



SSC8029GN2

P-Channel Enhancement Mode MOSFET

➤ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
20V	$\pm 12V$	18m Ω @10V	-7.5A
		21m Ω @4V5	

➤ Description

This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package.

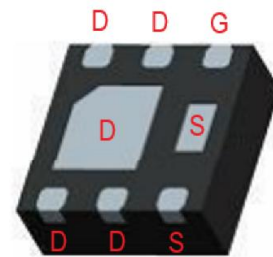
➤ Applications

- Load Switch
- Portable Devices
- DCDC Conversion
- Charging

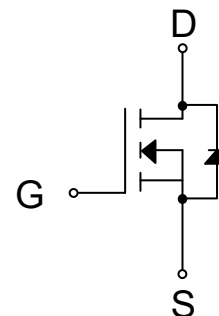
➤ Ordering Information

Device	Package	Shipping
SSC8029GN2	DFN2020-6L	3000/Reel

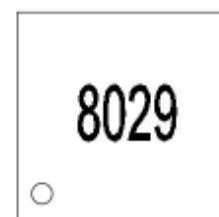
➤ Pin Configuration



DFN2020-6L (Bottom View)



Pin Configuration



Marking

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

Parameter		Symbol	Ratings	Unit
Drain-to-Source Voltage		V_{DS}	-20	V
Gate-to-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current ^d	$T_C=25^{\circ}\text{C}$	I_D	-7.5	A
	$T_C=100^{\circ}\text{C}$		-4	
Pulsed Drain Current ^b		I_{DM}	-24	A
Power Dissipation ^c	$T_C=25^{\circ}\text{C}$	P_D	3	W
	$T_C=100^{\circ}\text{C}$		1.2	
Operation junction temperature		T_J	-55~150	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-55~150	

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

Parameter	Symbol	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^a	$R_{\theta JA}$	40	$^{\circ}\text{C}/\text{W}$

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.

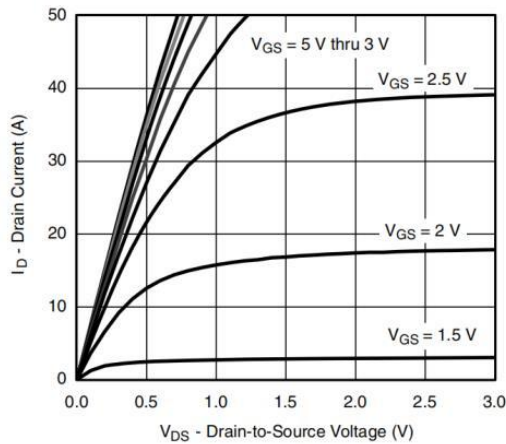


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

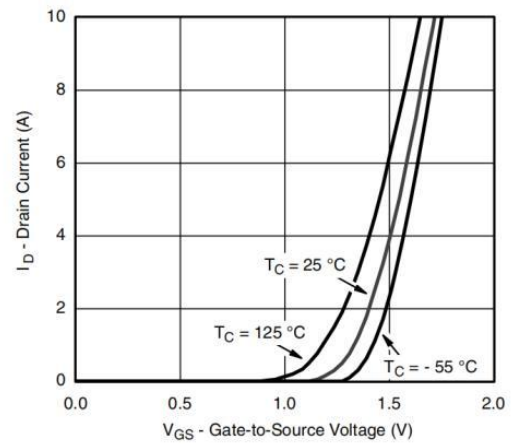
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250uA	-20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250uA	-0.45	-0.65	-1	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -5.5A		18	26	mΩ
		V _{GS} = -2.5V, I _D = -2.5A		21	30	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-Source Leak Current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 1A		-0.75	-1.5	V
Input Capacitance	C _{ISS}	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz		1970		pF
Output Capacitance	C _{OSS}			205		
Reverse Transfer Capacitance	C _{RSS}			195		
Total Gate Charge	Q _G	V _{GS} = -4.5V, V _{DS} = -10V, I _D = -5A		16		nC
Gate to Source Charge	Q _{GS}			2.4		
Gate to Drain Charge	Q _{GD}			4.1		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = -4.5V, V _{DS} = -10V, R _L = 6Ω, R _G = 6Ω, I _D = -6.5A		16		ns
Rise Time	T _r			14		
Turn-off Delay Time	T _{D(OFF)}			78		
Fall Time	T _f			66		



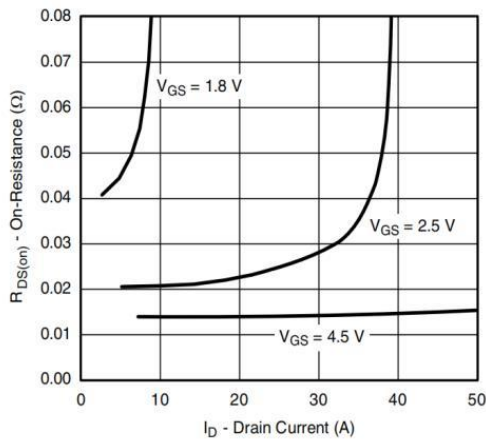
➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



