



SSC8041GN6

P-Channel Enhancement Mode MOSFET

➤ Features

V _{DS}	V _{GS}	R _{DS(ON)}	I _D
-40V	±20V	9mΩ@-10V	-58A
		16mΩ@-4V5	

➤ Description

This SSC8041GN6 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.

100% UIS + ΔVDS + Rg Tested!

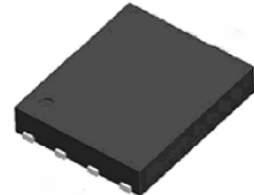
➤ Applications

- Load Switch
- PWM Application
- Power Management

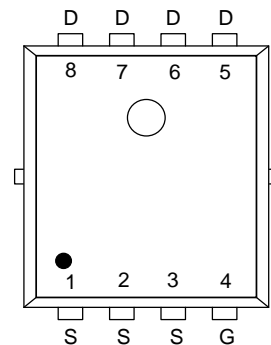
➤ Ordering Information

Device	Package	Shipping
SSC8041GN6	PDFN5X6-8L	5000/Reel

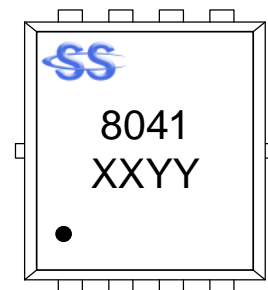
➤ Pin configuration



PDFN5X6-8L (Top View)



Pin Configuration



Marking

(XXYY: Internal Traceability Code)



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

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	-40	V
V_{GSS}	Gate-to-Source Voltage	± 20	V
I_D	Continuous Drain Current ^d	$T_C=25^\circ\text{C}$	-58
		$T_C=100^\circ\text{C}$	-32
I_{DSM}	Continuous Drain Current ^a	$T_A=25^\circ\text{C}$	-18
		$T_A=70^\circ\text{C}$	-13
I_{DM}	Pulsed Drain Current ^b	-230	A
P_D	Power Dissipation ^c	$T_C=25^\circ\text{C}$	43
		$T_C=100^\circ\text{C}$	17
P_{DSM}	Power Dissipation ^a	$T_A=25^\circ\text{C}$	4.2
		$T_A=70^\circ\text{C}$	2.7
I_{AS}	Avalanche Current ^b $L=0.5\text{mH}$ Single Pulse	-17	A
E_{AS}	Avalanche Energy ^b $L=0.5\text{mH}$ Single Pulse	75	mJ
T_J	Operation junction temperature	-55~150	$^\circ\text{C}$
T_{STG}	Storage temperature range	-55~150	

➤ 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	30	$^\circ\text{C/W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	2.9	

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 is 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.

