



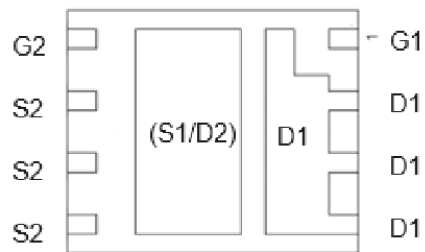
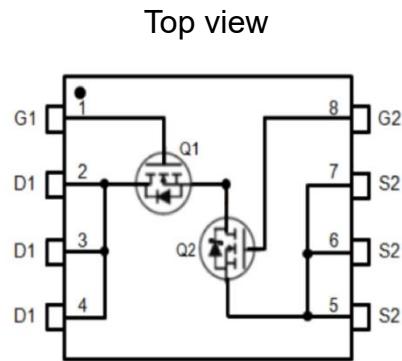
## SSC8L330GQ6

### Dual Asymmetric N-Channel Enhancement Mode MOSFET

➤ **Features**

	VDS	VGS	RDS(on) Typ.	ID
Q1	30V	±20V	4.7mR@10V	50A
			6mR@4V5	
Q2	30V	±20V	2.7mR@10V	80A
			3mR@4V5	

➤ **Pin configuration**



Bottom View

➤ **Description**

This device is N-Channel enhancement MOSFET. Uses SGT technology and design to provide excellent RDS(on) with low gate charge. The device is suitable for use in DC/DC conversion, power switch and charging circuit.

➤ **Applications**

- DCDC converters
- Power supplies
- Motor Drive Control
- Synchronous rectification



(XX: year/YY: week)

Marking

➤ **Ordering Information**

Device	Package	shipping
SSC8L330GQ6	DFN5x6	5000/Reel

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

Symbol	Parameter	Ratings		Unit	
		Q1	Q2		
$V_{DSS}$	Drain-to-Source Voltage	30	30	V	
$V_{GSS}$	Gate-to-Source Voltage	$\pm 20$	$\pm 20$	V	
$I_D$	Continuous Drain Current <sup>d</sup>	$T_C=25^{\circ}\text{C}$	50	80	A
		$T_C=100^{\circ}\text{C}$	24	38	
$I_{DSM}$	Continuous Drain Current <sup>a</sup>	$T_A=25^{\circ}\text{C}$	20	27	A
		$T_A=70^{\circ}\text{C}$	14	7	
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	200	320	A	
$P_D$	Power Dissipation <sup>c</sup>	$T_C=25^{\circ}\text{C}$	17.6	27.2	W
		$T_C=100^{\circ}\text{C}$	7.1	10.9	
$P_{DSM}$	Power Dissipation <sup>a</sup>	$T_A=25^{\circ}\text{C}$	3.1	3.1	W
		$T_A=70^{\circ}\text{C}$	2	2	
$I_{AS}$	Avalanche Current <sup>b</sup> L=0.5mH Single Pulse	20	31	A	
$E_{AS}$	Avalanche Energy <sup>b</sup> L=0.5mH Single Pulse	100	240	mJ	
$T_J$	Operation junction temperature	-55~150	- 55~150	$^{\circ}\text{C}$	
$T_{STG}$	Storage temperature range	-55~150	- 55~150		

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

Symbol	Parameter	Ratings		Unit
		Q1	Q2	
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance <sup>a</sup>	40	40	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	7.1	4.6	

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 is 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.



➤ **Q1 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	2.2	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=20A$		4.7	6	mR
		$V_{GS}=4.5V, I_D=10A$		6	9	
$I_{DSS}$	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	$V_{DS}=5V, I_D=20A$		40		S
$V_{SD}$	Forward Voltage	$V_{GS}=0V, I_S=10A$		0.8	1.3	V
$R_g$	Gate Resistance	$V_{DS}=0V, f=1MHz$		2.6		R
$C_{iss}$	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		1060		pF
$C_{oss}$	Output Capacitance			410		
$C_{rss}$	Reverse Capacitance			50		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=10V, R_L=1R, V_{DS}=15V, R_G=3R$		7		ns
$T_r$	Rise time			17		
$T_{D(OFF)}$	Turn-off delay time			18		
$T_f$	Fall time			3		
$Q_G$	Total Gate Charge	$V_{GS}=15V, V_{DS}=20V, I_D=20A$		17.4		nC
$Q_{GS}$	Gate Source Charge			3.8		
$Q_{GD}$	Gate Drain Charge			1.3		
$T_{rr}$	Diode Recovery Time	$I_F=20A, di/dt=500A/\mu s$		11		ns
$Q_{rr}$	Diode Recovery Charge	$I_F=20A, di/dt=500A/\mu s$		19		nC

