



SSC8030GQ4

N-Channel Enhancement Mode MOSFET

➤ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
30V	$\pm 20V$	8m Ω @10V	29A
		10m Ω @4.5V	

➤ Description

This device uses advanced trench technology to provide excellent RDSON and low gate charge. This device is suitable for use as a load switch or in PWM applications.

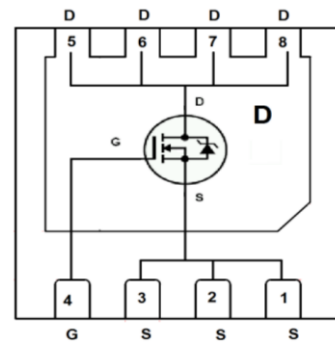
➤ Applications

- Load Switch
- NB/PC
- DCDC conversion

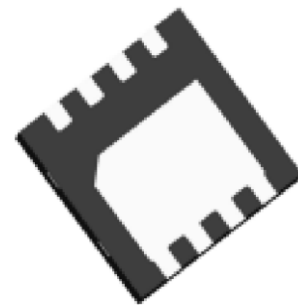
➤ Ordering Information

Device	Package	Shipping
SSC8030GQ4	PDFN3X3-8L	5000/Reel

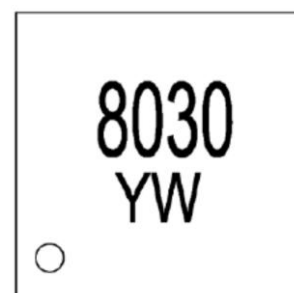
➤ Pin configuration



PDFN3x3-8L (Top View)



Bottom View



Marking

(Y: year/W: week)



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

Symbol	Parameter		Ratings	Unit
V_{DS}	Drain-to-Source Voltage		30	V
V_{GS}	Gate-to-Source Voltage		± 20	V
I_D	Continuous Drain Current ^d	$T_C = 25^{\circ}\text{C}$	29	A
		$T_C = 100^{\circ}\text{C}$	22	A
I_{DM}	Pulsed Drain Current ^b		90	A
I_{DSM}	Continuous Drain Current ^a	$T_A = 25^{\circ}\text{C}$	15	A
		$T_A = 70^{\circ}\text{C}$	12	A
P_D	Power Dissipation ^c	$T_C = 25^{\circ}\text{C}$	25	W
		$T_C = 100^{\circ}\text{C}$	10	W
P_{DSM}	Power Dissipation ^a	$T_A = 25^{\circ}\text{C}$	3.1	W
		$T_A = 70^{\circ}\text{C}$	2	W
I_S	Continuous Source Current		29	A
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 ^a	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 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 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.

