SSC8125GS6

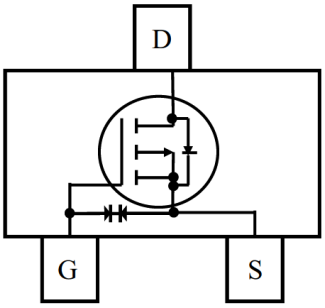
P-Channel Enhancement Mode MOSFET with ESD Protection

➢ Features

VDS	VGS	RDSON Typ.	ID	ESD
-20V	±8V	36mR@-4V5	-4A	3kV
		45mR@-2V5		
		57mR@-1V8		
		66mR@-1V5		

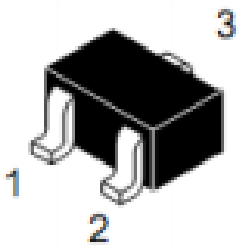
➢ Pin configuration

Top view

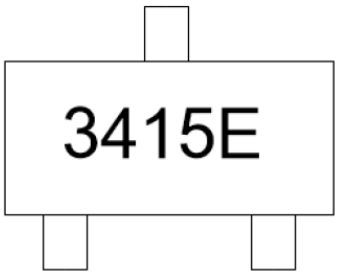


➢ Description

This device uses advanced trench technology to provide excellent RDSON, low gate charge and operation with gate voltages as low as 1.5V and it is protected from ESD. These features make it suitable for use as a load switch or in PWM applications.



SOT23



Marking

➢ Applications

- Load Switch
- Portable Devices
- DCDC conversion

➢ Ordering Information

Device	Package	Shipping
SSC8125GS6	SOT23	3000/Reel

➢ 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	±8	V
I_D	Continuous Drain Current [a]	-4	A
I_{DM}	Pulsed Drain Current [b]	-20	A
P_D	Power Dissipation [c]	0.9	W
P_{DSM}	Power Dissipation [a]	0.45	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		280	℃/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.

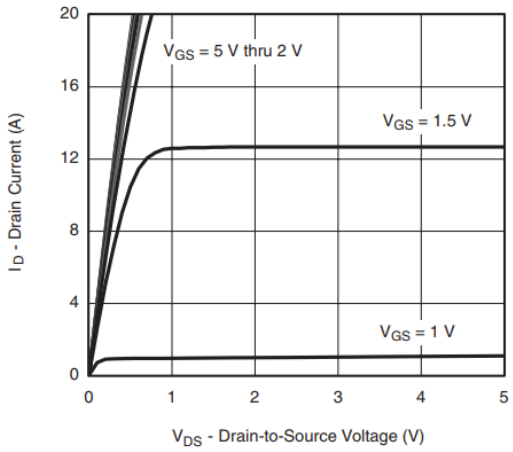
b. Repetitive rating, pulse width limited by junction temperature.

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.

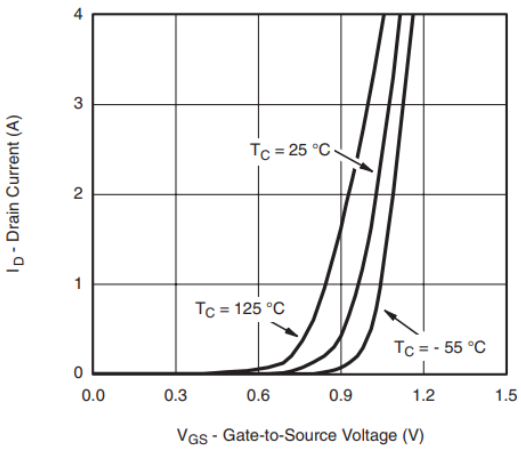
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V , ID=-250uA	-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=-4A		36	41	mR
		VGS=-2.5V , ID=-3A		45	52	
		VGS=-1.8V , ID=-2A		57	62	
		VGS=-1.5V , ID=-1A		66	72	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=-20V , VGS=0V			-1	uA
I_{GSS}	Gate-Source leak current	VGS=±8V , VDS=0V			±10	uA
G_{FS}	Transconductance	VDS=-5V , ID=-4A		16		S
V_{SD}	Forward Voltage	VGS=0V , IS=-1.6A		-0.7	-1.3	V
Ciss	Input Capacitance	VDS=-10V, VGS=0V, F=1MHZ		418		pF
Coss	Output Capacitance			136		
Crss	Reverse Transfer Capacitance			56		
$T_{D(ON)}$	Turn-on delay time	VGS=-5V, VDS=-10V, RL=1.5R, RG=3R		18		ns
Tr	Rise time			12		
$T_{D(OFF)}$	Turn-off delay time			70		
Tf	Fall time			25		