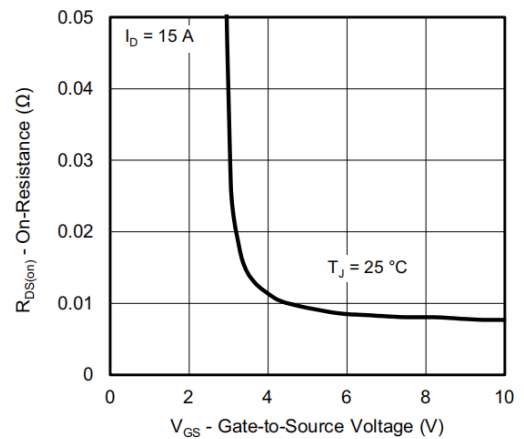
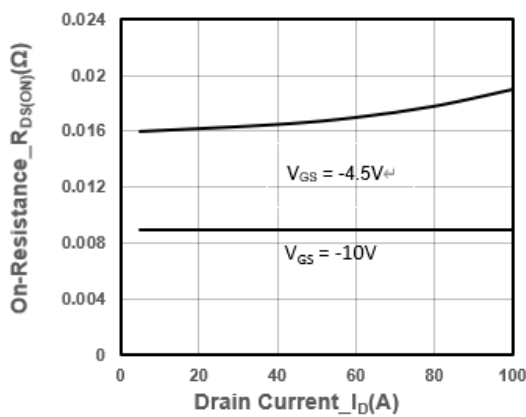
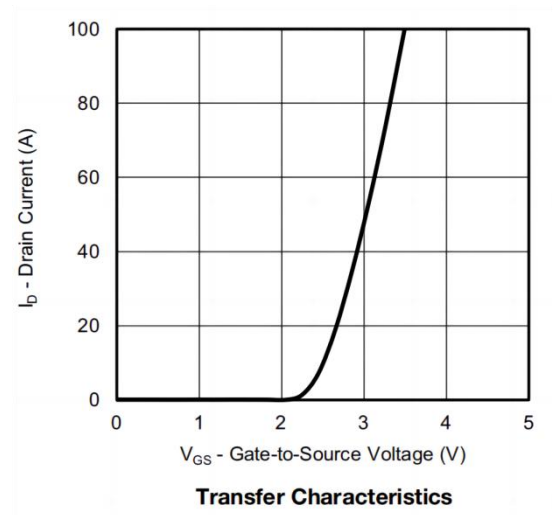
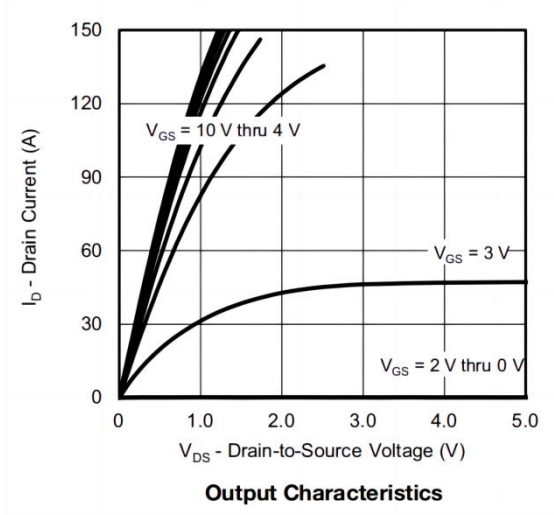


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-40			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250uA	-1.2	-2.1	-3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -20A		9	13	mΩ
		V _{GS} = -4.5V, I _D = -10A		16	23	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -40V, 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 = -12A		40		s
Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = -5A			1.3	V
Gate Resistance	R _G	V _{DS} = 0V, f = 1MHz		4		Ω
Input Capacitance	C _{ISS}	V _{DS} = -20V, V _{GS} = 0V, f = 1MHz		2600		pF
Output Capacitance	C _{OSS}			260		
Reverse Transfer Capacitance	C _{RSS}			230		
Total Gate Charge	Q _G	V _{GS} = -10V, V _{DS} = -20V, I _D = -15A		16		nC
Gate to Source Charge	Q _{GS}			5		
Gate to Drain Charge	Q _{GD}			6		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = -10V, V _{DS} = -10V, R _L = 10Ω, R _G = 1Ω,		13		ns
Rise Time	T _r			13		
Turn-off Delay Time	T _{D(OFF)}			25		
Fall Time	T _f			9		
Diode Recovery Time	T _{rr}	I _F = -20A, di/dt = 500A/us		19		ns
Diode Recovery Charge	Q _{rr}	I _F = -20A, di/dt = 500A/us		22		nC

