



SSC8013GS6

P-Channel Enhancement Mode MOSFET

➤ Features

VDS	VGS	RDSON Typ.	ID
-12V	±8V	38mR@-4V5	-3.8A
		47mR@-2V5	
		61mR@-1V8	

➤ Description

This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. 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

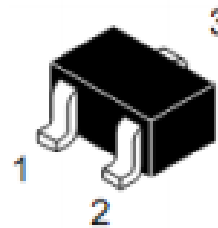
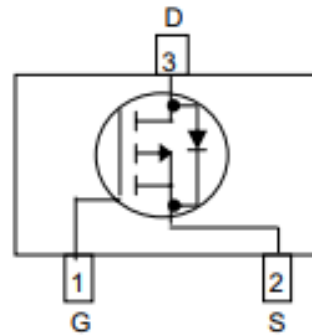
- Load Switch
- Portable Devices
- DCDC conversion

➤ Ordering Information

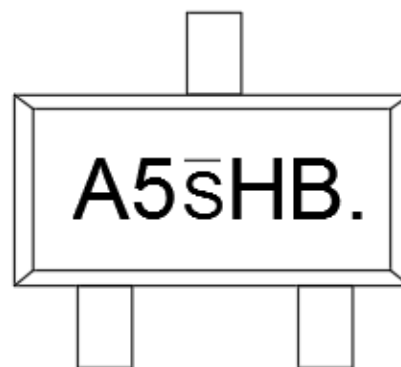
Device	Package	Shipping
SSC8013GS6	SOT23	3000/Reel

➤ Pin configuration

Top view



SOT23



Marking

➤ **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	-3.8	A
I_{DM}	Pulsed Drain Current	-20	A
P_D	Power Dissipation	0.55	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		227	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		112	

➤ **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	$V_{GS}=0\text{V}, I_D=-10\mu\text{A}$	-12			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$	-0.45	-0.62	-1.2	V
$R_{DS(on)}$	Drain-Source On- Resistance	$V_{GS}=-4.5\text{V}, I_D=-3.5\text{A}$		38	60	mR
		$V_{GS}=-2.5\text{V}, I_D=-3\text{A}$		47	90	
		$V_{GS}=-1.8\text{V}, I_D=-2\text{A}$		61	100	

