SSC8634GN4

N and P-Channel Enhancement Mode Power MOSFET

➢ Features

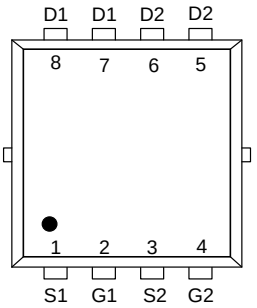
N-Channel

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
30V	±20V	15mΩ@10V	27A
		24mΩ@4V5	

P-Channel

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
-30V	±20V	18mΩ@-10V	-26A
		26mΩ@-4V5	

➢ Pin configuration

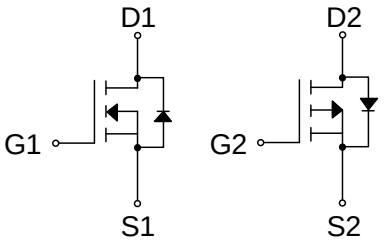


PDFN3.3X3.3-8L (Top View)

➢ Description

The SSC8634GN4 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.

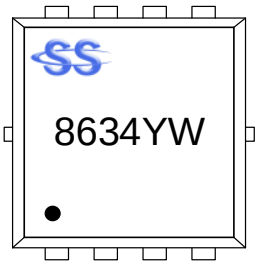
100% UIS + ΔVDS + Rg Tested!



Pin Configuration

➢ Applications

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



Marking

(YW: Internal Traceability Code)

➢ Ordering Information

Device	Package	Shipping
SSC8634GN4	PDFN3.3X3.3-8L	5000/Reel

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

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-to-Source Voltage		V_{DSS}	30	-30	V
Gate-to-Source Voltage		V_{GSS}	±20	±20	V
Continuous Drain Current [a]	T_A=25℃	I_D	27	-26	A
	T_A=100℃		14	-13.6	A
Pulsed Drain Current [b]		I_{DM}	108	-100	A
Power Dissipation [a]		P_{DSM}	2.6	2.6	W
Avalanche Energy [b] L=0.5mH Single Pulse		I_{AS}	10	16	A
Avalanche Energy [b] L=0.5mH Single Pulse		E_{AS}	25	64	mJ
Power Dissipation [c]	T_A=25℃	P_D	21	20	W
	T_A=100℃		8.2	8	W
Operation junction temperature		T_J	-55 to 150	-55 to 150	℃
Storage temperature range		T_{STG}	-55 to 150	-55 to 150	℃

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

Symbol	Parameter	N-Channel	P-Channel	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	47	48	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	6	6.25	

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.

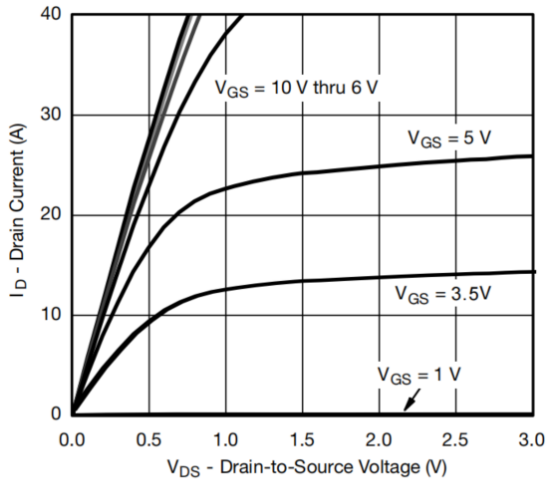
➢ N-Channel Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	1	1.8	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 7A		15	20	mΩ
		V_{GS} = 4.5V, I_D = 5A		24	31	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 30V, V_{GS} = 0V			1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Transconductance	G_{FS}	V_{DS} = 5V, I_D = 6A		10		s
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 1A		0.76	1.3	V
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 = 8A		14		nC
Gate to Source Charge	Q_{GS}			2.2		
Gate to Drain Charge	Q_{GD}			1.82		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 15V, R_L = 10Ω, R_{GEN} = 6Ω		8.4		ns
Rise Time	T_r			7.7		
Turn-off Delay Time	$T_{D(OFF)}$			16.8		
Fall Time	T_f			5.5		