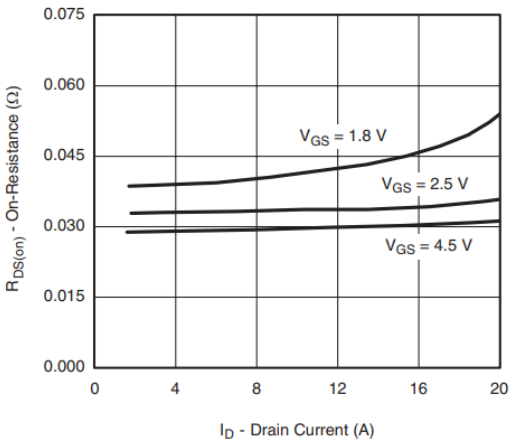
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



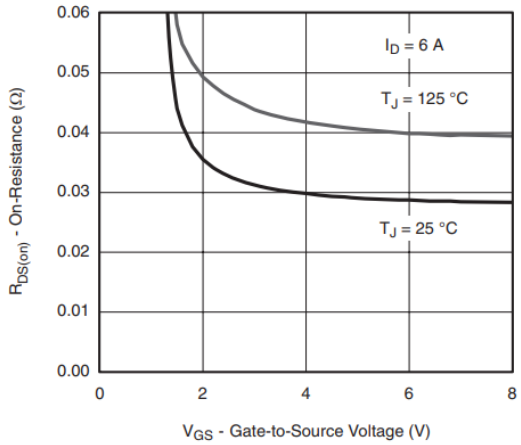
Output Characteristics



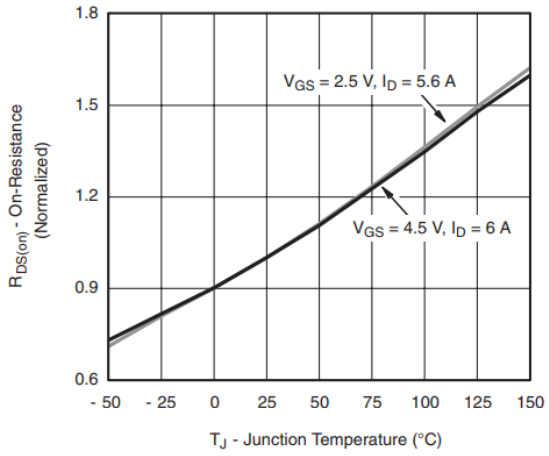
Transfer Characteristics



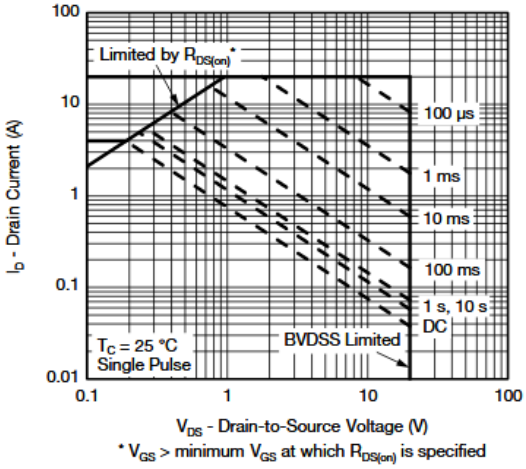
On-Resistance vs. Drain Current and Gate Voltage



