SSC8415GS6

P-Channel Enhancement Mode MOSFET

➢ Features

VDS	VGS	RDSON Typ.	ID
-20V	±12V	35mR@-4V5	-4A
		44mR@-2V5	

➢ 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

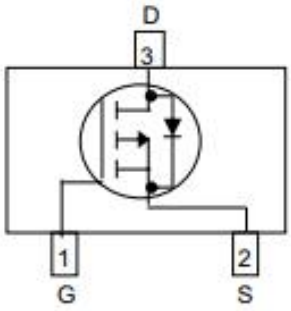
- Load Switch
- Portable Devices
- DCDC conversion

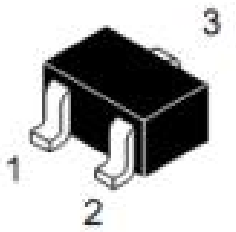
➢ Ordering Information

Device	Package	Shipping
SSC8415GS6	SOT23	3000/Reel

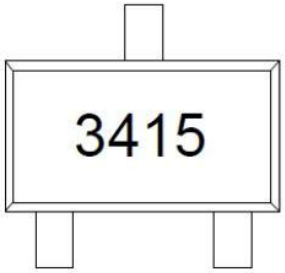
➢ Pin configuration

Top view





SOT23



Marking

➢ Absolute Maximum Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	-20	V
V_{GSS}	Gate-to-Source Voltage	±12	V
I_D	Continuous Drain Current [a]	-4	A
I_{DM}	Pulsed Drain Current [b]	-22	A
P_D	Power Dissipation [c]	0.9	W
P_{DSM}	Power Dissipation [a]	0.55	W
T_J	Operation junction temperature	-55 to 150	℃
T_{STG}	Storage temperature range	-55 to 150	℃

➢ Thermal Resistance Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]		230	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		140	

Note:

a. The value of RθJA is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper,in a still air environment with TA=25℃.The value in any given application depends on the user is specific board design. The current rating is based on the t≤ 10s thermal resistance rating.

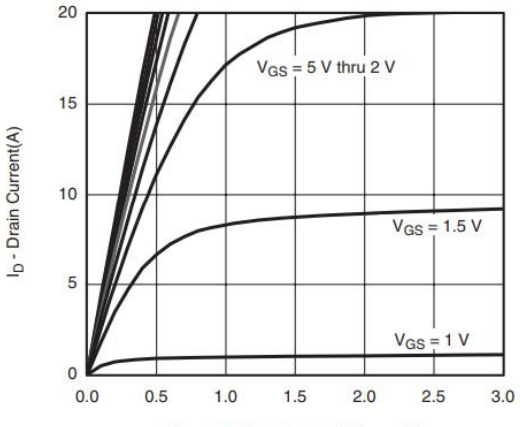
b. Repetitive rating, pulse width limited by junction temperature.

c. The power dissipation PD is based on TJ(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.

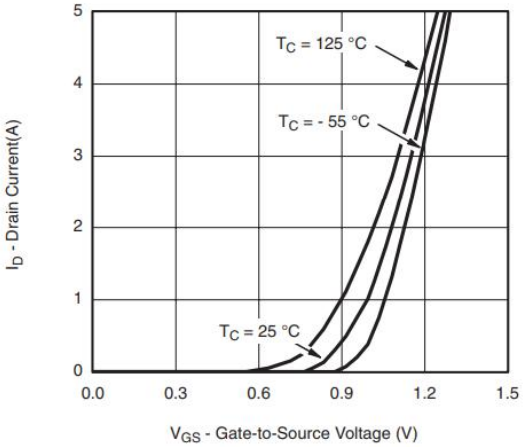
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V , ID=-10uA	-20			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS , ID=-250uA	-0.4	-0.6	-0.9	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=-4.5V , ID=-3.5A		35	45	mR
		VGS=-2.5V , ID=-3A		44	60	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=-20V , VGS=0V			-1	uA
I_{GSS}	Gate-Source leak current	VGS=±12V , VDS=0V			±100	nA
G_{FS}	Transconductance	VDS=-5V , ID=-3.5A		9.2		S
V_{SD}	Forward Voltage	VGS=0V , IS=-1.6A	-0.5	-0.75	-1.2	V
Ciss	Input Capacitance	VDS=-10V , VGS=0V, f=1MHz		869		pF
Coss	Output Capacitance			265		
Crss	Reverse Transfer Capacitance			258		
$T_{D(ON)}$	Turn-on delay time	VDS=-10V, ID=-1.0A, RL=6R, VGS=-4.5V, RG=6R		12		ns
Tr	Rise time			8.9		
$T_{D(OFF)}$	Turn-off delay time			45		
Tf	Fall time			15		
Q_G	Total Gate Charge	VDS=-10V , VGS=-4.5V , ID=-5A		12		nC
Q_{GS}	Gate to Source Charge			2.1		
Q_{GD}	Gate to Drain Charge			2.4		

