

N-Channel Enhancement Mode MOSFET

Features

VDS	VGS	RDSon TYP	ID
30V	±20V	1.7mR@10V	100A
		2.5mR@4V5	

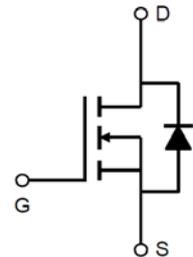
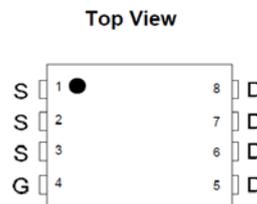
Applications

- Load Switch
- Portable Devices
- DCDC conversion

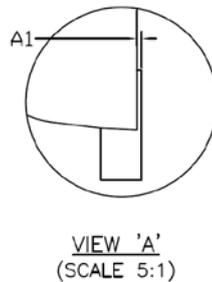
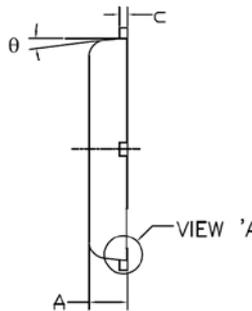
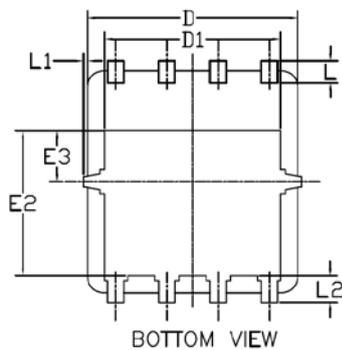
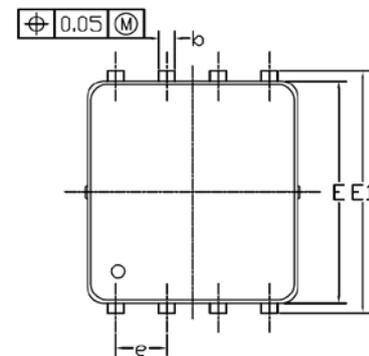
General Description

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.

Pin configuration



Package Information



Package:DFN5x6

SYMBOLS	DIMENSIONS IN MILLIMETERS		
	MIN	NOM	MAX
A	0.85	0.95	1.00
A1	0.00	---	0.05
b	0.30	0.40	0.50
c	0.15	0.20	0.25
D	5.10	5.20	5.30
D1	4.25	4.35	4.45
E	5.45	5.55	5.65
E1	5.95	6.05	6.15
E2	3.525	3.625	3.725
E3	1.175	1.275	1.375
e	1.27 BSC		
L	0.45	0.55	0.65
L1	0	---	0.15
L2	0.68 REF		
θ	0°	---	10°



SSC8132GN6

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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current ^(note1)	Continuous	I_D	100	A
	Pulse	I_{DM}	360	
Drain Current $T_A = 25^\circ\text{C}$		I_{DSM}	28	A
Power Dissipation ^(note2)	$T_A = 25^\circ\text{C}$	P_D	83	W
Power Dissipation ^(note3)	$T_A = 25^\circ\text{C}$	P_{DSM}	2.3	W
	$T_A = 70^\circ\text{C}$		1.5	
Operating and Storage Junction Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Note1. The maximum current rating is package limited.

Note2. 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 heatsinking is used.

Note3: The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$.

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

Parameter ^(note2)	Symbol	Test Conditions	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$	--	--	1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	--	--	± 100	nA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1	1.5	3	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{ V}, I_D = 10\text{ A}$	--	1.7	2.2	mR
		$V_{GS} = 4.5\text{ V}, I_D = 10\text{ A}$	--	2.5	4	
DYNAMIC CHARACTERISTICS						
Total Gate Charge	Q_G	$V_{DS}=15\text{V}, I_D=8.5\text{A},$ $V_{GS}=10\text{V}$		54		nC
Gate-Source Charge	Q_{GS}			29		
Gate-Drain Charge	Q_{GD}			122		
Input Capacitance	C_{ISS}	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V},$ $F = 1\text{ MHz}$	--	6420	--	pF
Output Capacitance	C_{OSS}		--	1045	--	
Reverse Transfer Capacitance	C_{RSS}		--	720	--	
Turn-On Delay Time	$T_{D(ON)}$	$V_{GEN}=10\text{V}, V_{DD}=15\text{V},$ $R_L=15\Omega,$ $R_{GEN}=3\Omega, I_D=1\text{A}$	--	--	17	nS
Turn-On Rise Time	T_R		--	--	18	
Turn-Off Delay Time	$T_{D(OFF)}$		--	--	67	
Turn-Off Fall Time	T_F		--	--	25	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Max. Diode Forward Current	I_S		--	--	4.3	A
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{ V}, I_S = 1\text{ A}$	--	--	1.0	V