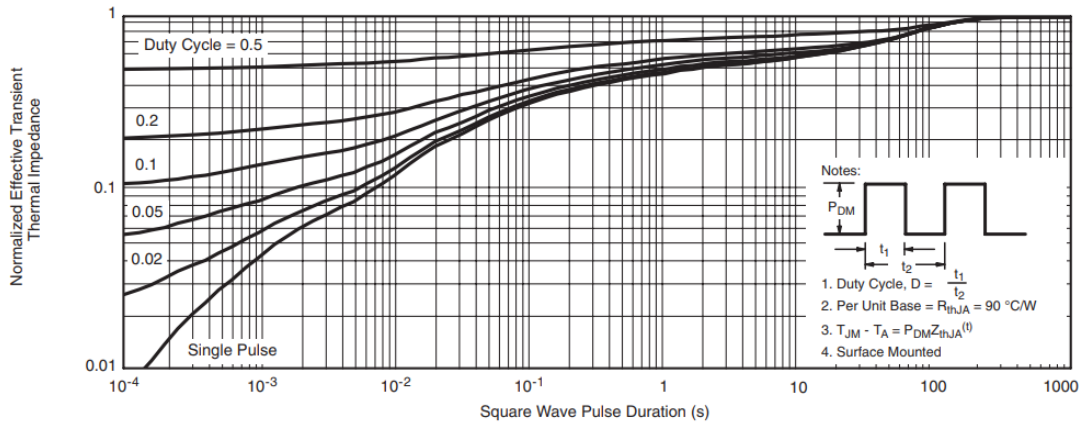
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

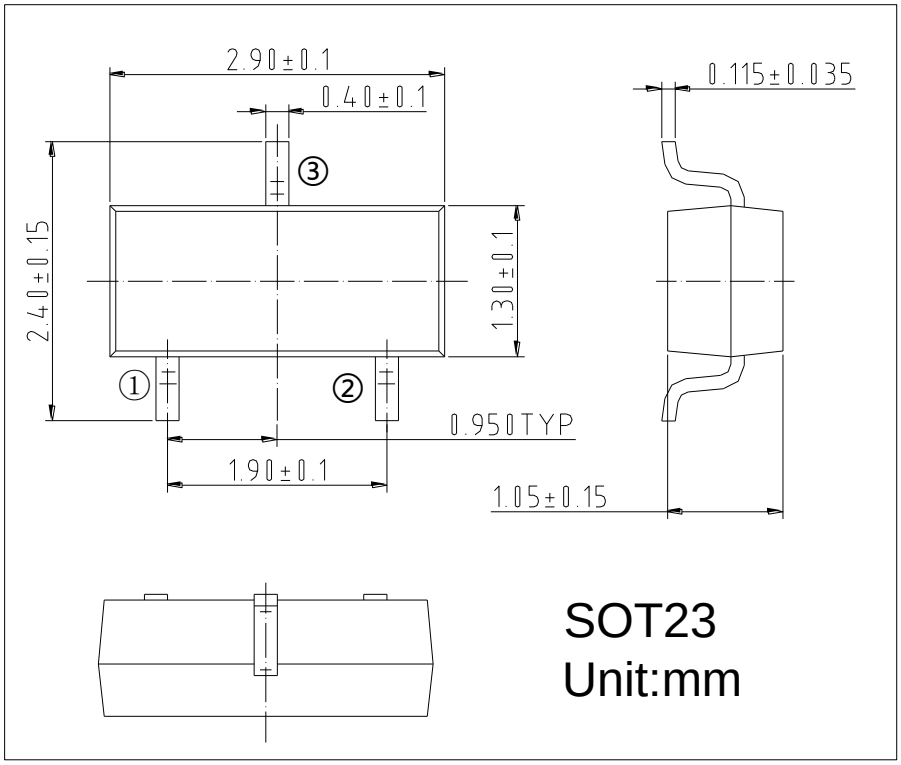


Safe Operating Area



Normalized Thermal Transient Impedance, Junction-to-Ambient

➢ Package Information



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