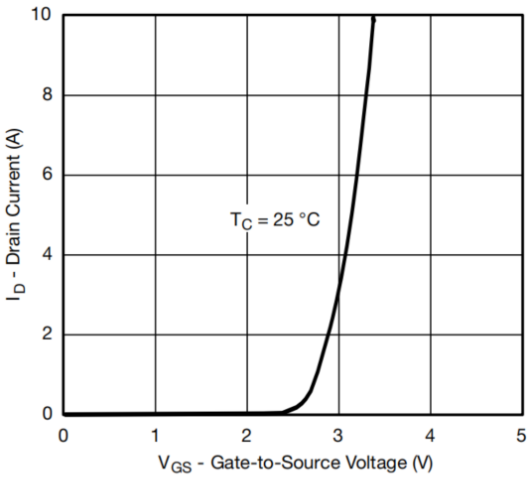
➢ P-Channel Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250uA	-1	-1.6	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -7A		15	20	mΩ
		V_{GS} = -4.5V, I_D = -5A		18	23	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30V, V_{GS} = 0V			-1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Transconductance	G_{FS}	V_{DS} = -5V, I_D = -4A		15		s
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = -1A		-0.76	-1.3	V
Input Capacitance	C_{ISS}	V_{DS} = -15V, V_{GS} = 0V, f = 1MHz		1300		pF
Output Capacitance	C_{OSS}			182		
Reverse Transfer Capacitance	C_{RSS}			161		
Total Gate Charge	Q_G	V_{GS} = -15V, V_{DS} = -10V, I_D = -6A		25.5		nC
Gate to Source Charge	Q_{GS}			4.5		
Gate to Drain Charge	Q_{GD}			6.12		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = -15V, V_{DS} = -10V, R_L = 10Ω, R_{GEN} = 6Ω		7.8		ns
Rise Time	T_r			34.4		
Turn-off Delay Time	$T_{D(OFF)}$			49.4		
Fall Time	T_f			11		

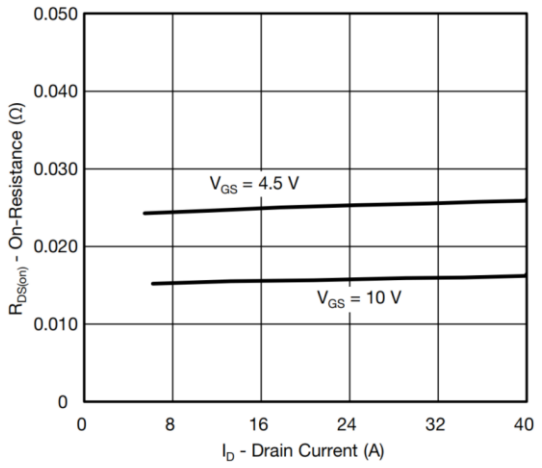
➢ N-Channel Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