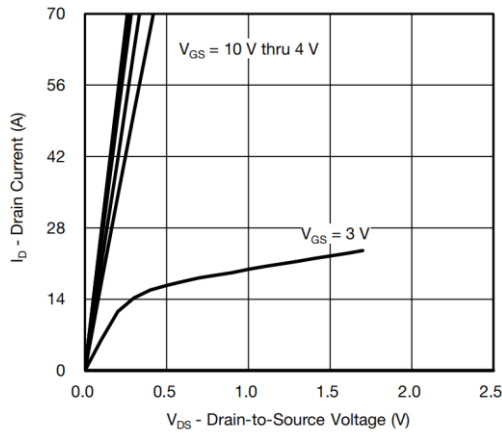


➤ **Q2 Electronics Characteristics**( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

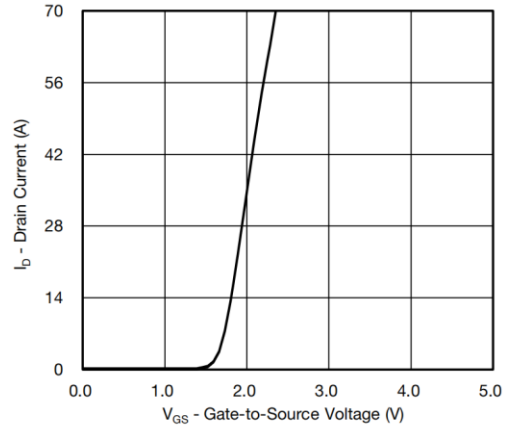
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.4	2.2	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=20A$		2.7	4	mR
		$V_{GS}=4.5V, I_D=10A$		3	5.5	
$I_{DSS}$	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	$V_{DS}=5V, I_D=20A$		40		S
$V_{SD}$	Forward Voltage	$V_{GS}=0V, I_S=10A$		0.7	1.3	V
$R_g$	Gate Resistance	$V_{DS}=0V, f=1MHz$		3.2		R
$C_{iss}$	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		2150		pF
$C_{oss}$	Output Capacitance			910		
$C_{rss}$	Reverse Capacitance			83		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=10V, R_L=1R, V_{DS}=15V, R_G=3R$		7		ns
$T_r$	Rise time			3		
$T_{D(OFF)}$	Turn-off delay time			27		
$T_f$	Fall time			4		
$Q_G$	Total Gate Charge	$V_{GS}=15V, V_{DS}=20V, I_D=20A$		35.7		nC
$Q_{GS}$	Gate Source Charge			6.1		
$Q_{GD}$	Gate Drain Charge			3.5		
$T_{rr}$	Diode Recovery Time	$I_F=20A, di/dt=500A/\mu s$		13		ns
$Q_{rr}$	Diode Recovery Charge	$I_F=20A, di/dt=500A/\mu s$		22		nC



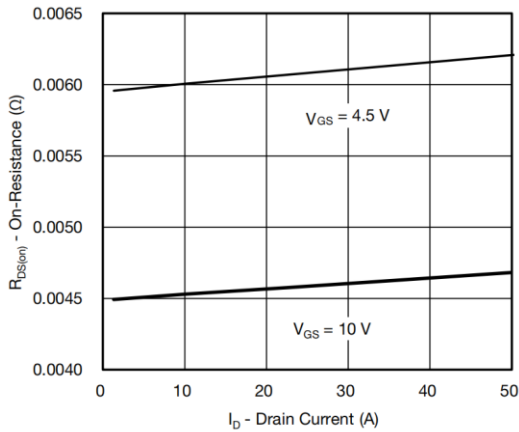
➤ Q1 Typical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



