



## SSC8530GN4

### Dual N-Channel Enhancement MOSFET

#### ➤ Features

VDS	VGS	RDSON Typ.	ID
30V	±20V	10mR@10V	18A
		12.5mR@4V5	

#### ➤ Description

SSC8530GN4 uses advanced trench technology to provide excellent RDSON 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.

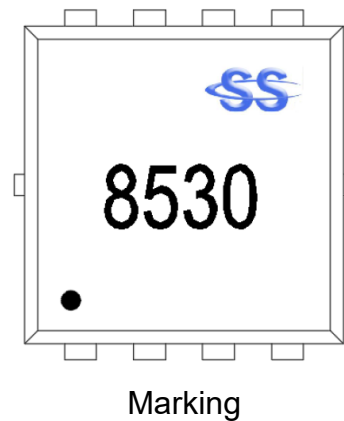
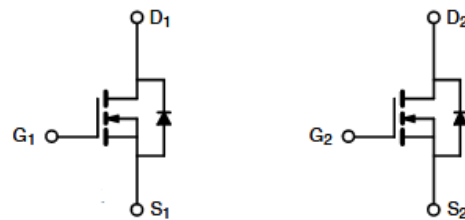
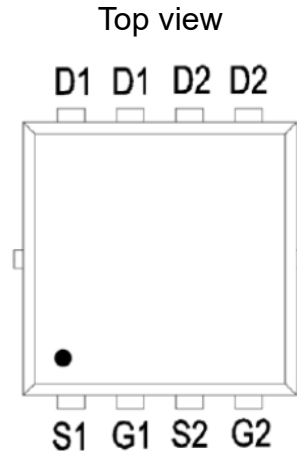
#### ➤ Applications

- Inverter
- DC-DC converter
- Half and Full Bridge Topology
- Wireless Charging

#### ➤ Ordering Information

Device	Package	Shipping
SSC8530GN4	PDFN3.3X3.3	5000/Reel

#### ➤ Pin configuration



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

Symbol	Parameter	Ratings	Unit	
$V_{DSS}$	Drain-to-Source Voltage	30	V	
$V_{GSS}$	Gate-to-Source Voltage	$\pm 20$	V	
$I_D$	Continuous Drain Current <sup>d</sup>	TC=25 $^{\circ}\text{C}$	18	A
		TC=100 $^{\circ}\text{C}$	13	A
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	55	A	
$I_{AS}$	Avalanche Current <sup>b</sup> L=0.5mH	14	A	
$E_{AS}$	Avalanche Energy <sup>b</sup> L=0.5mH	49	mJ	
$I_D$	Continuous Drain Current <sup>a</sup>	TA=25 $^{\circ}\text{C}$	12	A
		TA=70 $^{\circ}\text{C}$	9	A
$P_D$	Power Dissipation <sup>c</sup>	TC=25 $^{\circ}\text{C}$	20	W
		TC=100 $^{\circ}\text{C}$	8	W
$P_{DSM}$	Power Dissipation <sup>a</sup>	TA=25 $^{\circ}\text{C}$	2.7	W
		TA=70 $^{\circ}\text{C}$	1.7	W
$T_J$	Operation junction temperature	-55 to 150	$^{\circ}\text{C}$	
$T_{STG}$	Storage temperature range	-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 <sup>a</sup>	45	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	6	

Note:

- The value of  $R_{\theta JA}$  is measured with the device mounted on 1 in<sup>2</sup> 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  $T_{J(\text{MAX})}=150^{\circ}\text{C}$ , 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.

