



SSC8036GN4

N-Channel Enhancement Mode MOSFET

➤ Features

V _{DS}	V _{GS}	R _{DS(ON)} Typ.	I _D
30V	±20V	14mΩ@10V	33A
		21mΩ@4V5	

➤ Description

This device is N-Channel enhancement MOSFET. Uses advanced trench technology and design to provide excellent RDSON with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit.

100% UIS + ΔVDS + Rg Tested!

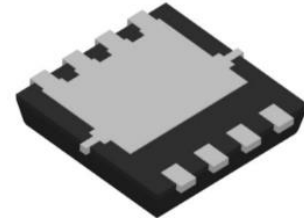
➤ Applications

- Motor Drive Control
- Power Supplies
- Synchronous Rectification
- DCDC Conversion

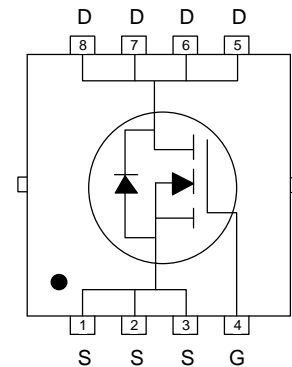
➤ Ordering Information

Device	Package	Shipping
SSC8036GN4	PDFN3.3X3.3-8L	5000/Reel

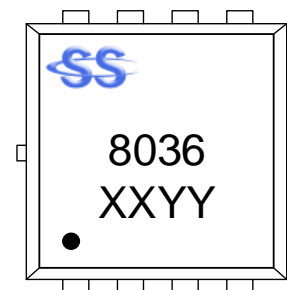
➤ Pin Configuration



PDFN3.3X3.3-8L (Bottom View)



Pin Configuration



Marking

(XXYY: Internal Traceability Code)



➤ Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}	30	V
Gate-to-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current ^d	I _D	T _C =25°C	33
		T _C =100°C	18.5
Continuous Drain Current ^a	I _{DSM}	T _A =25°C	11.8
		T _A =70°C	8.7
Pulsed Drain Current ^b	I _{DS}	133	A
Power Dissipation ^c	P _D	T _C =25°C	25
		T _C =100°C	10
Power Dissipation ^a	P _D	T _A =25°C	3.1
		T _A =70°C	2
Avalanche Current ^b L=0.5mH Single Pulse	I _{AS}	9.6	A
Avalanche Energy ^b L=0.5mH Single Pulse	E _{AS}	28	mJ
Operation junction temperature	T _J	-55~150	°C
Storage temperature range	T _{STG}	-55~150	

➤ Thermal Resistance Ratings (T_A=25°C unless otherwise noted)

Parameter	Typical	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^a	R _{θJA}	40	52	°C/W
Junction-to-Case Thermal Resistance	R _{θJC}	5	6.5	

Note:

- The value of R_{θJA} is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with T_A=25°C. The value in any given application depends on the user is specific board design. The power dissipation is based on the t≤10s thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- 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.
- The maximum current rating is package limited.

