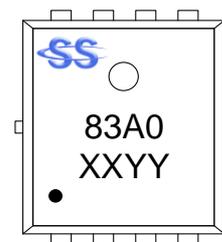
Pin configuration



PDFN5X6-8L



Pin Configuration (Top View)



Marking

(XXYY: Internal Traceability Code)



➤ **Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ 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	$T_A = 25^\circ\text{C}$	I_D	17	A
	$T_A = 100^\circ\text{C}$		9	A
Continuous Drain Current ^a	$T_A = 25^\circ\text{C}$	I_{DSM}	3.8	A
	$T_A = 70^\circ\text{C}$		2.8	A
Pulsed Drain Current ^b		I_{DM}	63	A
Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_{DSM}	2	W
	$T_A = 100^\circ\text{C}$		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	$T_A = 25^\circ\text{C}$	P_D	34.7	W
	$T_A = 100^\circ\text{C}$		13.9	W
Operation junction temperature		T_J	-55 to 150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55 to 150	$^\circ\text{C}$

➤ **Thermal Resistance Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)**

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance ^a	62	$^\circ\text{C/W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	3.6	

Note:

- The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with $T_A=25^\circ\text{C}$. The value in any given application depends on the user's specific board design. The current rating is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P_D is based on $T_{J(MAX)}=150^\circ\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.
- The maximum current rating is package limited.

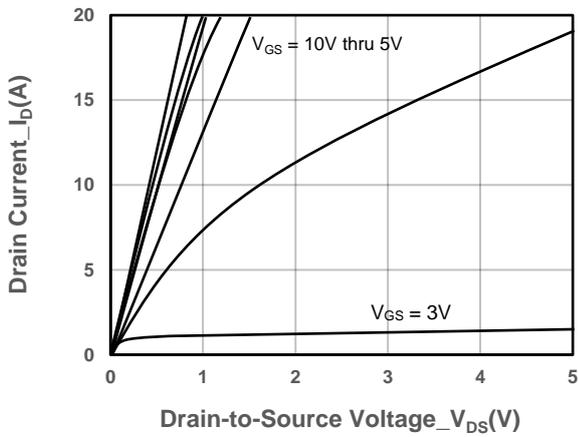


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

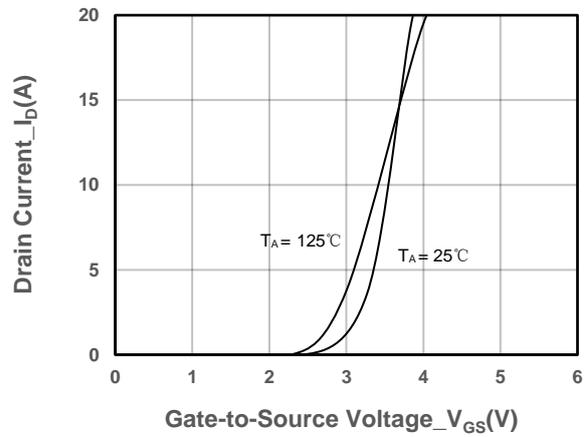
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	1	2	3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 6A		85	105	mΩ
		V _{GS} = 6V, I _D = 3A		93	120	
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		



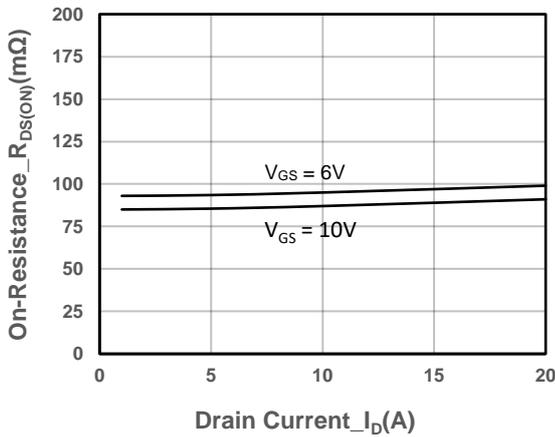
➤ **Typical Performance Characteristics (T_A=25°C unless otherwise noted)**