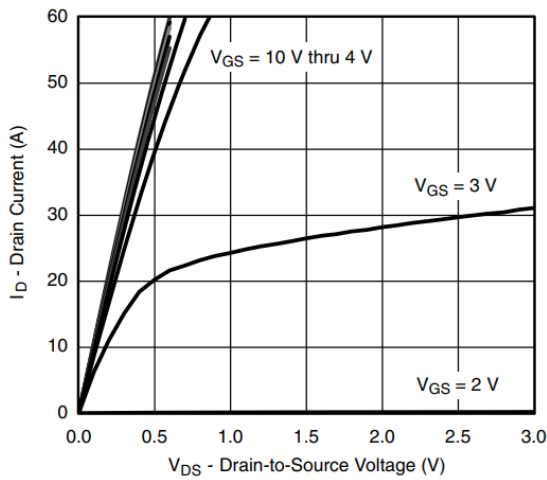


➤ **Electronics Characteristics**( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

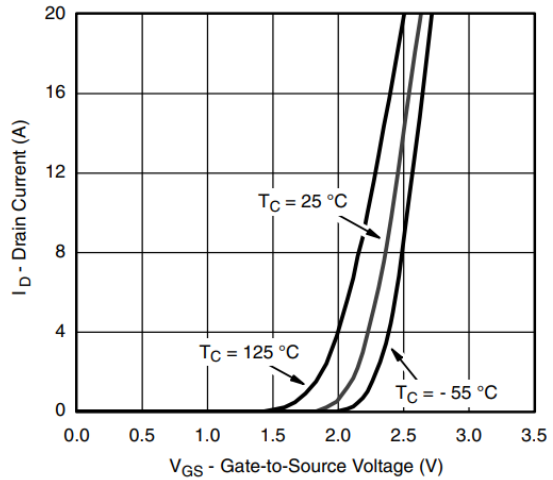
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2	V
$R_{DS(on)}$	Drain-Source On- Resistance	$V_{GS}=10V, I_D=20A$		10	12	mR
		$V_{GS}=4.5V, I_D=10A$		12.5	15	
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=24V, V_{GS}=0V$			1	$\mu A$
$I_{GSS}$	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
$G_{FS}$	Transconductance	$V_{DS}=5V, I_D=10A$		10		S
$V_{SD}$	Forward Voltage	$V_{GS}=0V, I_S=5A$		0.8	1.3	V
$R_g$	Gate Resistance	$V_{GS}=0V, f=1\text{MHz}$		2.5		R
$C_{iss}$	Input Capacitance	$V_{DS}=15V, V_{GS}=0V,$ $f=1\text{MHz}$		770		pF
$C_{oss}$	Output Capacitance			190		
$C_{rss}$	Reverse Transfer Capacitance			20		
$Q_g$	Total Gate Charge	$V_{DS}=15V, V_{GS}=10V,$ $I_D=10A$		16		nC
$Q_{gs}$	Gate Source Charge			5		
$Q_{gd}$	Gate Drain Charge			5.5		
$T_{D(ON)}$	Turn-on delay time	$V_{DS}=15V, V_{GS}=10V,$ $R_L=2R, R_{GEN}=3R$		10		ns
$T_r$	Rise time			12		
$T_{D(OFF)}$	Turn-off delay time			18		
$T_f$	Fall time			7		



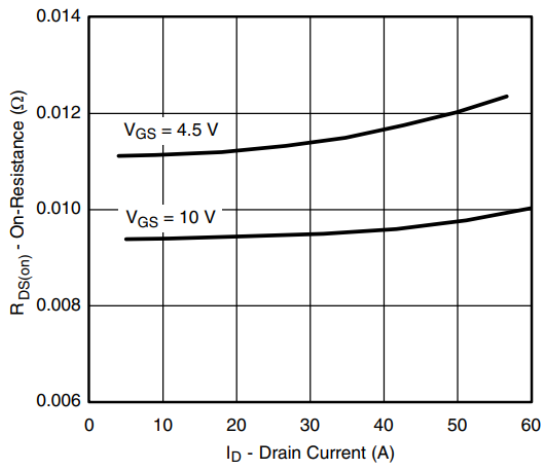
➤ **N-Channel Typical Characteristics**( $T_A=25^\circ\text{C}$  unless otherwise noted)