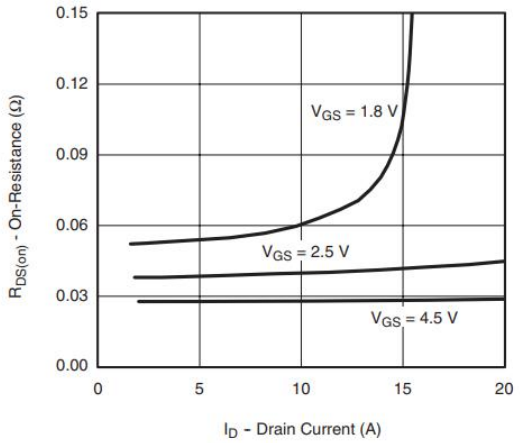
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



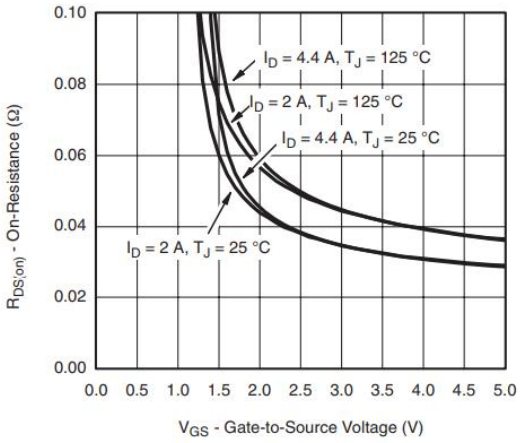
Output Characteristics



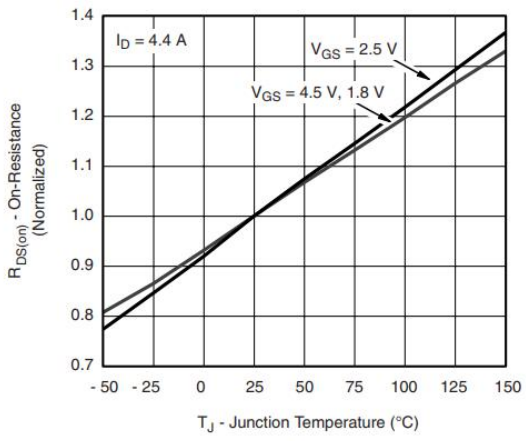
Transfer Characteristics



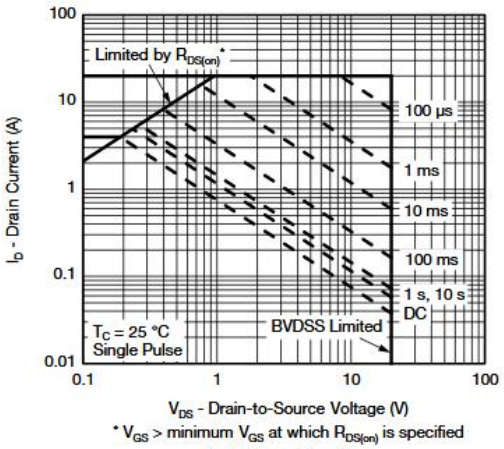
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

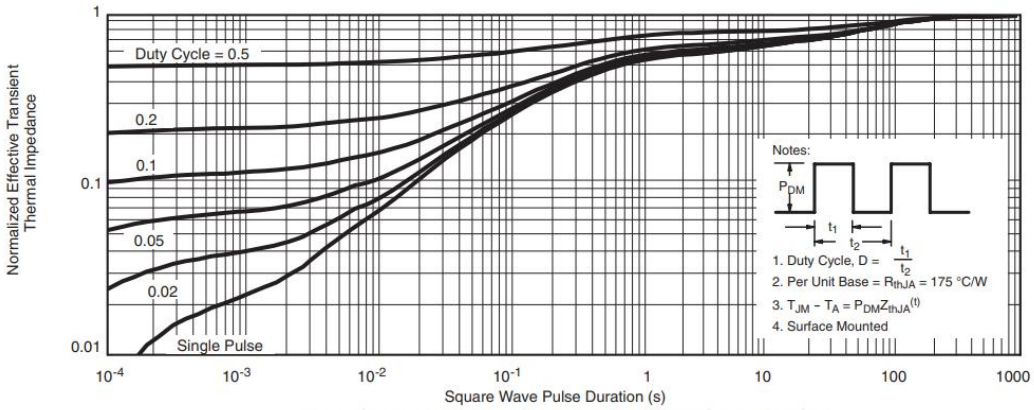


On-Resistance vs. Junction Temperature



* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area



Normalized Thermal Transient Impedance, Junction-to-Ambient

➢ Package Information