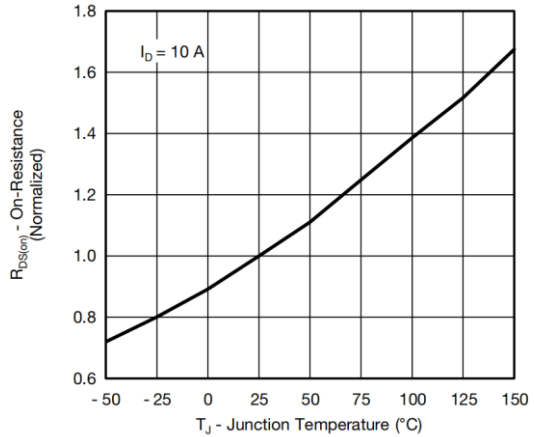
Output Characteristics



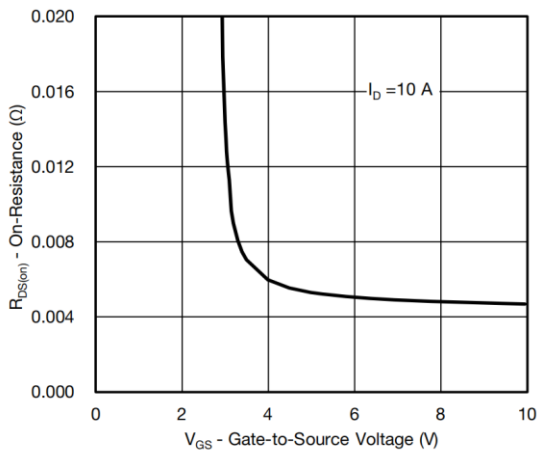
Transfer Characteristics



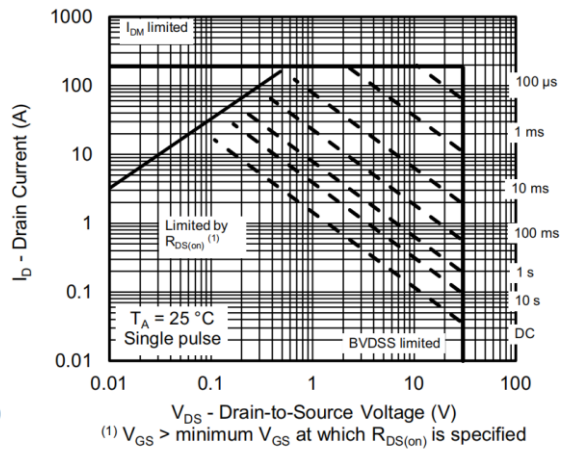
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Junction Temperature



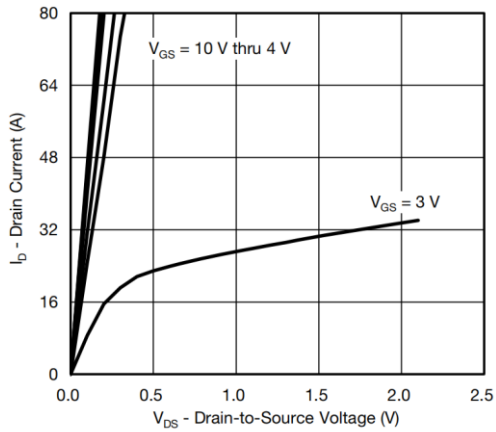
On-Resistance vs. Gate-to-Source Voltage



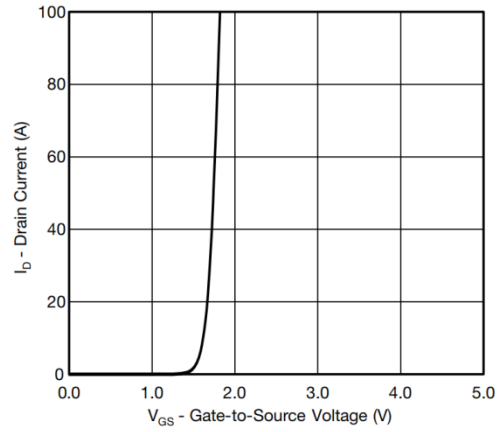
Safe Operating Area, Junction-to-Ambient



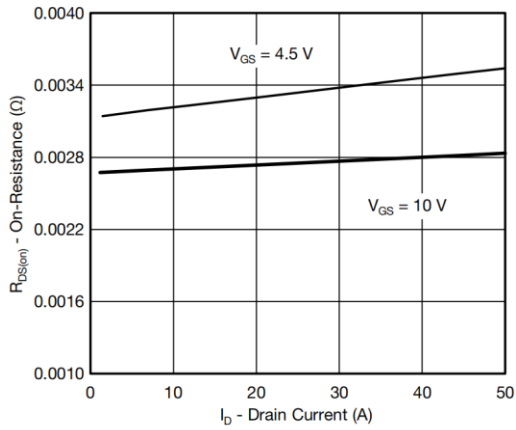
➤ Q2 Typical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