Typical Performance Characteristics

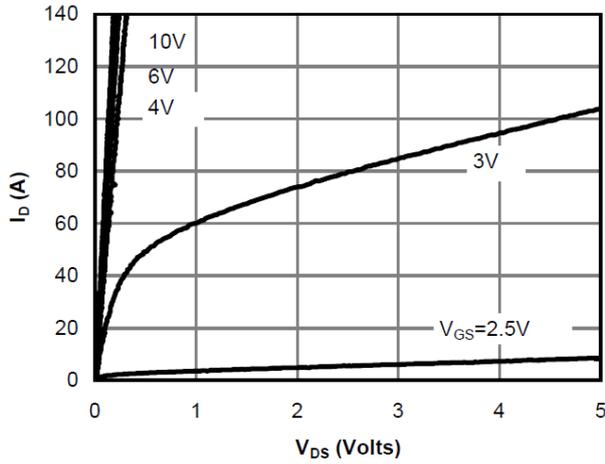


Fig 1: On-Region Characteristics (Note E)

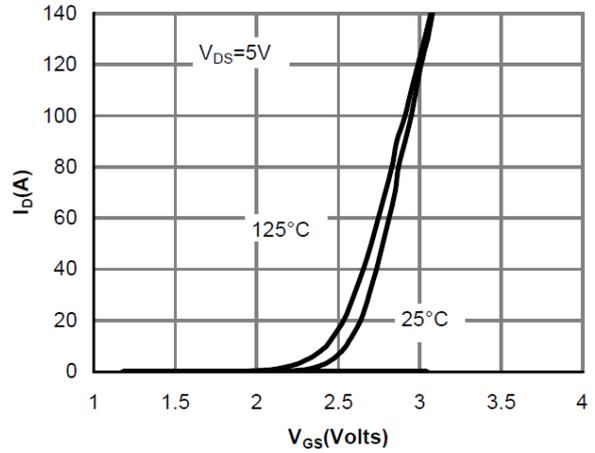


Figure 2: Transfer Characteristics (Note E)

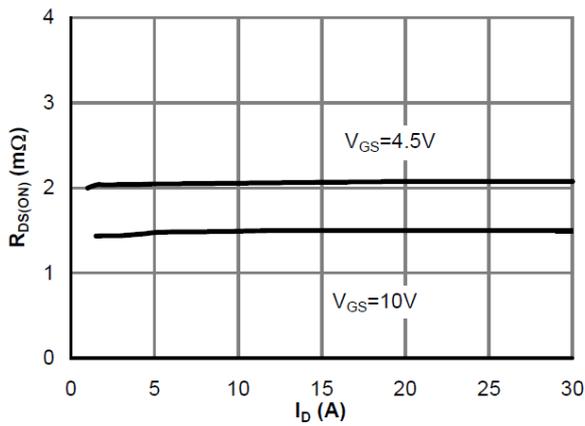


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

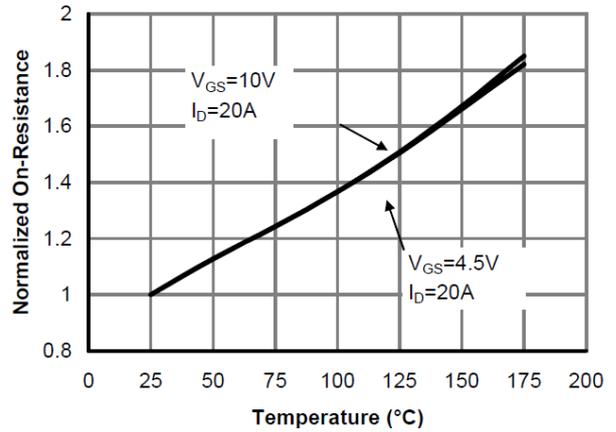


Figure 4: On-Resistance vs. Junction Temperature (Note E)