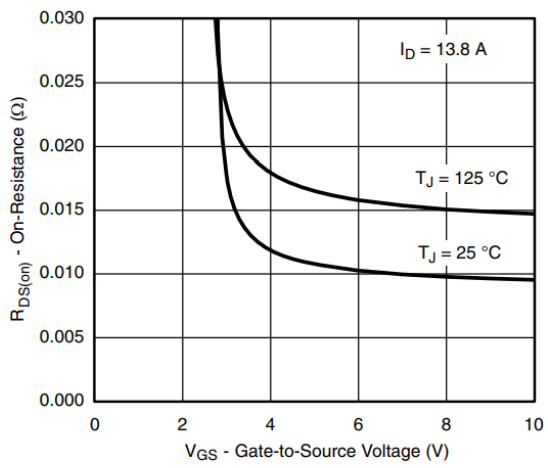
**Output Characteristics**



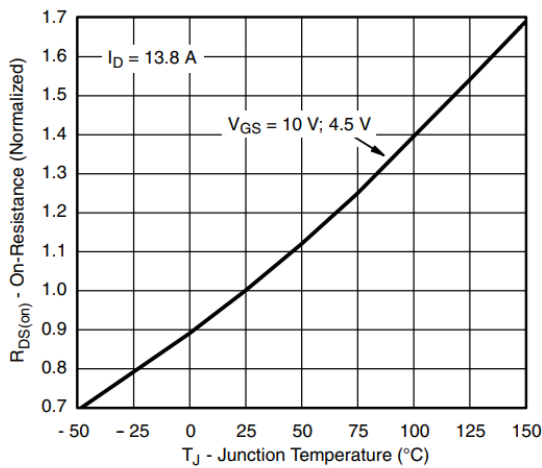
**Transfer Characteristics**



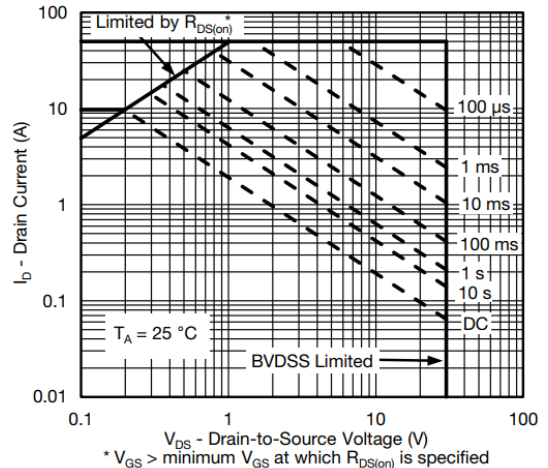
**On-Resistance vs. Drain Current**



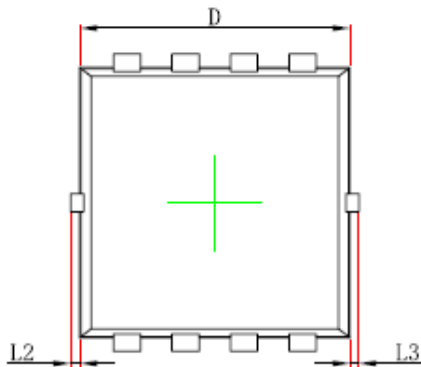
**On-Resistance vs. Gate-to-Source Voltage**



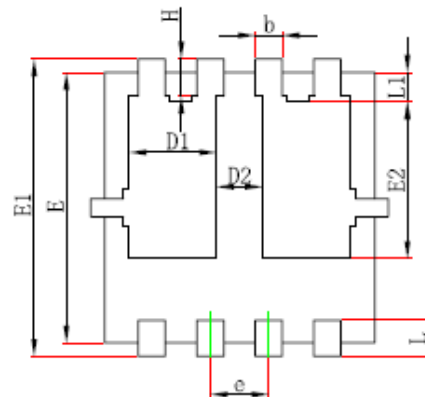
**On-Resistance vs. Junction Temperature**