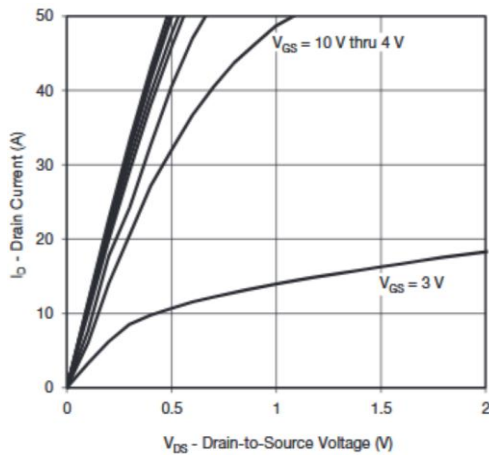


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

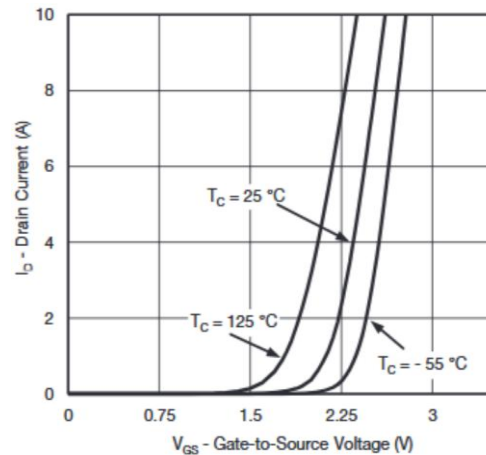
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250uA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	1		3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 15A		8	11	mΩ
		V _{GS} = 4.5V, I _D = 12A		10	14	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			1	μA
Gate-Source Leak Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			± 100	nA
Transconductance	G _{FS}	V _{DS} =15V, I _D =12A		56		S
Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 1A		0.8	1.5	V
Input Capacitance	C _{ISS}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		1200		pF
Output Capacitance	C _{OSS}			200		
Reverse Transfer Capacitance	C _{RSS}			105		
Total Gate Charge	Q _G	V _{GS} = 10V, V _{DS} = 10V, I _D = 14A		20		nC
Gate to Source Charge	Q _{GS}			3		
Gate to Drain Charge	Q _{GD}			5		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = 10V, V _{DS} = 15V, R _G = 3Ω		18		ns
Rise Time	T _r			6		
Turn-off Delay Time	T _{D(OFF)}			70		
Fall Time	T _f			17		



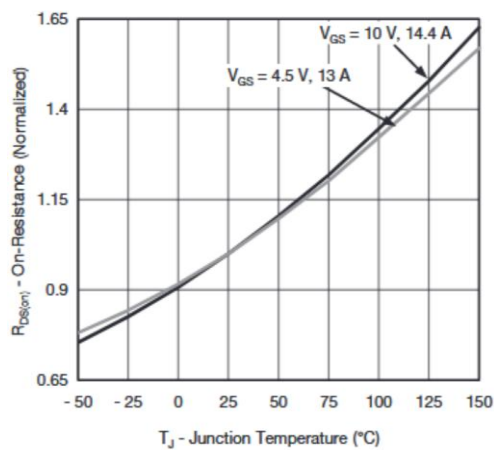
➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