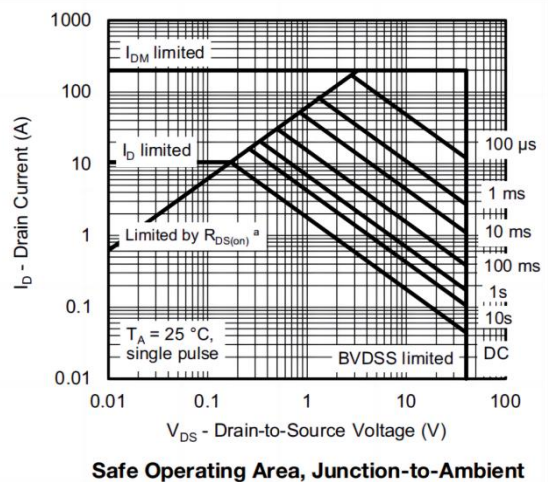
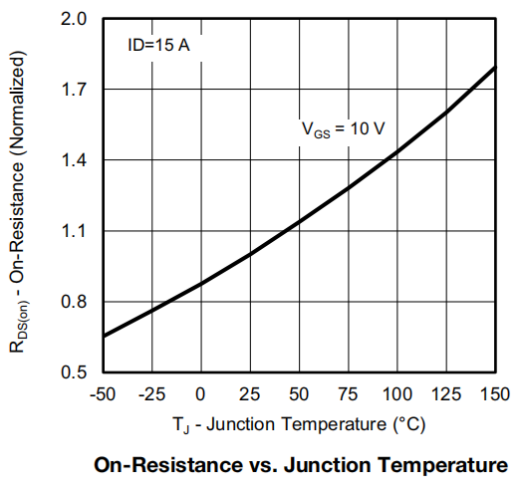


➤ **Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)**



On-Resistance vs. Drain Current and Gate Voltage

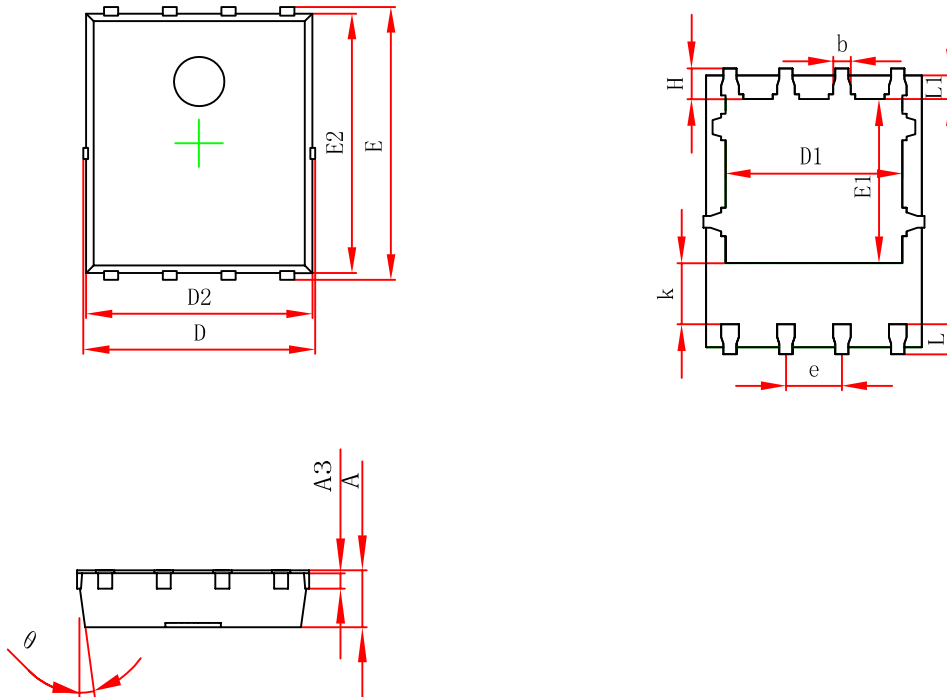
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