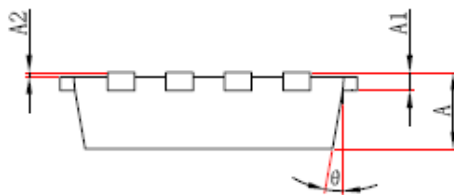
**Safe Operating Area, Junction-to-Ambient**

**➤ Package Information**


**Top View**  
[顶视图]



**Bottom View**  
[背视图]

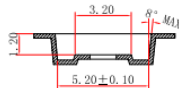
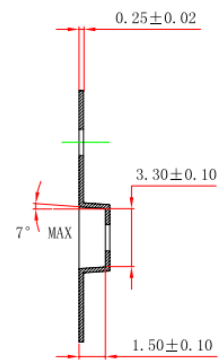
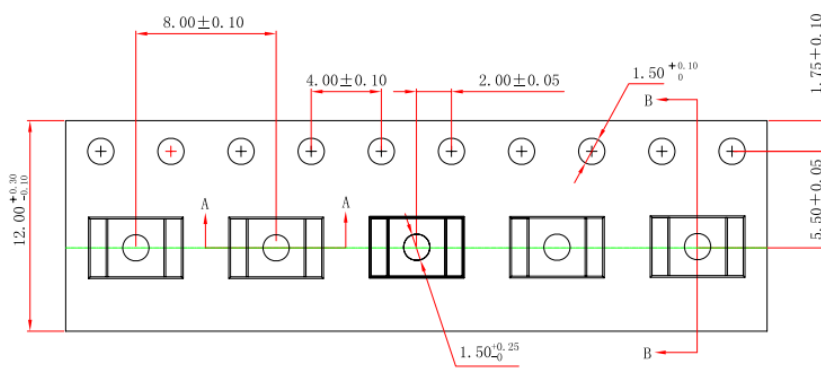
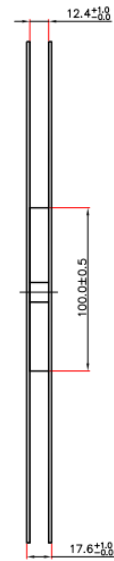
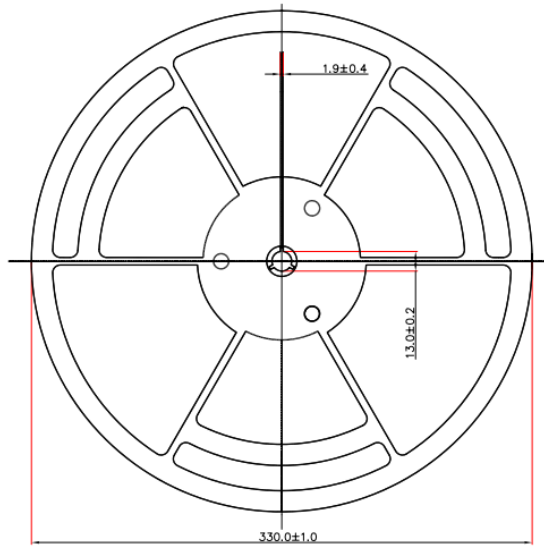


**Side View**  
[侧视图]

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°

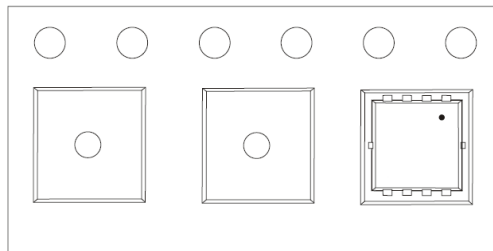


Tape and Reel Data



A-A

B-B





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