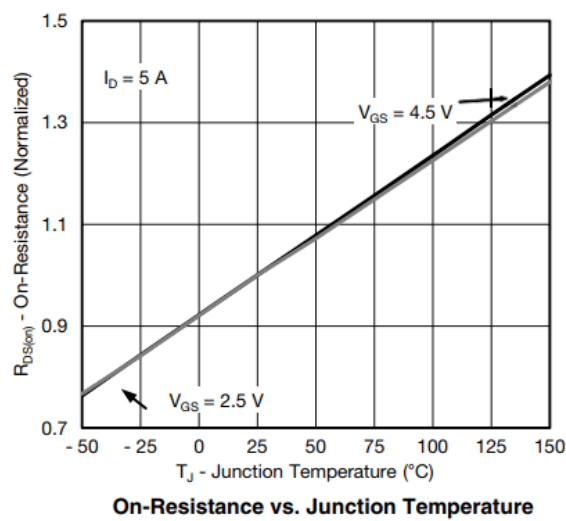
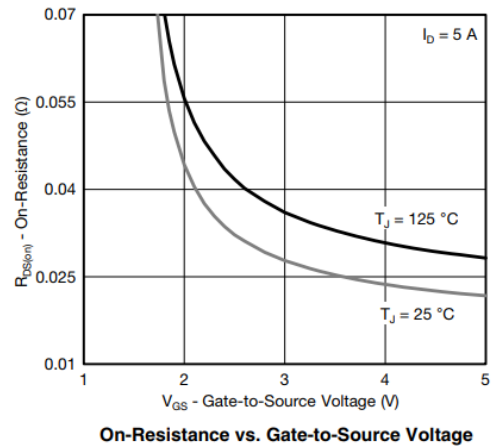
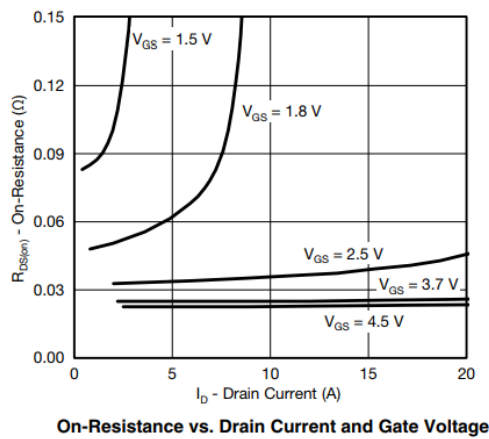
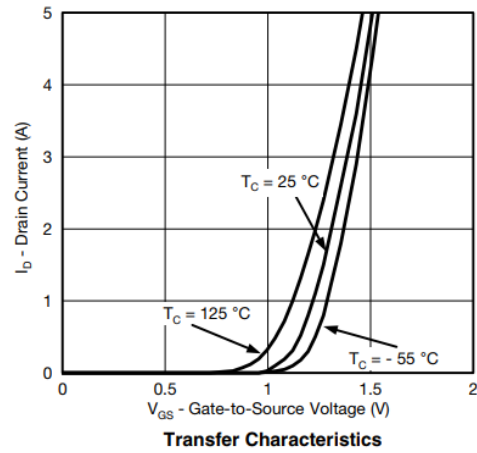
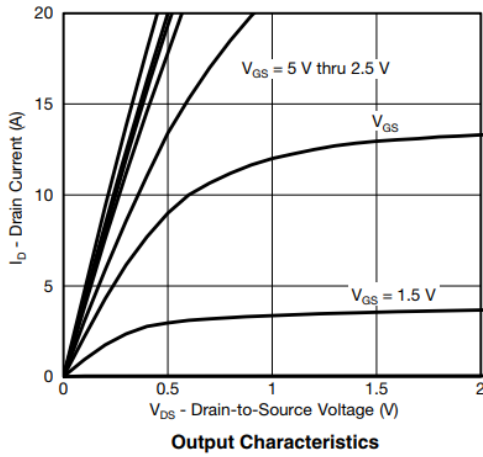


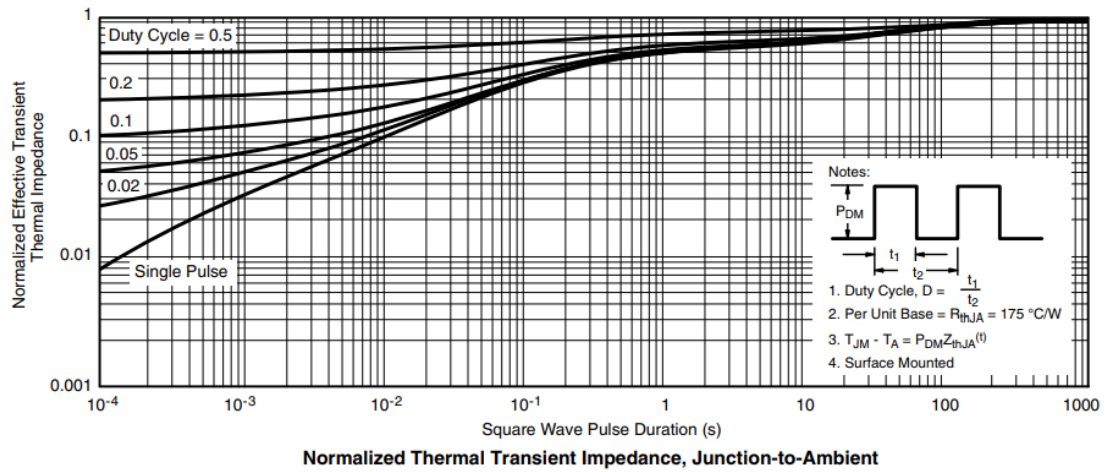
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 8V, V_{DS}=0V$			± 100	nA
G_{FS}	Forward Transconductance	$V_{DS}=-5V, I_D=-3.5A$		9.5		S
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=-1.6A$	-0.5	-0.75	-1.2	V