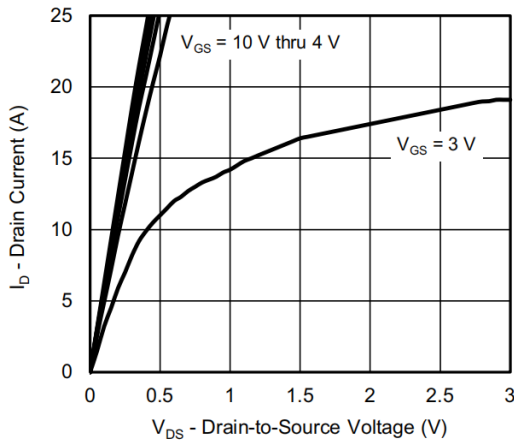


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

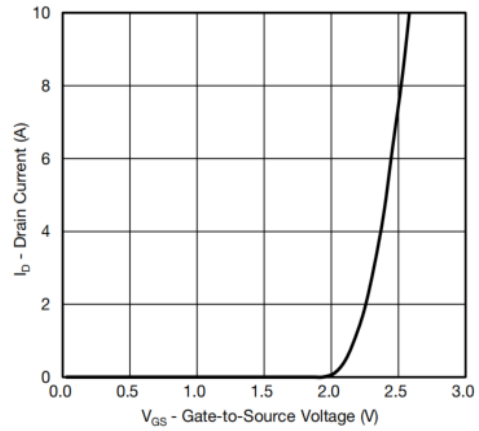
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.7	3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 12A		14	18	mΩ
		V _{GS} = 4.5V, I _D = 8A		21	27	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			1	μA
Gate-Source Leak Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Transconductance	G _{FS}	V _{DS} = 15V, I _D = 12A		32		s
Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 1A		0.7	1	V
Gate Resistance	R _g	V _{DS} = 0V, f=1MHZ		2.3		Ω
Input Capacitance	C _{ISS}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		715		pF
Output Capacitance	C _{OSS}			81		
Reverse Transfer Capacitance	C _{RSS}			67		
Total Gate Charge	Q _G	V _{GS} = 10V, V _{DS} = 15V, I _D = 15A		16.7		nC
Gate to Source Charge	Q _{GS}			2.4		
Gate to Drain Charge	Q _{GD}			2.6		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = 10V, V _{DS} = 15V, R _L = 10Ω, R _G = 1Ω		17		ns
Rise Time	T _r			32		
Turn-off Delay Time	T _{D(OFF)}			16		
Fall Time	T _f			33		
Diode Recovery Time	T _{rr}	I _F =10A, di/dt=100A/us		22		ns
Diode Recovery Charge	Q _{rr}	I _F =10A, di/dt=100A/us		15		nC



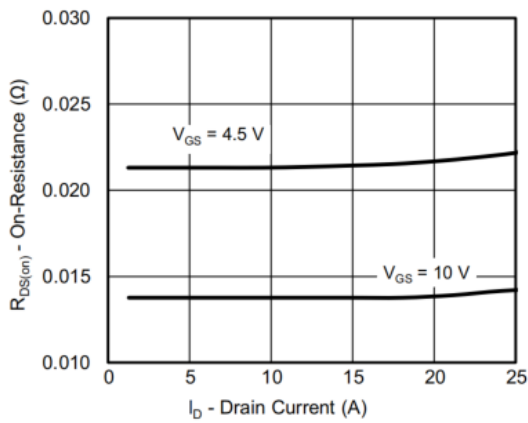
➤ **Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)**



