



SSC8017GN2

P-Channel Enhancement Mode MOSFET

➤ **Features**

VDS	VGS	RDSON Typ.	ID
-12V	±8V	11mR@-4V5	-10A
		15mR@-2V5	
		22mR@-1V8	

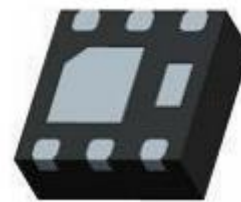
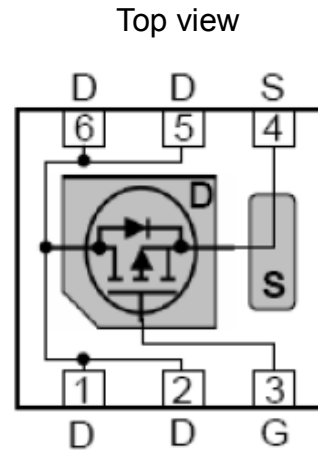
➤ **Description**

This device is produced with high cell density DMOS trench technology, uses advanced trench technology and design to provide excellent RDSON with low gate charge. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package.

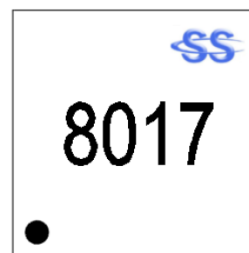
➤ **Applications**

- Load Switch
- Portable Devices
- DCDC conversion
- Charging
- Driver for Relay

➤ **Pin configuration**



Bottom View



Marking

➤ **Ordering Information**

Device	Package	Shipping
SSC8017GN2	DFN2x2	3000/Reel



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

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	-12	V
V_{GSS}	Gate-to-Source Voltage	± 8	V
I_D	Continuous Drain Current ^a	-10	A
I_{DM}	Pulsed Drain Current ^b	-40	A
P_D	Power Dissipation ^c	18	W
P_{DSM}	Power Dissipation ^a	2.4	W
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	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance		52	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		6.9	

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 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.

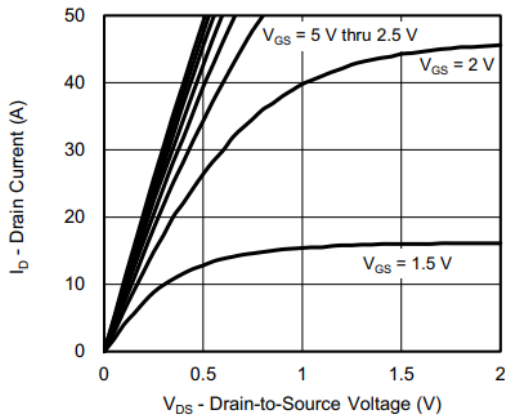


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

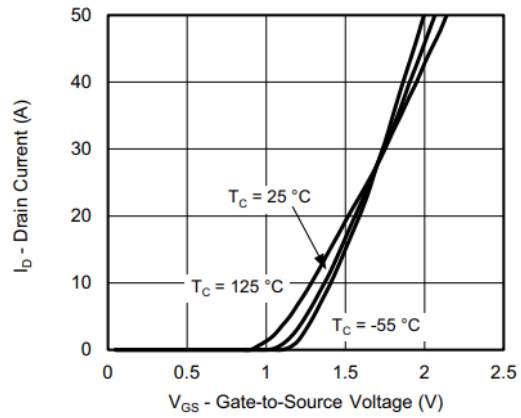
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-12			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.7	-1	V
$R_{DS(on)}$	Drain-Source On- Resistance	$V_{GS}=-4.5V, I_D=-7A$		11	16	mR
		$V_{GS}=-2.5V, I_D=-6A$		15	23	
		$V_{GS}=-1.8V, I_D=-4A$		22	75	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-9.6V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 8V, V_{DS}=0V$			± 100	nA
G_{FS}	Transconductance	$V_{DS}=-5V, I_D=-5A$		45		S
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=-2A$		-0.7	-1.2	V
C_{iss}	Input Capacitance	$V_{DS}=-7V, V_{GS}=0V,$ $f=1\text{MHz}$		2575		pF
C_{oss}	Output Capacitance			495		
C_{rss}	Reverse Transfer Capacitance			430		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=4.5V,$ $V_{DS}=-6V, R_G=6R, I_D=9A$		12		ns
T_r	Rise time			13		
$T_{D(OFF)}$	Turn-off delay time			110		
T_f	Fall time			60		



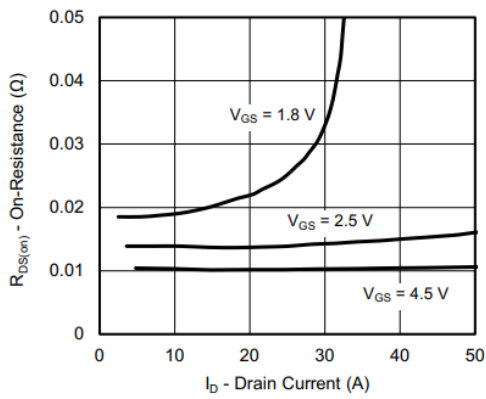
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