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
C_{iss}	Input Capacitance	$V_{DS}=-4V, V_{GS}=0V,$ $F=1MHz$		865		pF
C_{oss}	Output Capacitance			273		
C_{rss}	Reverse Transfer Capacitance			252		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=-6V,$ $V_{GEN}=-4.5V, R_L=6R,$ $R_G=6R, I_D=-1.0A$		13	25	ns
$T_{D(OFF)}$	Turn-off delay time			42	70	



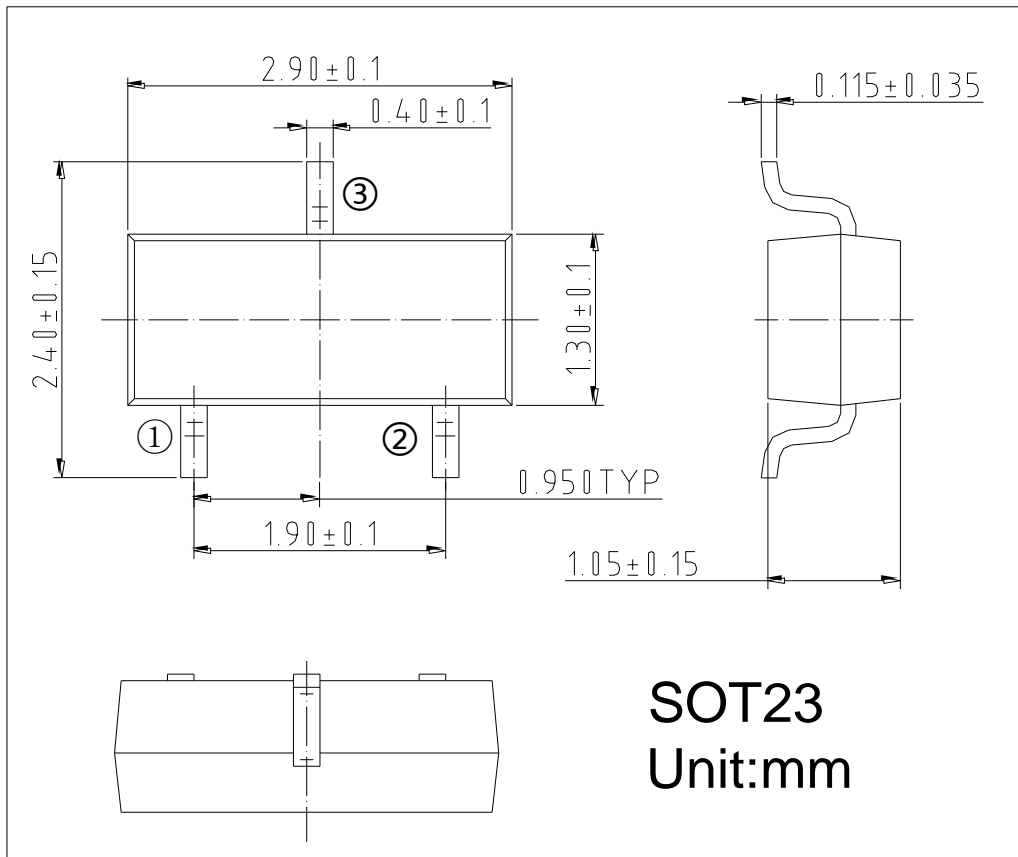
➤ Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)







➤ Package Information



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 LICIENCE 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.