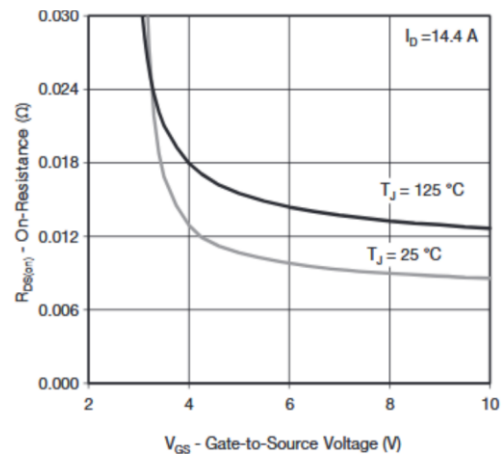
Output Characteristics



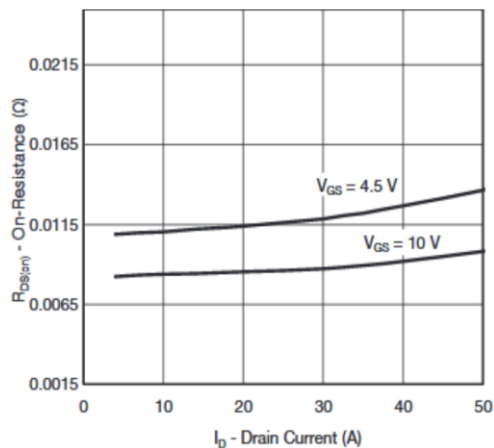
Transfer Characteristics



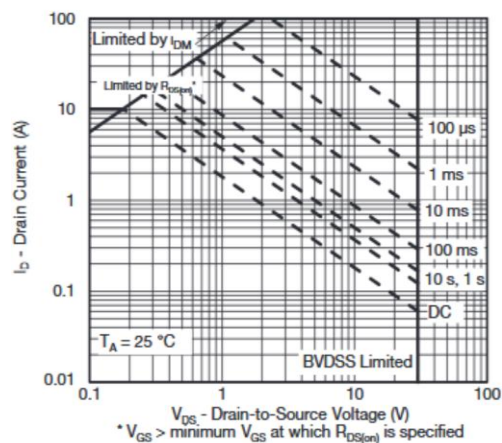
On-Resistance vs. Junction Temperature



On-Resistance vs. Gate-to-Source Voltage



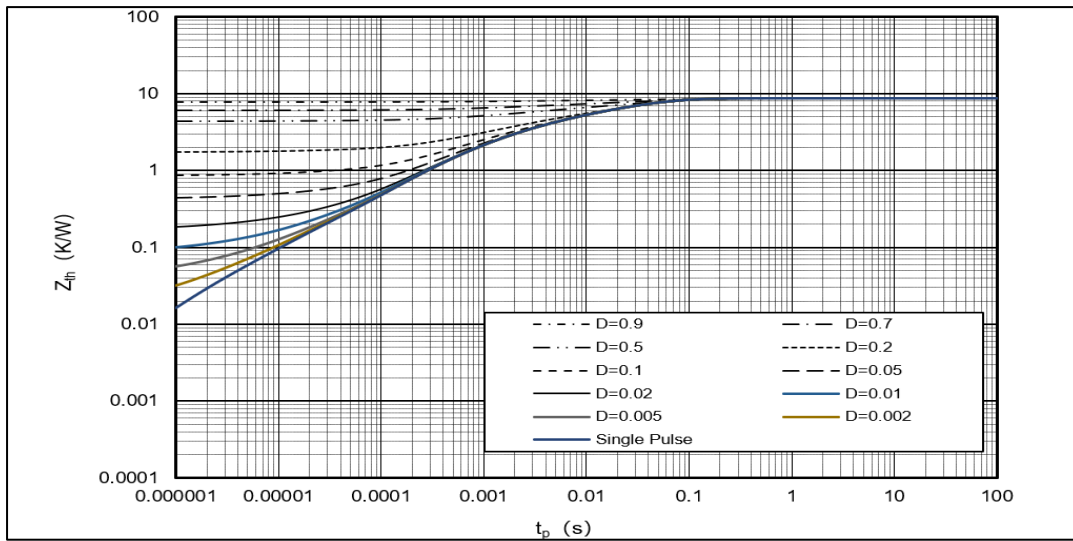
On-Resistance vs. Drain Current



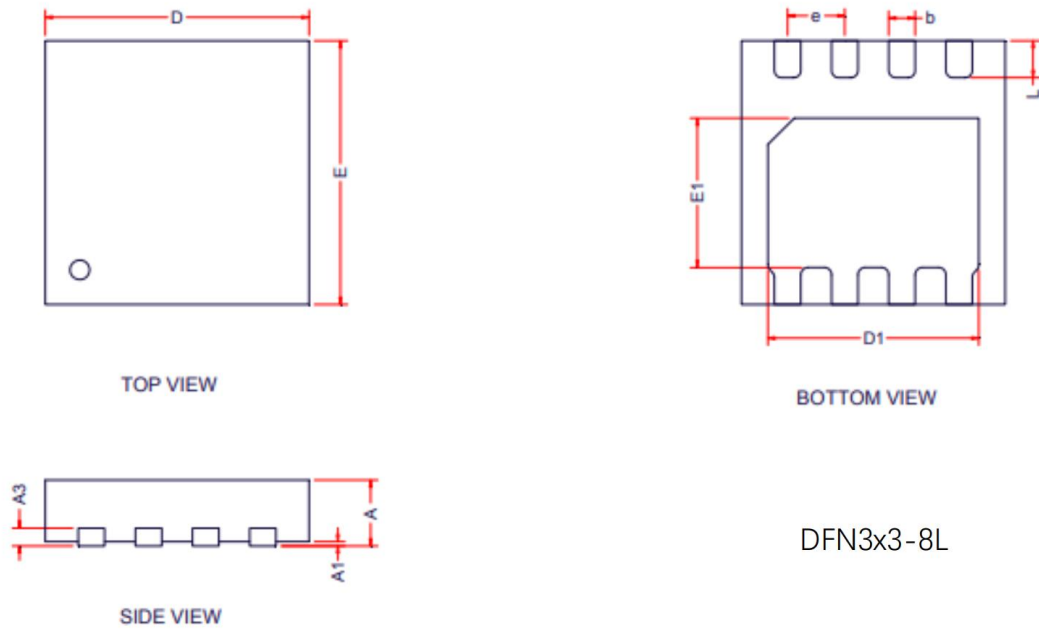
Safe Operating Area vs. Junction-to-Ambient