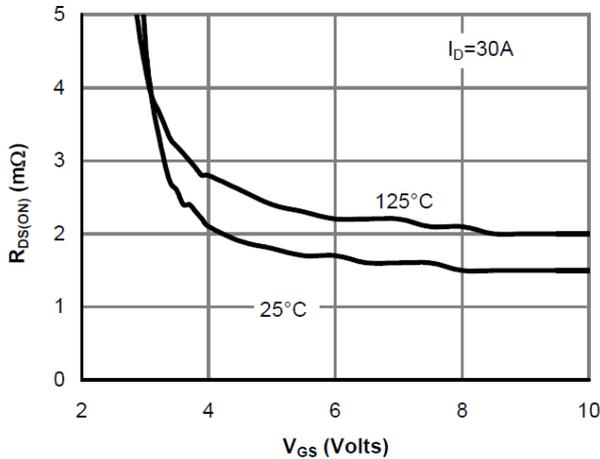


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

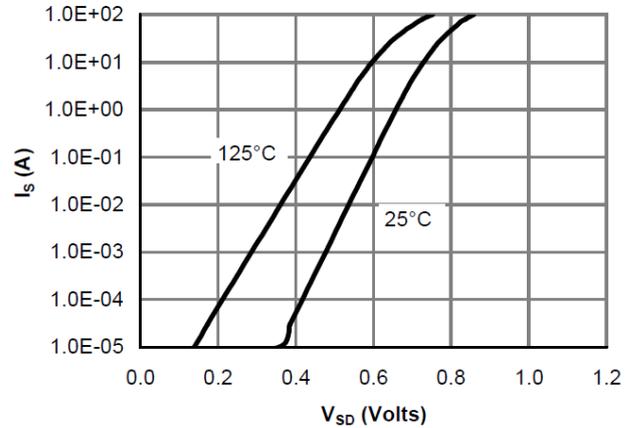


Figure 6: Body-Diode Characteristics (Note E)