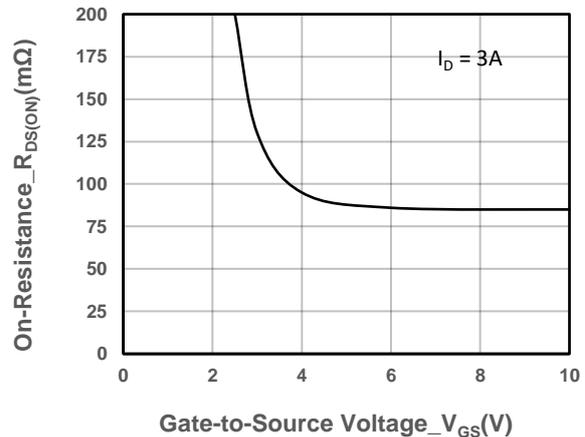
Output Characteristics



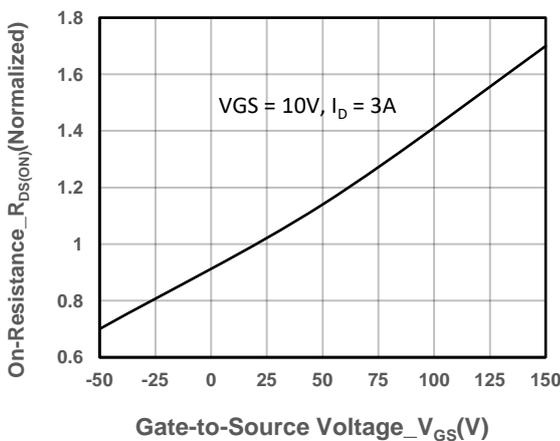
Transfer Characteristics



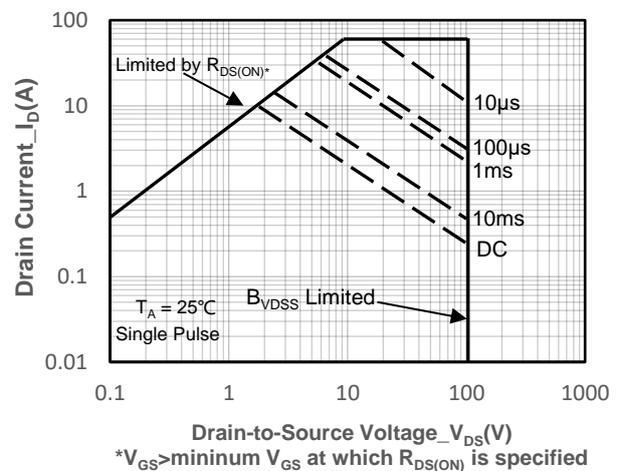
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

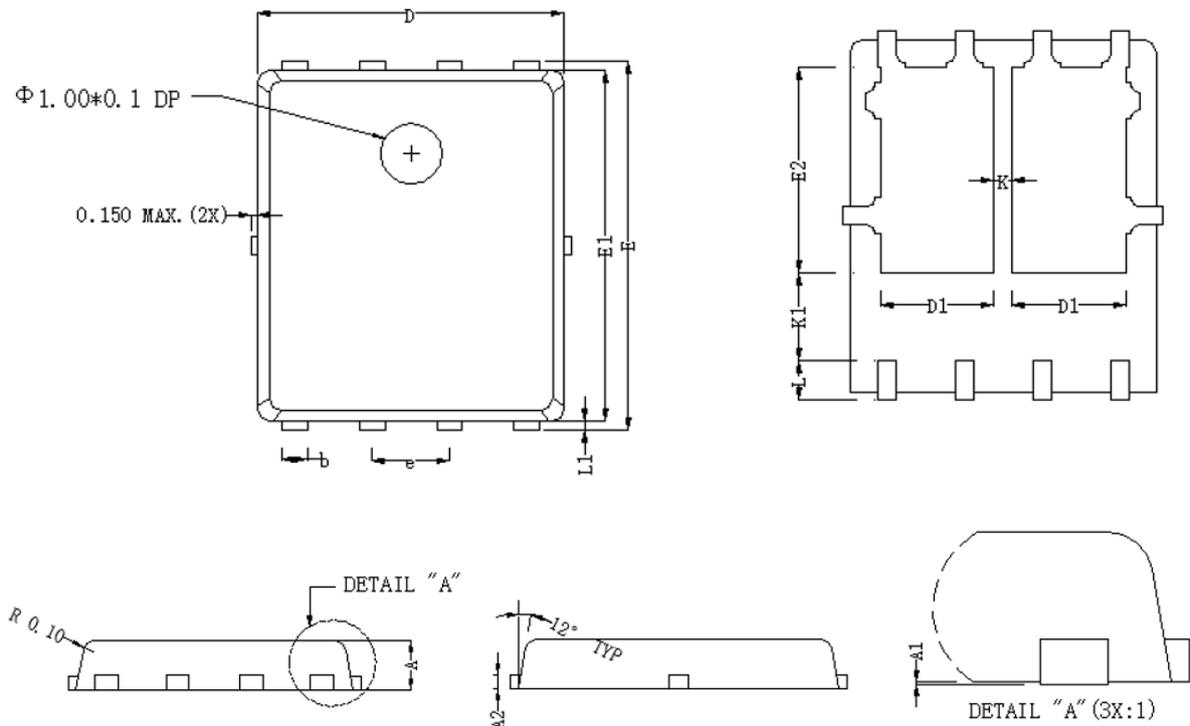


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➤ Package Information



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	0.90	1.00	1.10
A1	0.00	0.03	0.05
A2	0.254 REF		
b	0.25	0.30	0.35
D	4.80	4.90	5.00
D1	1.60	1.70	1.80
E	5.90	6.00	6.10
E1	5.65	5.75	5.85
E2	3.38	3.48	3.58
e	1.27 BSC		
K	0.55	0.60	0.65
K1	1.35 REF		
L	0.55	0.60	0.65
L1	0.10	0.13	0.16



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