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



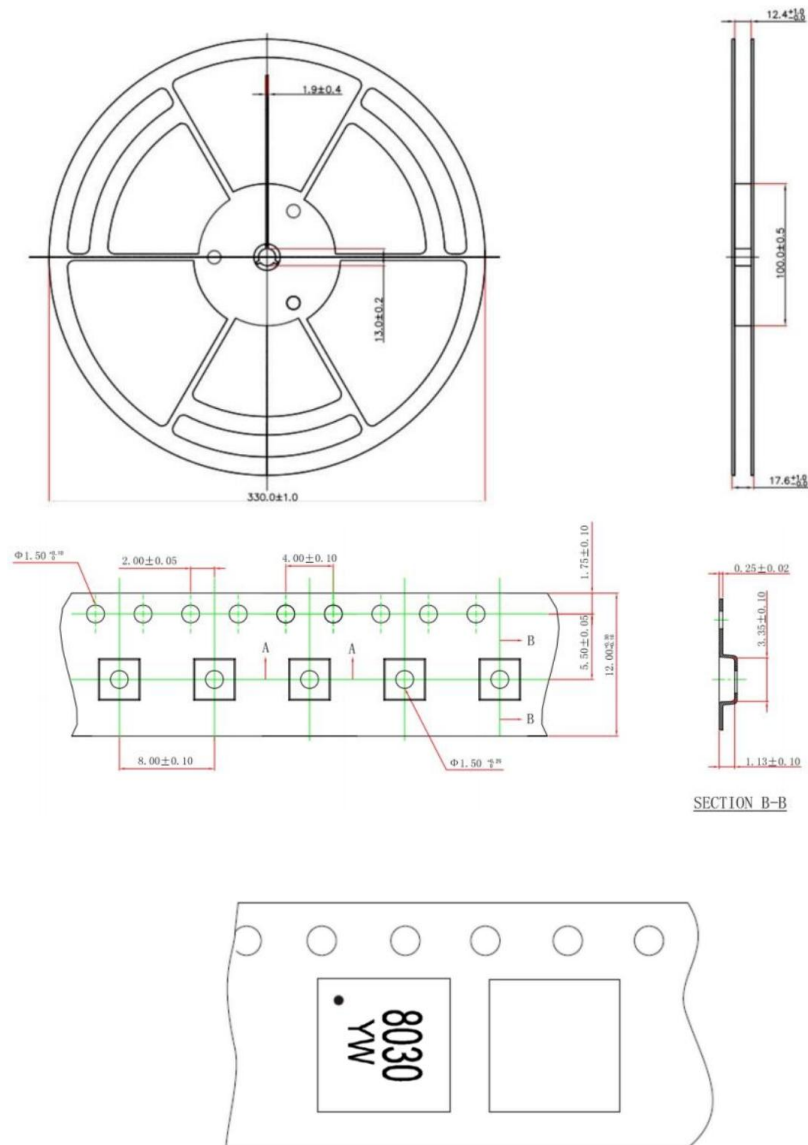
➤ Package Information



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.70	0.75	0.80
A1	0.00	0.02	0.05
A2	0.20Ref		
D	2.90	3.00	3.10
E	2.90	3.00	3.10
D1	2.35	2.40	2.45
E1	1.65	1.70	1.75
b	0.25	0.30	0.35
e	0.65BSC		
L	0.37	0.42	0.47



➤ Tape and Reel





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