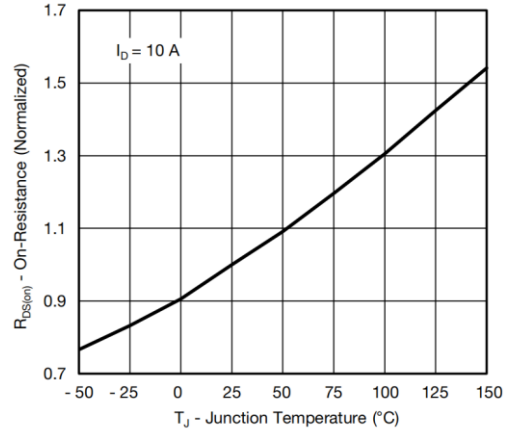
Output Characteristics



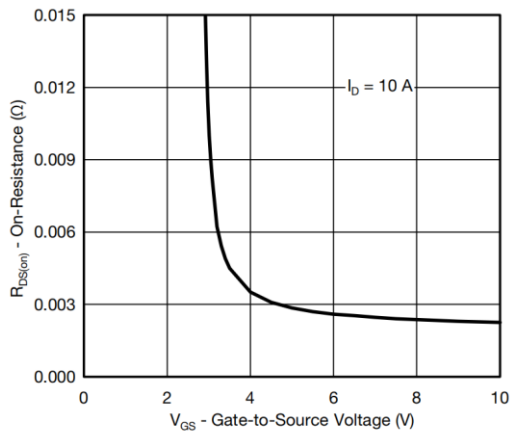
Transfer Characteristics



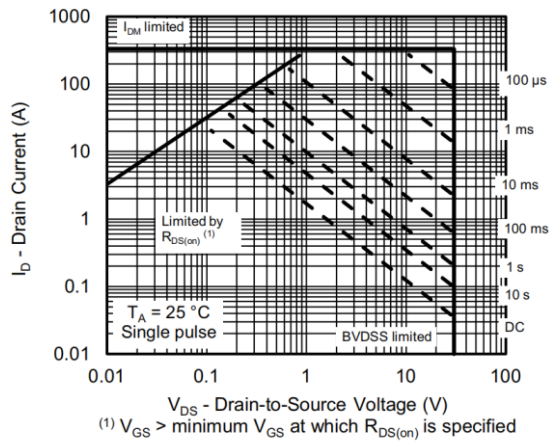
On-Resistance vs. Drain Current



On-Resistance vs. Junction Temperature



On-Resistance vs. Gate-to-Source Voltage

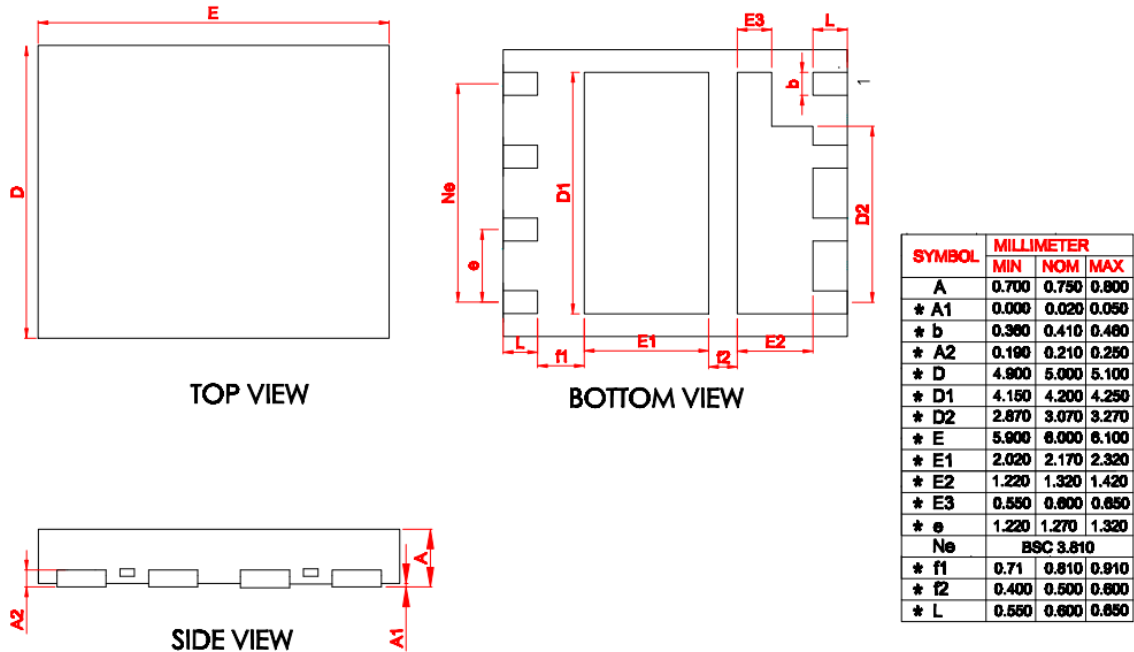


Safe Operating Area, Junction-to-Ambient



➤ Package Information

Package: DNF5X6-8L



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