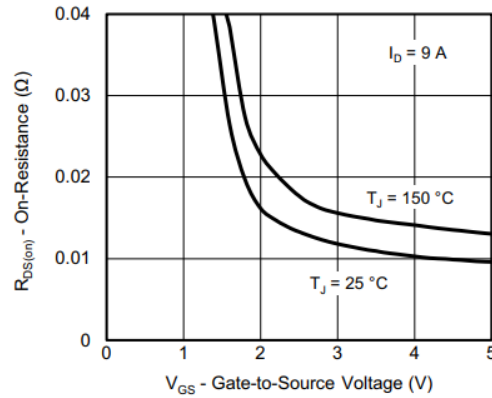
Output Characteristics



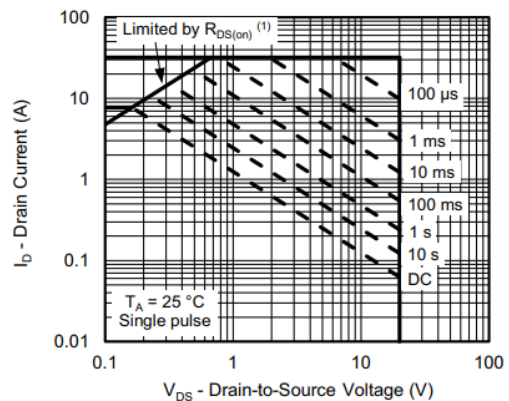
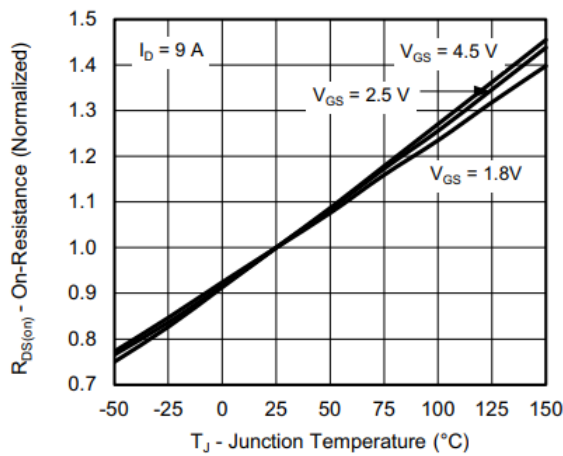
Transfer Characteristics



On-Resistance vs. Drain Current and Gate Voltage



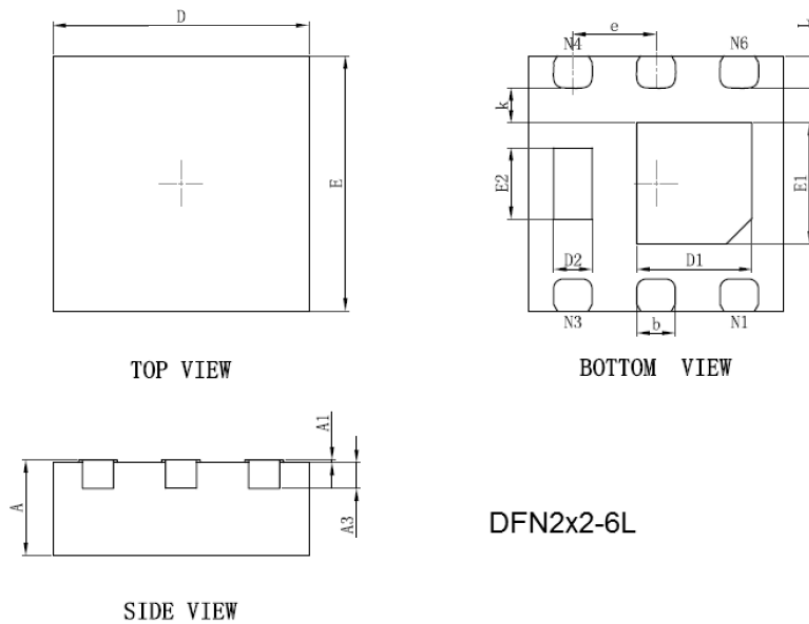
On-Resistance vs. Gate-to-Source Voltage



Safe Operating Area, Junction-to-Ambient



➤ Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.700	0.800
A1	0.000	0.050
A3	0.203REF.	
D	1.924	2.076
E	1.924	2.076
D1	0.800	1.000
E1	0.850	1.050
D2	0.200	0.400
E2	0.460	0.660
k	0.200MIN.	
b	0.250	0.350
e	0.650TYP.	
L	0.174	0.326

DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.