

N-Channel Enhancement Mode MOSFET

- **Features**

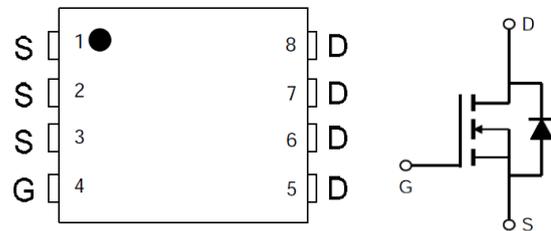
VDS	VGS	RDSon TYP	ID
20V	±12V	5.5mR@4V5 7mR@2V5	40A

- **Applications**

- Load Switch
- Portable Devices
- DCDC Conversion

- **Pin configuration**

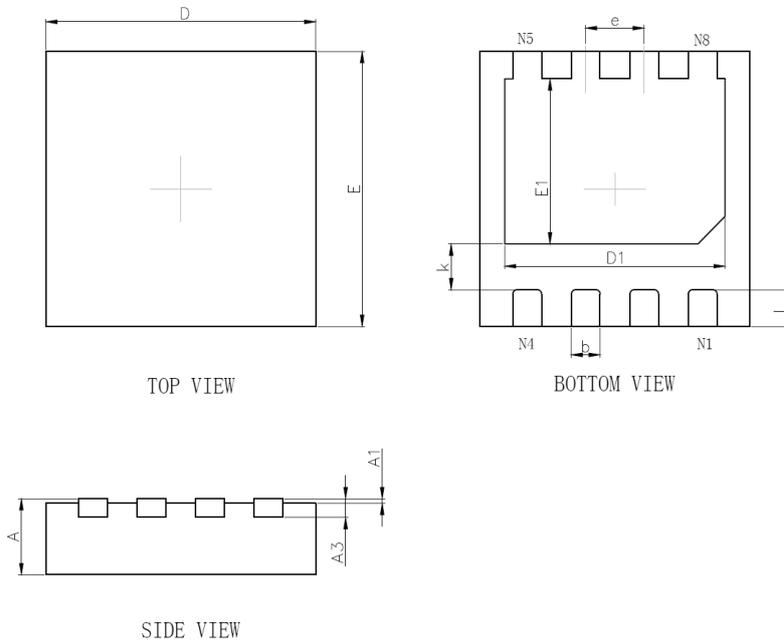
Top View



- **General Description**

The SSC8228GQ4 combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is ideal for load switch and battery protection applications.

- **Package Information**



Symbol	Dimensions 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

Package: DFN3X3



SSC8228GQ4

● **Absolute Maximum Ratings** @ $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	20	V
Gate-Source Voltage	V_{GSS}	± 12	V
Drain Current		Continuous ^{note1}	40
		Pulsed	160
Power Dissipation ^{note2}	P_D	3	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

● **Electrical Characteristics** @ $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16\text{ V}, V_{GS} = 0\text{ V}$	--	--	1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS} = \pm 12\text{ V}, V_{DS} = 0\text{ V}$	--	--	± 100	nA
ON CHARACTERISTICS⁽²⁾						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 50\mu\text{A}$	0.5	0.7	1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5\text{ V}, I_D = 10\text{ A}$	--	5.5	7	mR
		$V_{GS} = 2.5\text{ V}, I_D = 9\text{ A}$	--	7	9	
Forward Transconductance	G_{FS}	$V_{DS} = 5\text{ V}, I_D = 3.6\text{ A}$	--	105	--	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS} = 10\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$	--	3860	--	pF
Output Capacitance	C_{OSS}		--	740	--	
Reverse Transfer Capacitance	C_{RSS}		--	580	--	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$T_{D(ON)}$	$V_{DD} = 5\text{ V}, I_D = 3.6\text{ A},$ $V_{GS} = 4.5\text{ V}, R_{GEN} = 6\Omega$	--	7	--	nS
Turn-On Rise Time	T_R		--	8	--	
Turn-Off Delay Time	$T_{D(OFF)}$		--	70	--	
Turn-Off Fall Time	T_F		--	18	--	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage ⁽²⁾	V_{SD}	$V_{GS} = 0\text{ V}, I_S = 1.1\text{ A}$	--	0.7	1.3	V

