SSC8036GQ4

N-Channel Enhancement Mode MOSFET

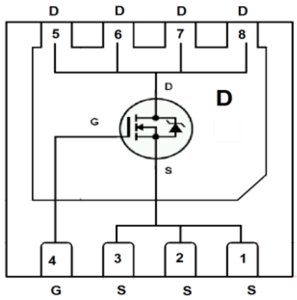
- **Features**

VDS	VGS	RDSon TYP	ID
30V	±20V	14 mR@10V	18A
		20mR@4V5	

- **Applications**
  - Load Switch
  - PC/NB
  - DCDC conversion

- **Pin configuration**

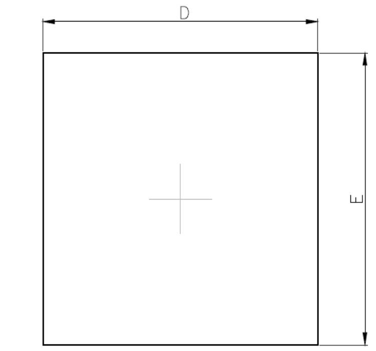
Bottom View



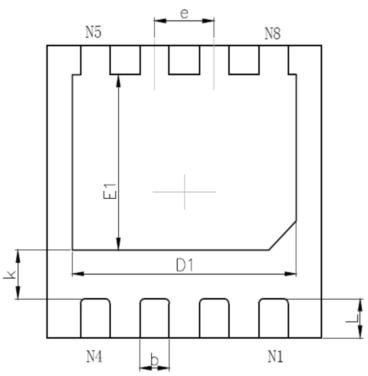
- **General Description**

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

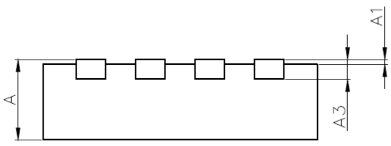
- **Package Information**



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Package: DFN3X3

Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.700/0.800	0.800/0.900
A1	0.000	0.050
A3	0.203REF.	
D	2.924	3.076
E	2.924	3.076
D1	2.350	2.550
E1	1.700	1.900
k	0.450	0.550
b	0.270	0.370
e	0.650TYP.	
L	0.324	0.476

- **Absolute Maximum Ratings** @ T_A = 25°C unless otherwise specified

Parameter	Symbol	Maximum		Unit
		10S	Steady	
Drain-Source Voltage	V_{DSS}	30		V
Gate-Source Voltage	V_{GSS}	±20		V
Continuous Drain Current [1] V_{GS}@10V T_C = 25°C	I_D	18		A
Continuous Drain Current [1] V_{GS}@10V T_C = 100°C		13		A
Continuous Drain Current [2] V_{GS}@10V T_A = 25°C	I_{DSM}	10	8.6	A
Continuous Drain Current [2] V_{GS}@10V T_A = 70°C		7.5	5.8	A
Plused Drain Current [3]	I_{DM}	102		A
Repetitive avalanche energy L=0.1mH [3]	E_{AS}	86		mJ
Power Dissipation [1] T_C = 25°C	P_D	24		W
Power Dissipation [1] T_C = 100°C		9.5		W
Power Dissipation [2] T_A = 25°C	P_{DSM}	3		W
Power Dissipation [2] T_A = 70°C		2		W
Storage and Junction Temperature Range	T_J, T_{STG}	-55 to +150		°C

- **Thermal Characteristics**

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient[2]	t⩽10S	$R_{\theta JA}$	--	42	°C/W
Maximum Junction-to-Ambient [2 4]	Steady-State		--	62.5	°C/W
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	--	5.2	°C/W

- **Electrical Characteristics** @ T_A = 25°C unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 250 μA	30	--	--	V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D =250 μA	1	--	3	V
Gate–Body Leakage Current	I_{GSS}	V_{GS} = ± 20 V, V_{DS} = 0 V	--	--	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 24 V, V_{GS} = 0 V	--	--	1	uA
Drain–Source On–State Resistance	$R_{DS(ON)}$	V_{GS} = 10 V, I_D = 15 A	--	14	21	mR
		V_{GS} = 4.5 V, I_D = 12 A	--	20	36	
Forward Transconductance	G_{FS}	V_{DS} = 15 V, I_D = 12 A	8	16	--	S
Diode Forward Voltage	V_{SD}	V_{GS} = 0 V, I_S = 1A	--	0.8	1.5	V
Input Capacitance	C_{ISS}	V_{DS} = 15 V, V_{GS} = 0 V, f = 1.0 MHz	--	550	--	pF
Output Capacitance	C_{OSS}		--	98	--	
Reverse Transfer Capacitance	C_{RSS}		--	75	--	
Turn–On Delay Time	$T_{D(ON)}$	V_{DS} = 15 V, R_L = 2.3R, V_{GS} = 10V, R_{GEN}=3R	--	--	18	ns
Turn–Off Delay Tim	$T_{D(OFF)}$		--	--	70	

Note :

1. The power dissipation P_D is based on $T_{J(MAX)}$=150° 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.
2. The value of $R_{\theta JA}$ is measured with the device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with T_A =25° C. The Power dissipation P_{DSM} is based on $R_{\theta JA}$ t ≤ 10s value and the maximum allowed junction temperature of 150° C. The value in any given application depends on the user's specific board design.
3. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J =25°C.
4. The $R_{\theta JA}$ is the sum of the thermal impedence from junction to case $R_{\theta JC}$ and case to ambient.