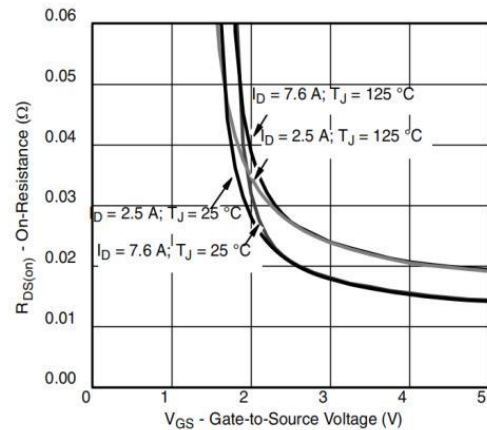
Output Characteristics



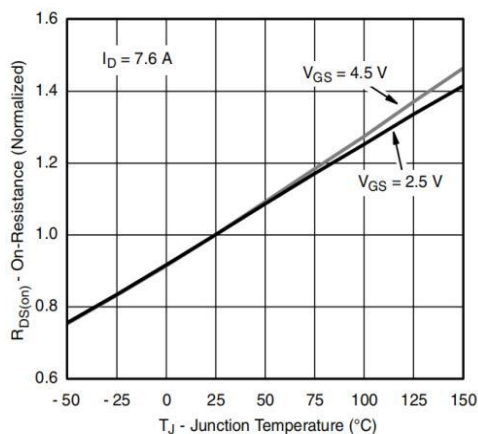
Transfer Characteristics



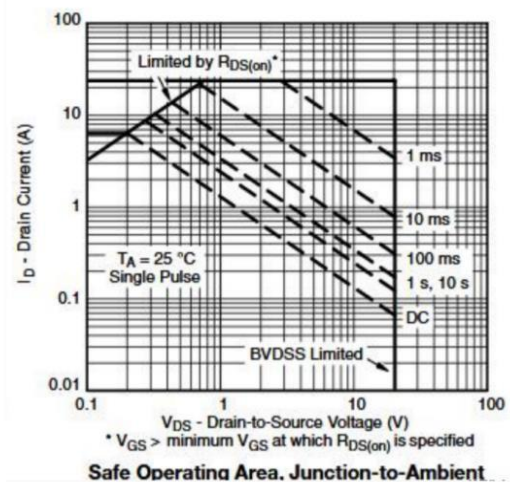
On-Resistance vs. Drain Current



On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

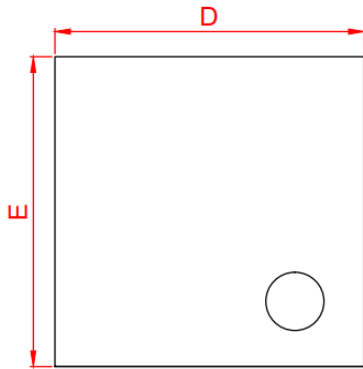


* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

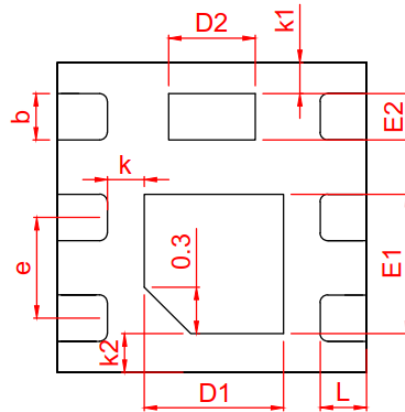
Safe Operating Area, Junction-to-Ambient



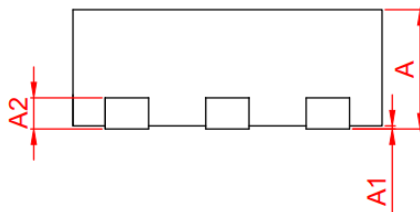
➤ Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.50	0.55	0.60
* A1	0.00	0.02	0.05
* b	0.25	0.30	0.35
* A2	0.152 BSC		
* D	1.95	2.00	2.05
* E	1.95	2.00	2.05
* E1	0.80	0.90	1.00
* E2	0.25	0.30	0.35
* D1	0.80	0.90	1.00
* D2	0.46	0.56	0.66
* e	0.65 REF		
* L	0.25	0.30	0.35
* K	0.20	0.25	0.30
* K1	0.15	0.20	0.25
* K2	0.20	0.25	0.30

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