



SSCU30DN60GN6

Dual N - Channel Enhancement MOSFET

Features

V _{DS}	V _{GS}	R _{DS(ON)} Typ.	I _D
60V	±20V	26mΩ@10V	30A
		32mΩ@4.5V	

Description

The SSCU30DN60GN6 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!

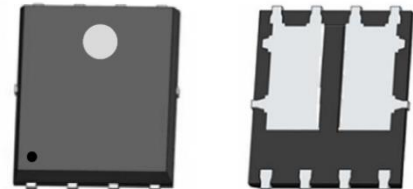
Applications

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

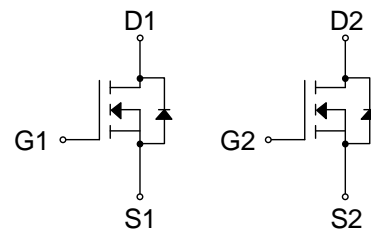
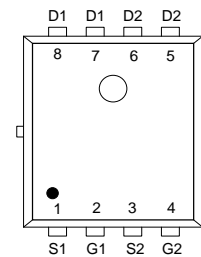
Ordering Information

Device	Package	Shipping
SSCU30DN60GN6	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}	60	V
Gate-to-Source Voltage		V_{GSS}	± 20	V
Continuous Drain Current ^d	$T_C = 25^\circ\text{C}$	I_D	30	A
	$T_C = 100^\circ\text{C}$		16	A
Continuous Drain Current ^a	$T_A = 25^\circ\text{C}$	I_{DSM}	8.5	A
	$T_A = 70^\circ\text{C}$		6	A
Pulsed Drain Current ^b		I_{DM}	120	A
Power Dissipation ^c	$T_C = 25^\circ\text{C}$	P_D	35	W
	$T_C = 100^\circ\text{C}$		14	W
Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_{DSM}	3	W
	$T_A = 70^\circ\text{C}$		1.9	W
Avalanche Energy ^b L=0.5mH Single Pulse		I_{AS}	23.6	A
Avalanche Energy ^b L=0.5mH Single Pulse		E_{AS}	140	mJ
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	42	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	3.5	

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 power dissipation 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.