Notes :

1. The maximum current rating is package limited.
2. Surface Mounted on FR4 Board, $t < 10\text{ sec}$,

2. Typical Performance Characteristics

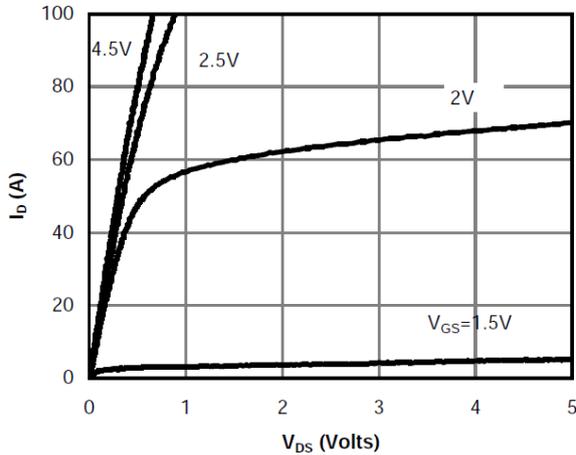


Fig 1: On-Region Characteristics (Note E)

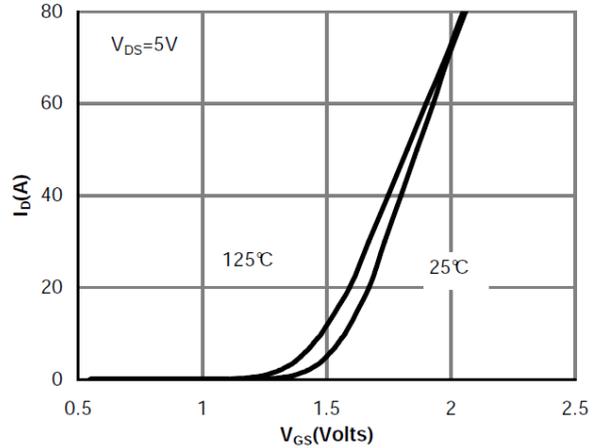


Figure 2: Transfer Characteristics (Note E)

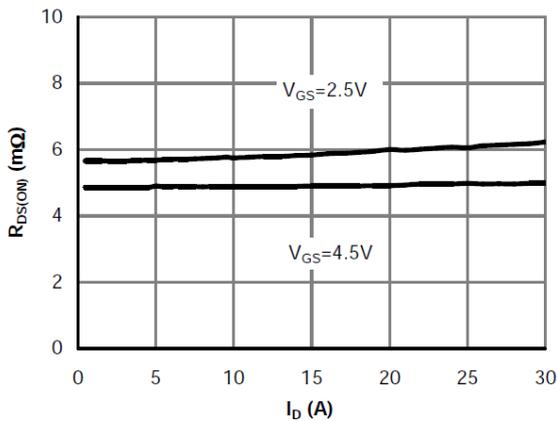


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

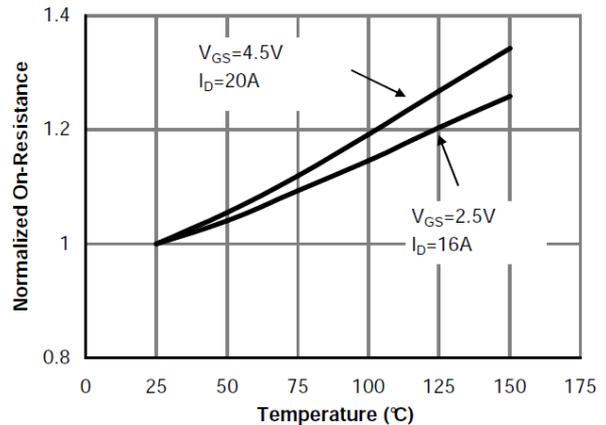


Figure 4: On-Resistance vs. Junction Temperature (Note E)