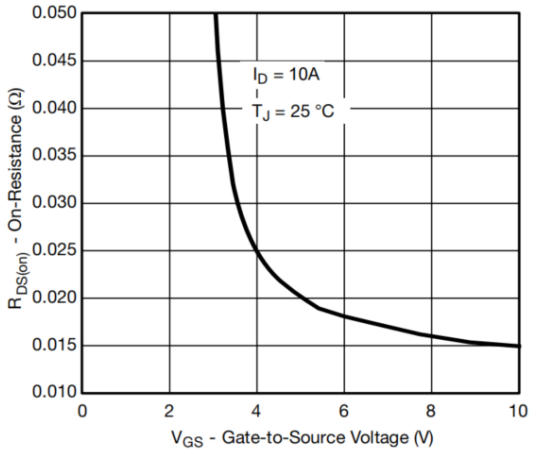
Output Characteristics



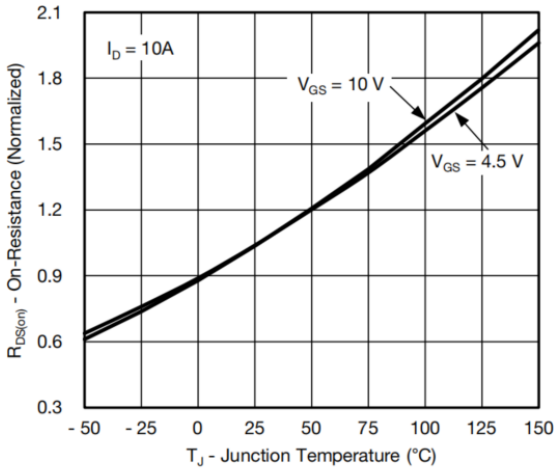
Transfer Characteristics



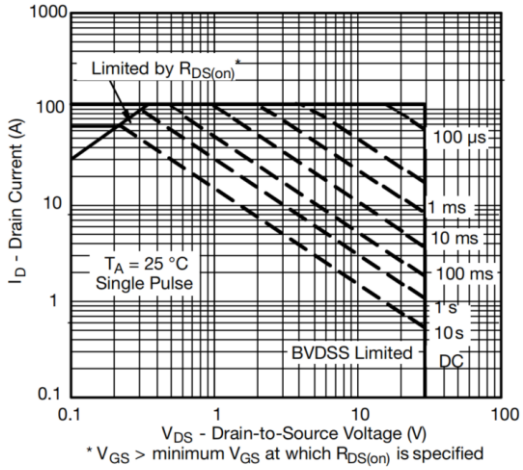
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

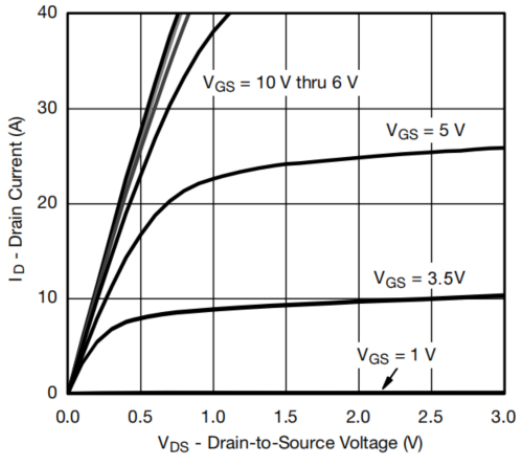


On-Resistance vs. Junction Temperature

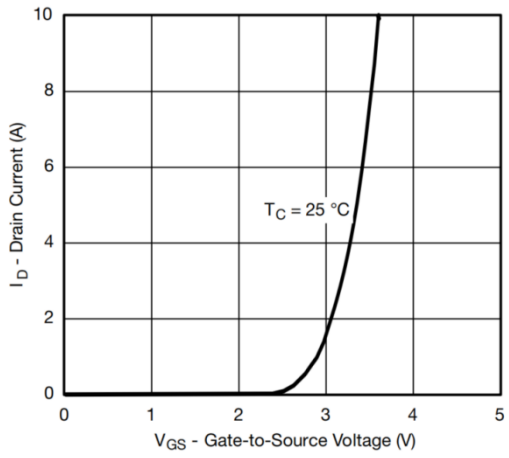


Safe Operating Area, Junction-to-Ambient

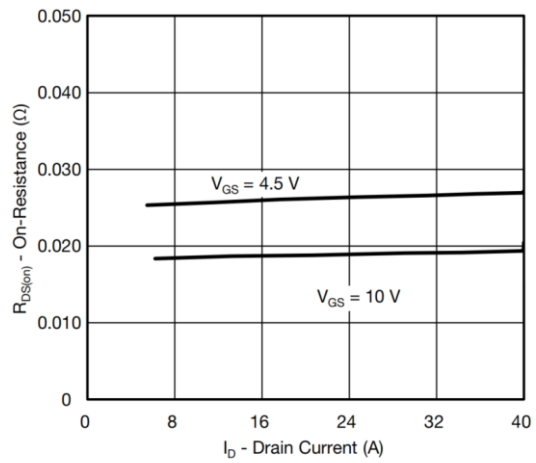
➢ P-Channel Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