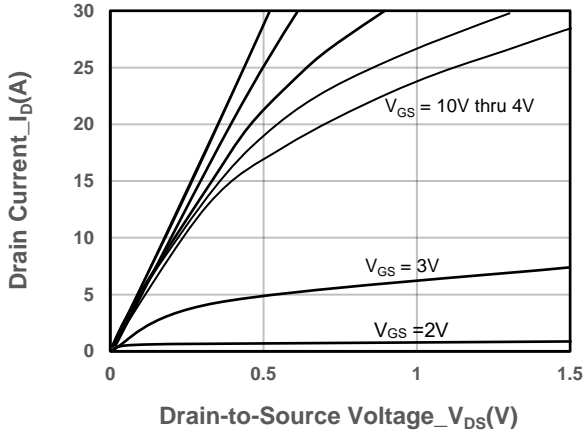
SSCU30DN60GN6

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

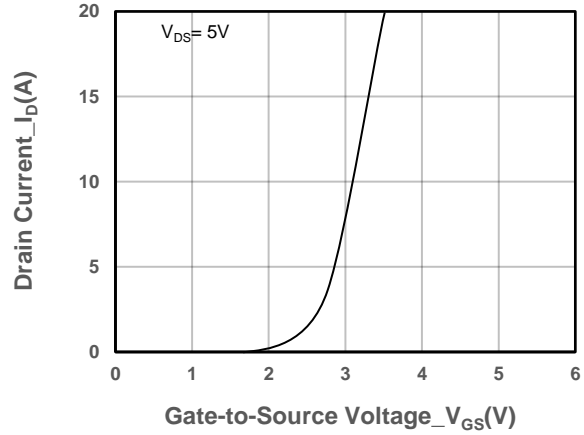
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250uA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	1	1.6	2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 10A		26	34	mΩ
		V _{GS} = 4.5V, I _D = 7A		32	43	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60V, 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		0.7	1.3	V
Gate resistance	R _g	V _{DS} =0V, f=1MHz		2		Ω
Input Capacitance	C _{ISS}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz		1408		pF
Output Capacitance	C _{OSS}			64		
Reverse Transfer Capacitance	C _{RSS}			60		
Total Gate Charge	Q _G	V _{GS} = 10V, V _{DS} = 30V, I _D = 12A		23		nC
Gate to Source Charge	Q _{GS}			6		
Gate to Drain Charge	Q _{GD}			3		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = 10V, V _{DS} = 30V, R _L = 1Ω, R _{GEN} = 3Ω		7.5		ns
Rise Time	T _r			26		
Turn-off Delay Time	T _{D(OFF)}			19		
Fall Time	T _f			28		



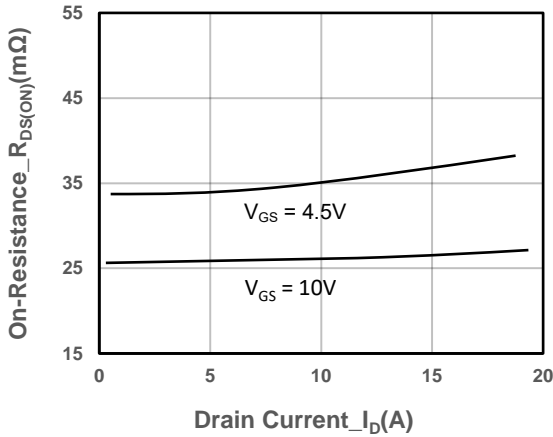
➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



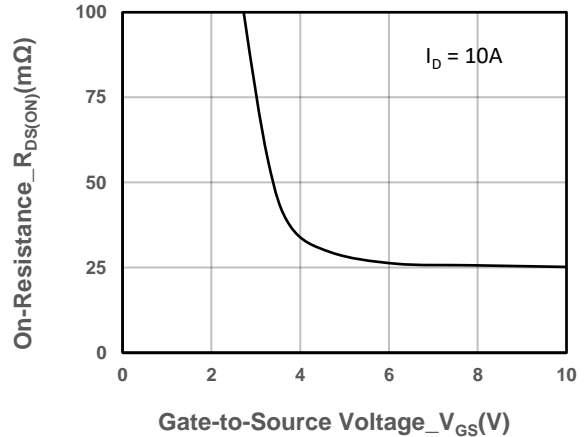
Output Characteristics



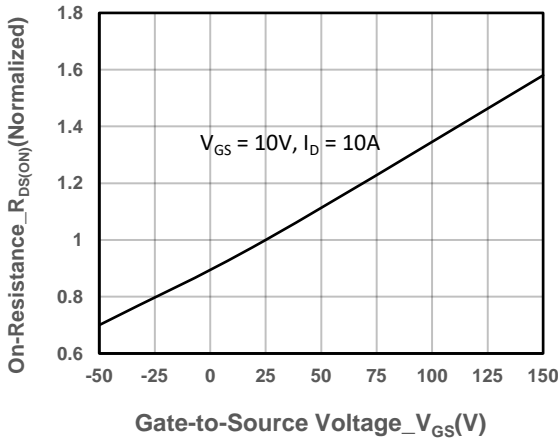
Transfer Characteristics



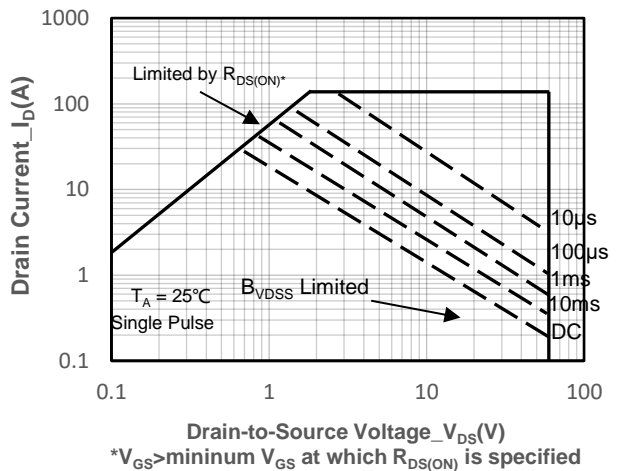
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage