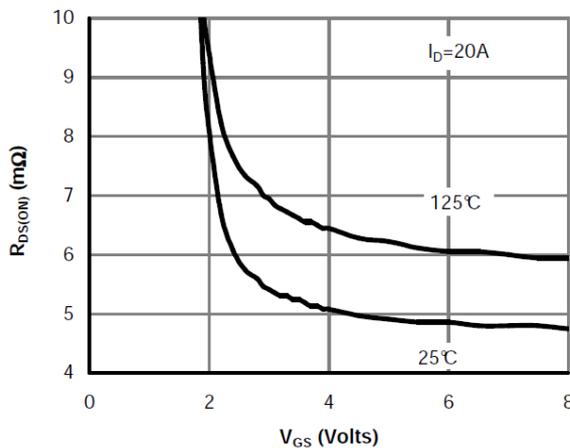


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

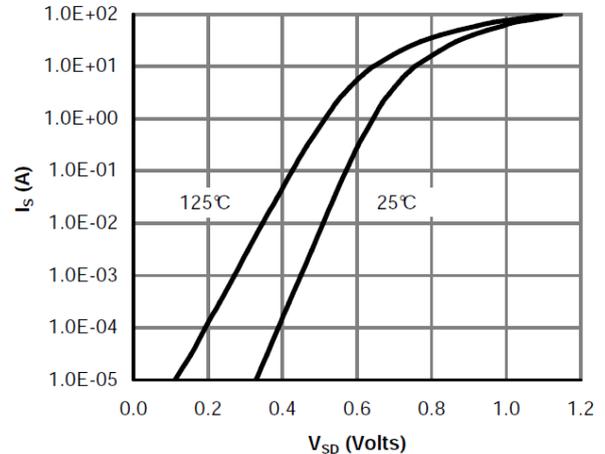


Figure 6: Body-Diode Characteristics (Note E)