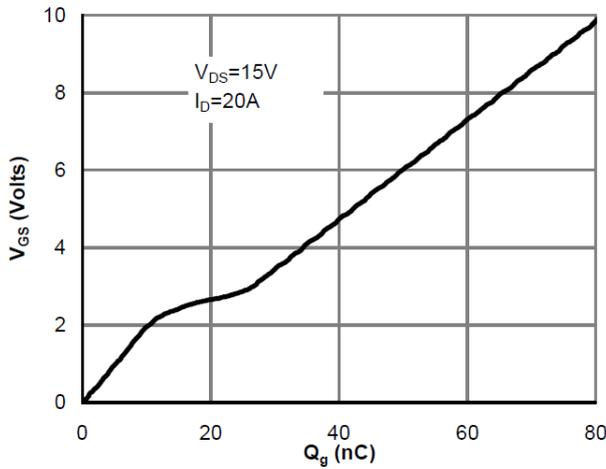


Figure 7: Gate-Charge Characteristics

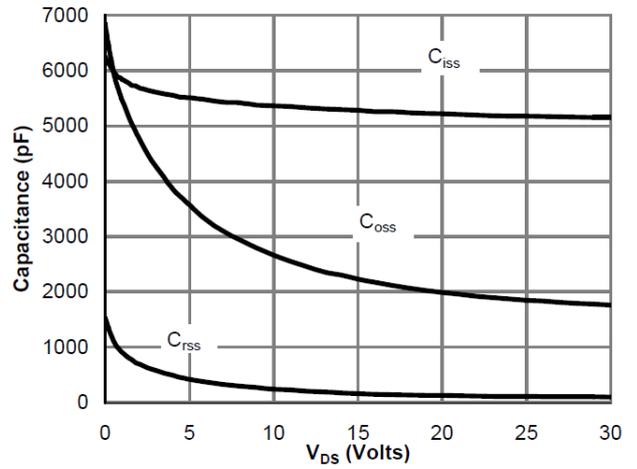


Figure 8: Capacitance Characteristics

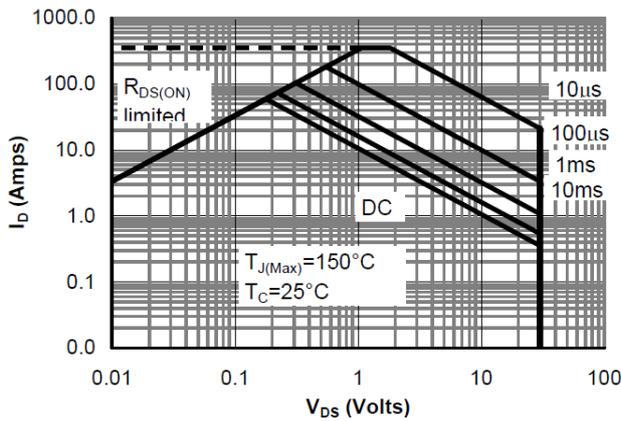


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

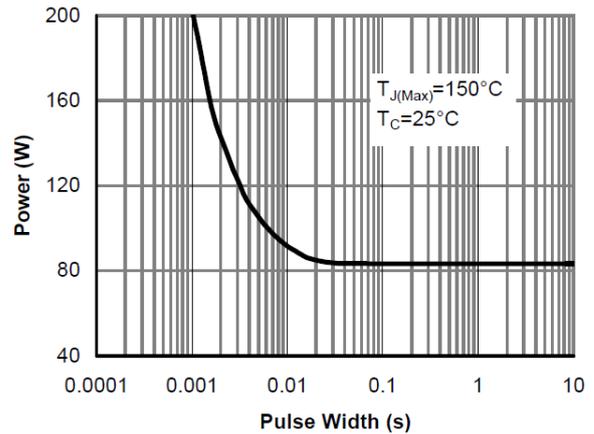


Figure 10: Single Pulse Power Rating Junction-to-Case (Note F)

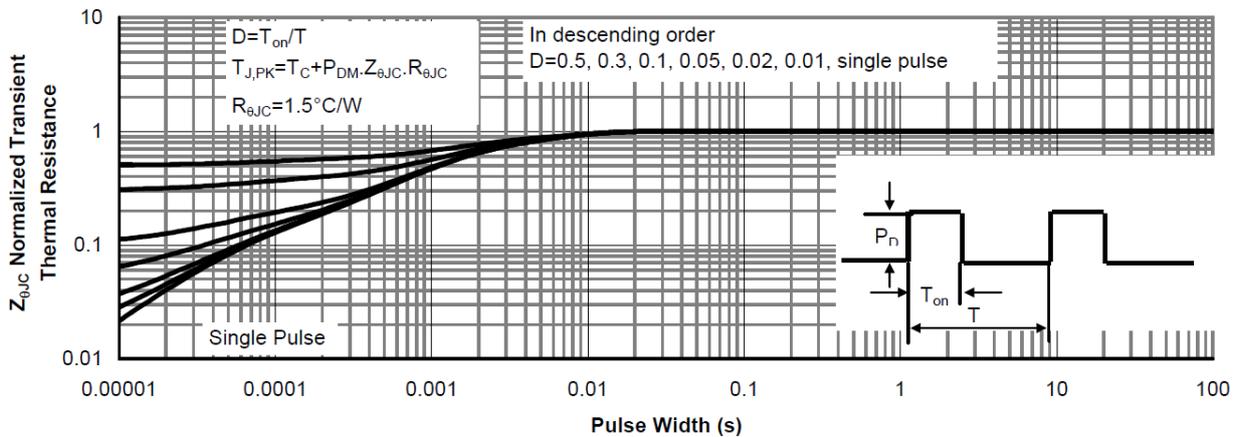


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)



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