Safe Operating Area, Junction-to-Ambient

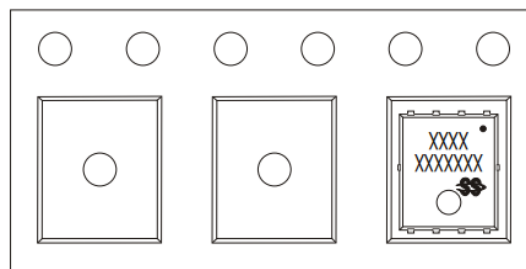
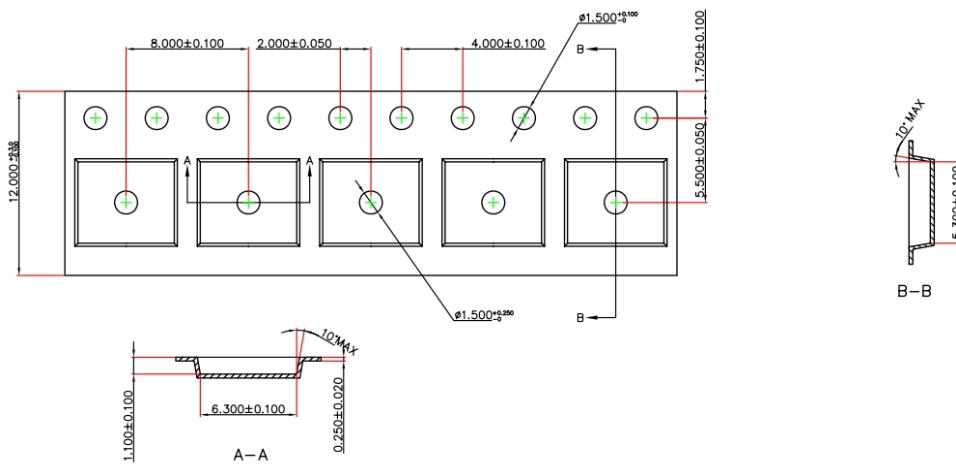
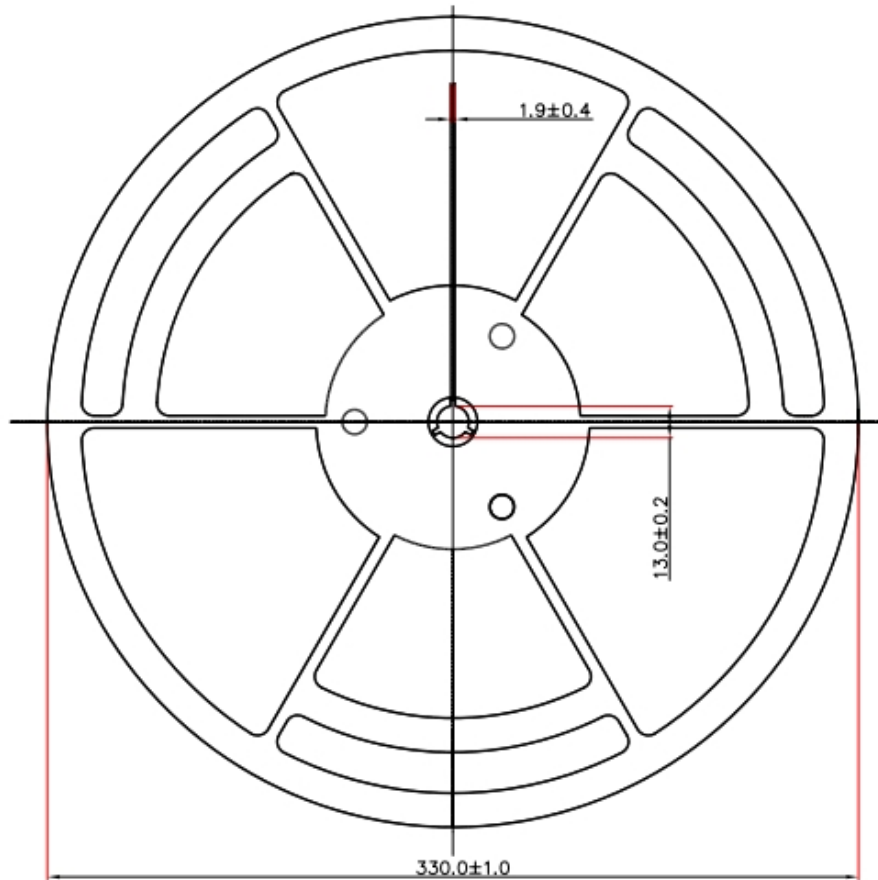
Package Information



Package: PDNF5X6-8L

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

➤ Tape and Reel





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