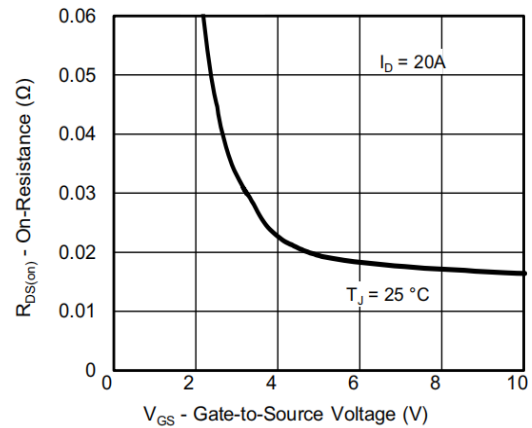
Output Characteristics



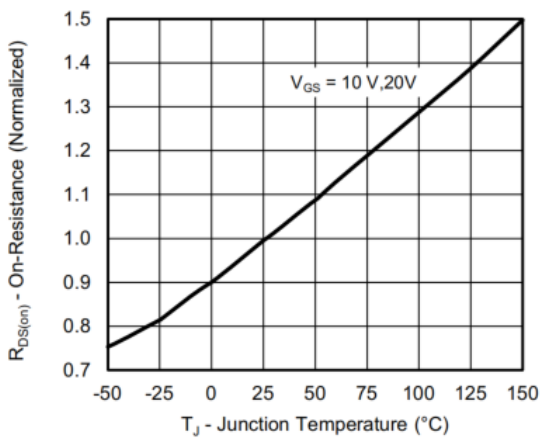
Transfer Characteristics



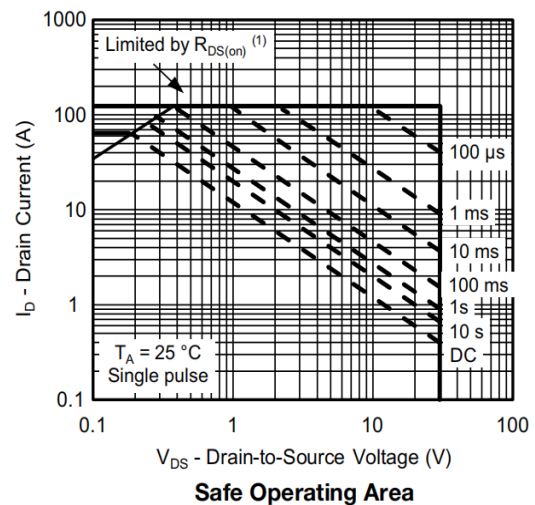
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

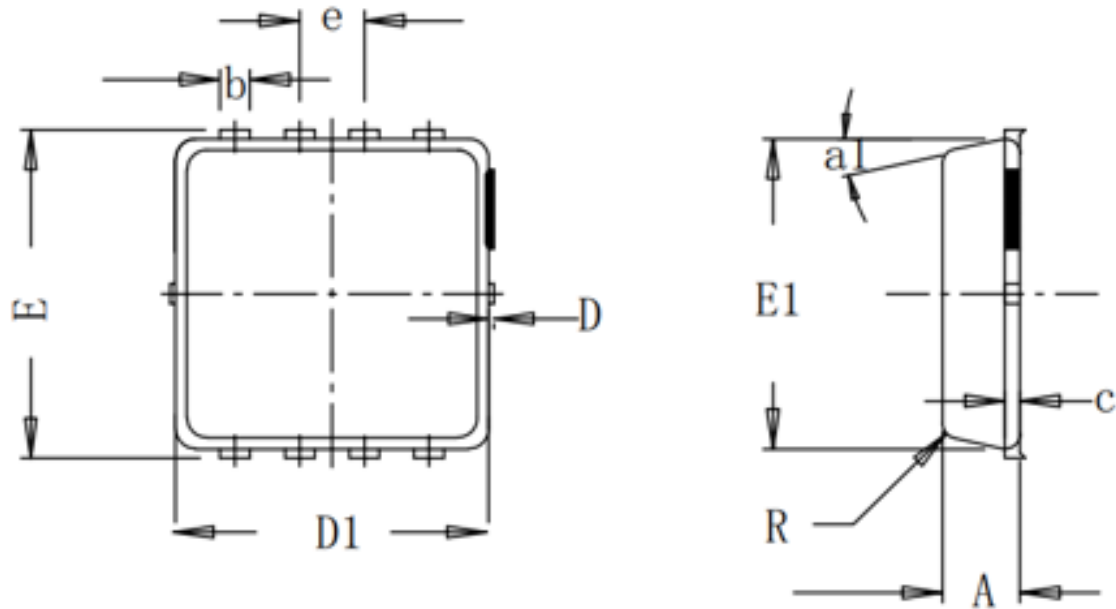


On-Resistance vs. Junction Temperature



Safe Operating Area

➤ Package Information



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	0.75	0.78	0.81
b	0.297	0.3	0.35
c	-	0.152	-
D	0	0.05	0.1
D1	3.12	3.15	3.18
D2	-	2.35	-
E	3.2	3.3	3.4
E1	3.09	3.12	3.15
E2	-	1.75	-
E3	-	0.575	-
E4	-	0.4	-
R	-	0.15	-
e	0.65BSC		
a1°	-	12°	-



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