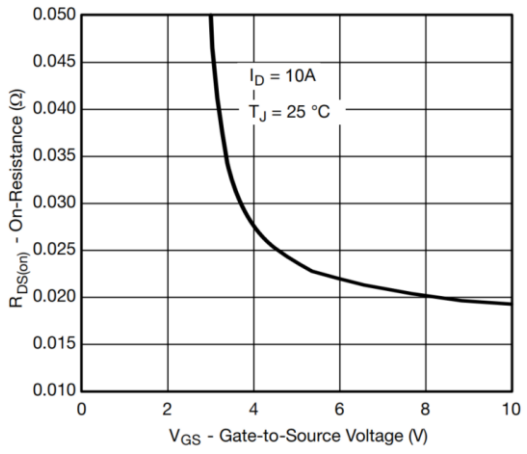
Output Characteristics



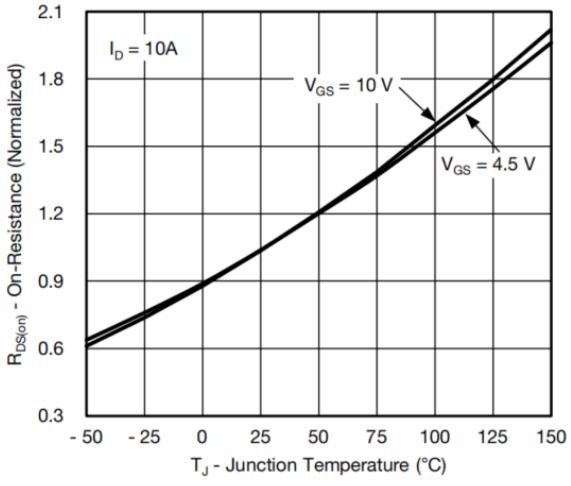
Transfer Characteristics



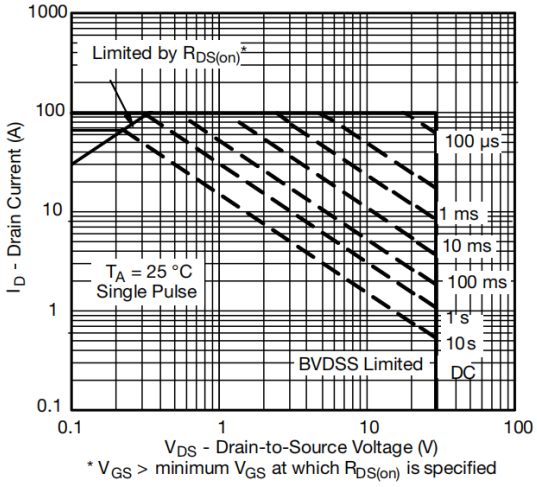
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

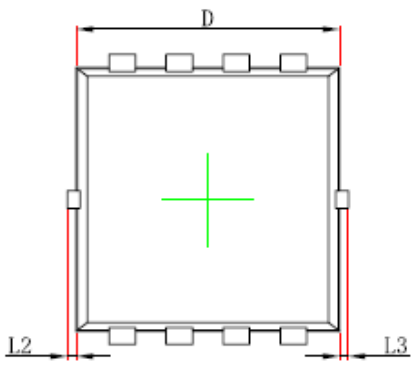


On-Resistance vs. Junction Temperature

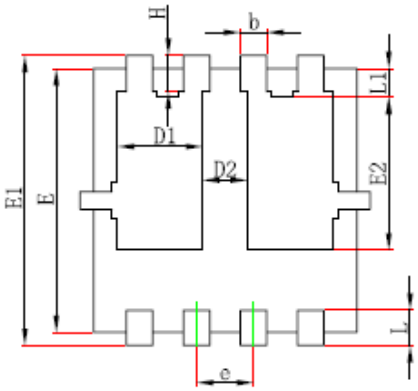


Safe Operating Area, Junction-to-Ambient

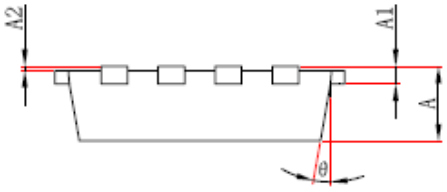
➢ Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	0.935	1.135	0.037	0.045
D2	0.280	0.480	0.011	0.019
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

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