Typical Performance Characteristics

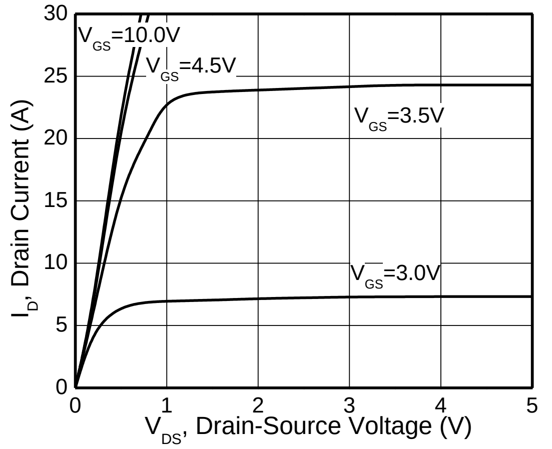


Fig1. Output Characteristics

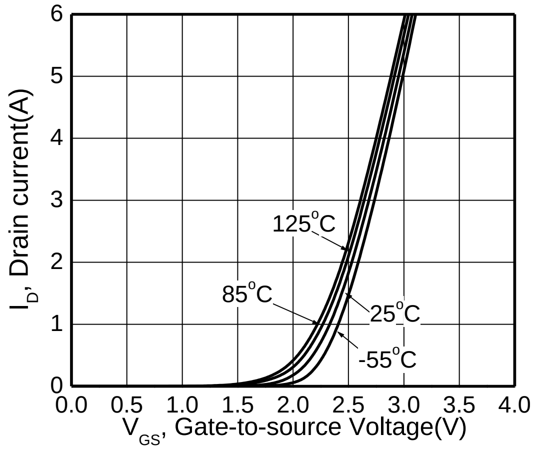


Fig2. Transfer Characteristics

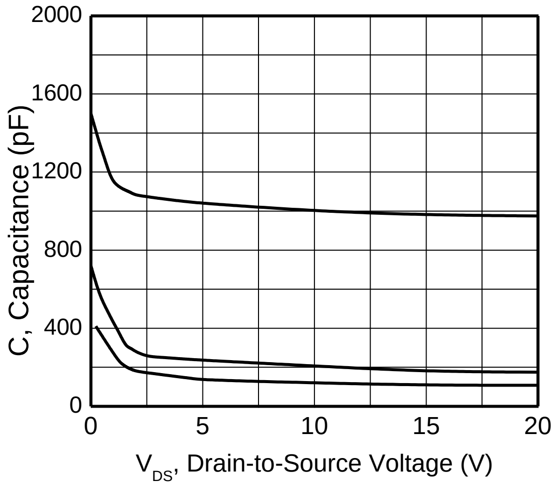


Fig3. Capacitance

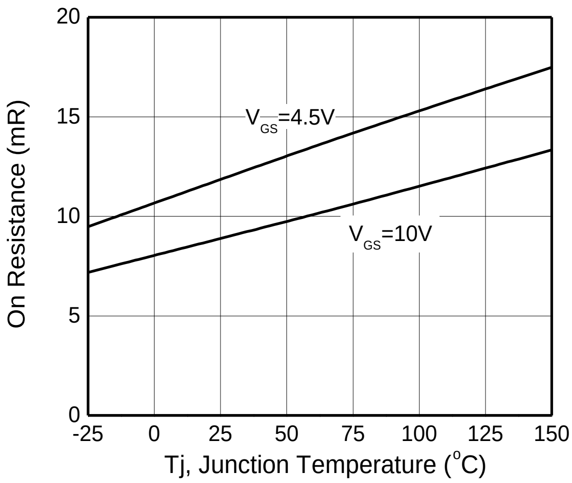


Fig4. On Resistance vs. Temperature

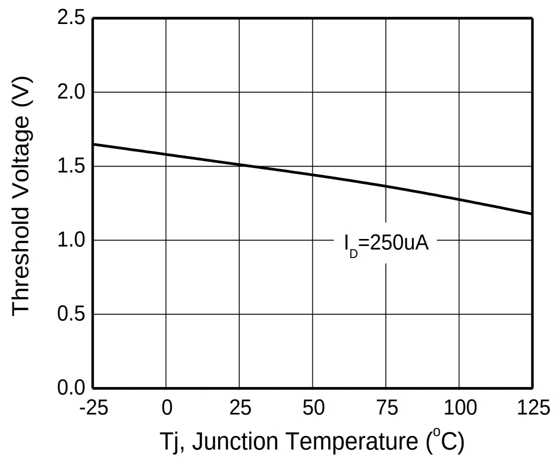


Fig5. Gate Threshold vs. Temperature

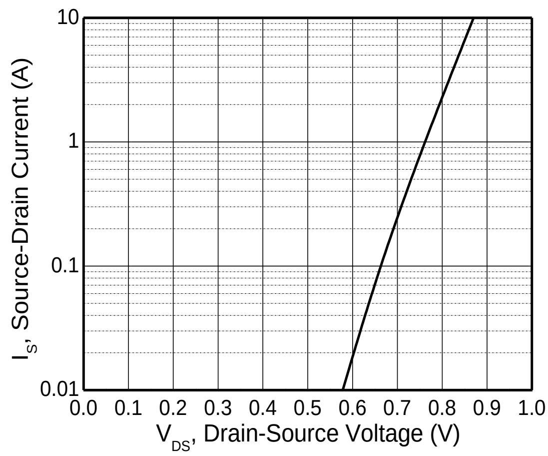


Fig6. Diode Forward Characteristics

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