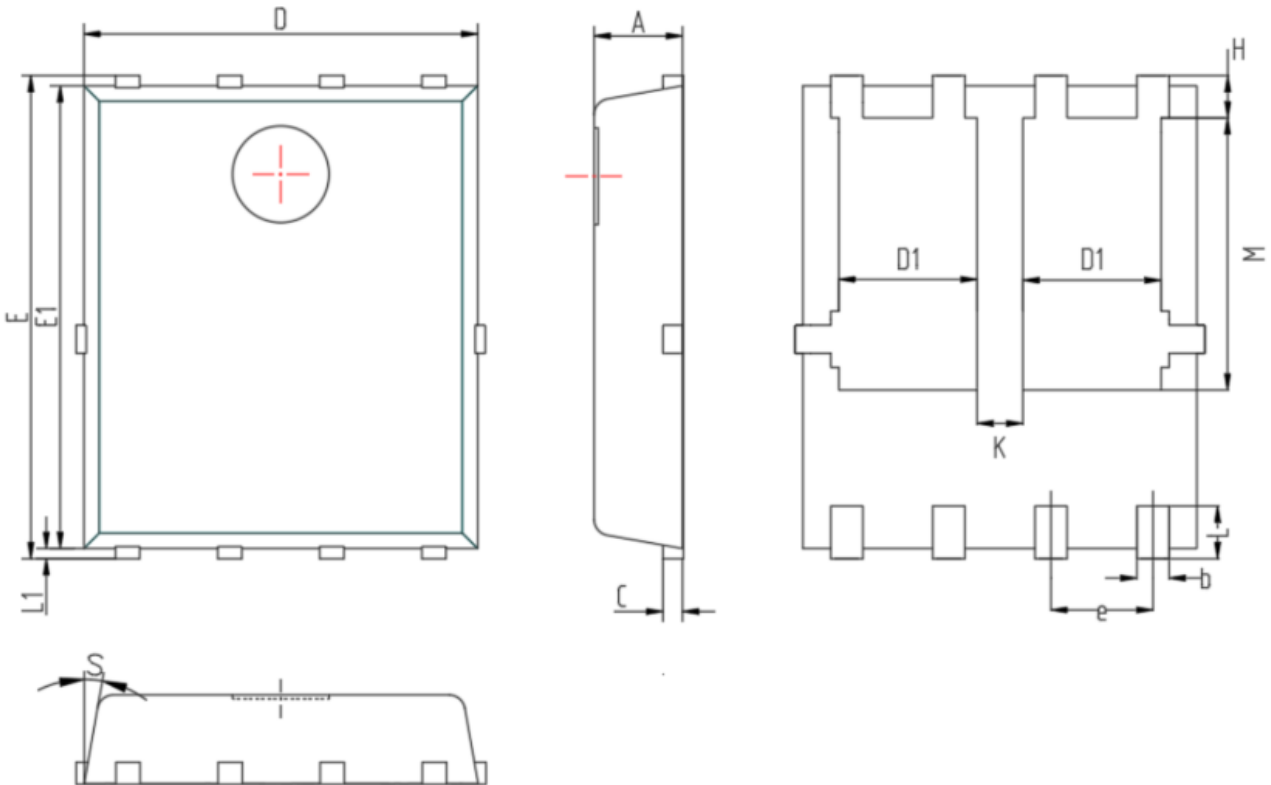
On-Resistance vs. Junction Temperature



Safe Operating Area 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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