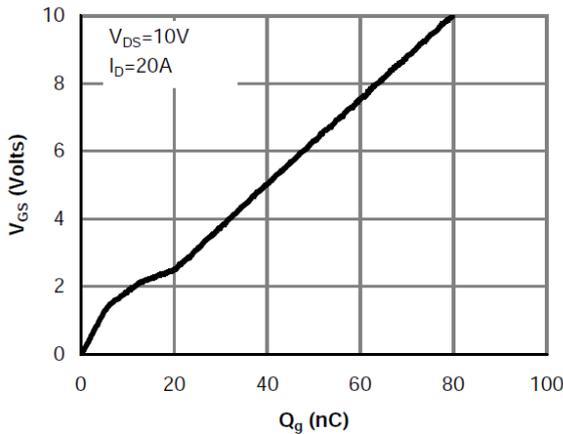


Figure 7: Gate-Charge Characteristics

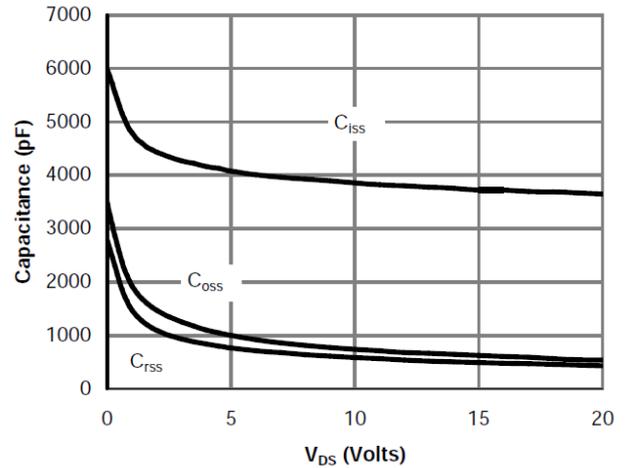


Figure 8: Capacitance Characteristics

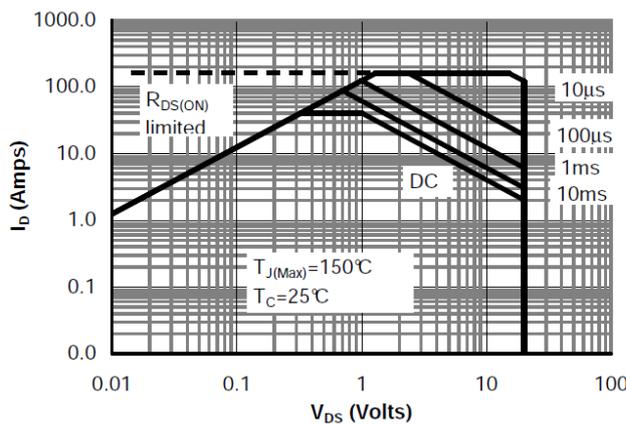


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

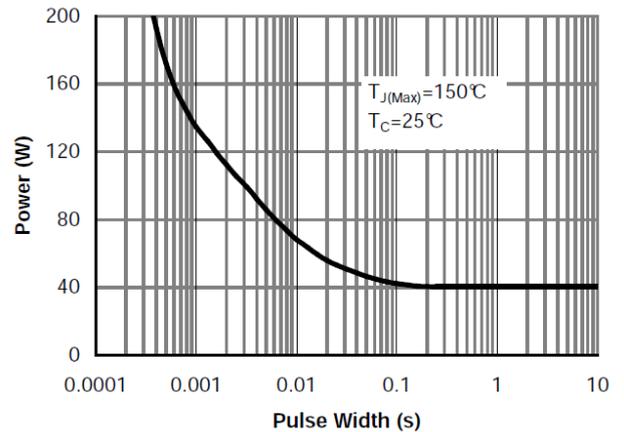


Figure 10: Single Pulse Power Rating Junction-to-Case (Note F)

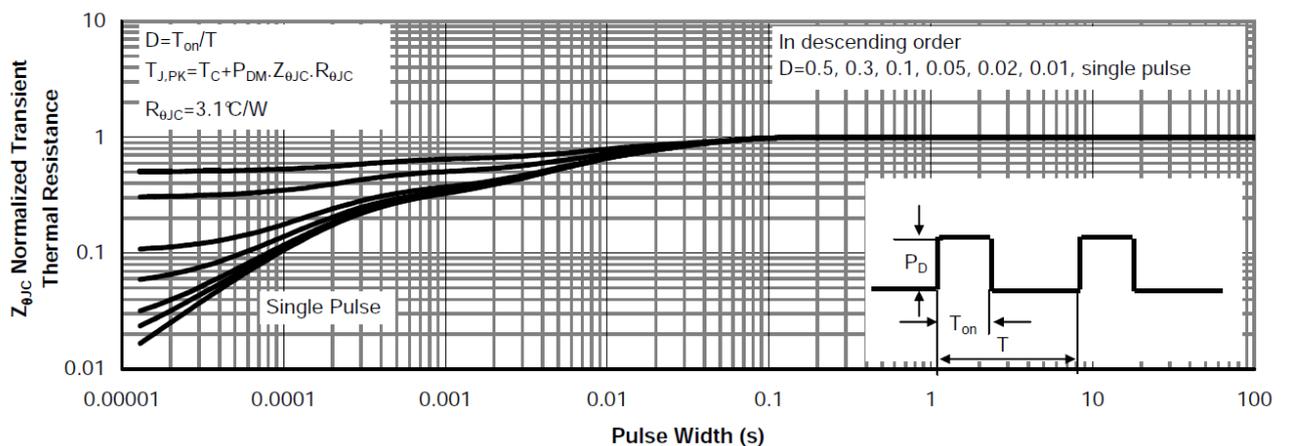


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)



SSC8228GQ4

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