



SSC8222GS1

N-Channel Enhancement Mode MOSFET

➤ Features

V _{DS}	V _{GS}	R _{DS(ON)}	I _D
20V	±12V	5.5mΩ@10V	45A
		7.5mΩ@4V5	

➤ Description

This SSC8222GS1 uses advanced trench technology to provide excellent R_{DS(ON)} and low gate charge. The complementary MOSFETS may be used to form a level shifted high side switch, and for a host of other applications.

100% UIS + ΔV_{DS} + R_g Tested!

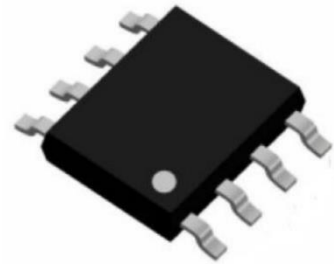
➤ Applications

- DC/DC converters
- Power supplies
- Motor Drive Control
- Synchronous rectification

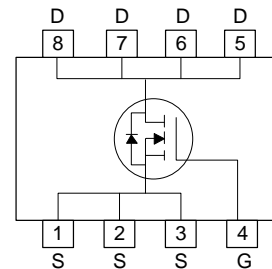
➤ Ordering Information

Device	Package	Shipping
SSC8222GS1	SOP-8	2500/Reel

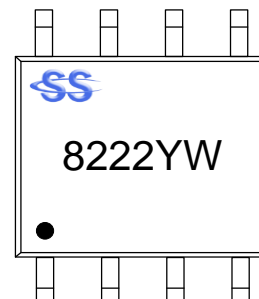
➤ Pin configuration



SOP-8



Pin Configuration (Top View)



Marking

(YW: Internal Traceability Code)



➤ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ 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 ^d	$T_C=25^\circ\text{C}$	45
		$T_C=100^\circ\text{C}$	25
I_{DSM}	Continuous Drain Current ^a	$T_A=25^\circ\text{C}$	15
		$T_A=70^\circ\text{C}$	11
I_{DM}	Pulsed Drain Current ^b	180	A
P_D	Power Dissipation ^c	$T_C=25^\circ\text{C}$	25
		$T_C=100^\circ\text{C}$	10
P_{DSM}	Power Dissipation ^a	$T_A=25^\circ\text{C}$	2.5
		$T_A=70^\circ\text{C}$	1.6
E_{AS}	Avalanche Energy ^b L=0.5mH Single Pulse	25	mJ
T_J	Operation junction temperature	-55~150	°C
T_{STG}	Storage temperature range	-55~150	

➤ Thermal Resistance Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance ^a	50	°C/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	5	

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 power dissipation is based on the $t \leq 10s$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- 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 heat sinking is used.
- The maximum current rating is package limited.

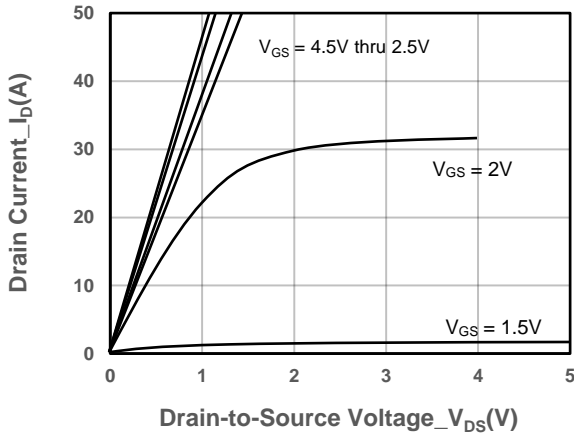


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

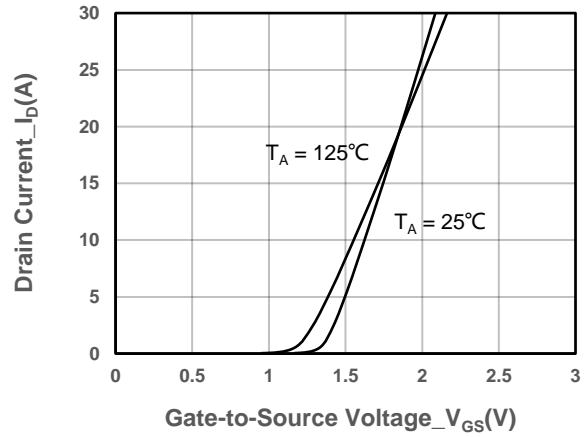
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	0.4	0.7	1.2	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D = 10A		5.5	7.4	mΩ
		V _{GS} = 2.5V, I _D = 6A		7.5	10	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0V			1	μA
Gate-Source Leak Current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
Transconductance	G _{FS}	V _{DS} = 5V, I _D = 10A		25		s
Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 1A		0.8	1.3	V
Gate Resistance	R _G	V _{DS} = 0V, f = 1MHz		2		Ω
Input Capacitance	C _{ISS}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		1420		pF
Output Capacitance	C _{OSS}			240		
Reverse Transfer Capacitance	C _{RSS}			210		
Total Gate Charge	Q _G	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 10A		13		nC
Gate to Source Charge	Q _{GS}			5		
Gate to Drain Charge	Q _{GD}			6		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = 4.5V, V _{DS} = 10V, R _L = 1Ω, R _G = 1Ω		11		ns
Rise Time	T _r			22		
Turn-off Delay Time	T _{D(OFF)}			35		
Fall Time	T _f			17		
Diode Recovery Time	T _{rr}	I _F =10A, di/dt=100A/us		11		ns
Diode Recovery Charge	Q _{rr}	I _F =10A, di/dt=100A/us		15		nC



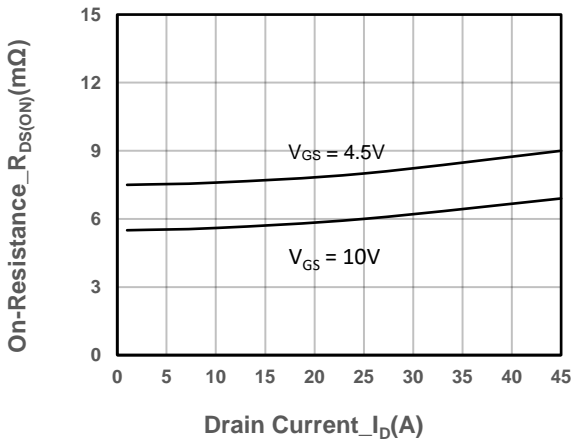
➤ **Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)**



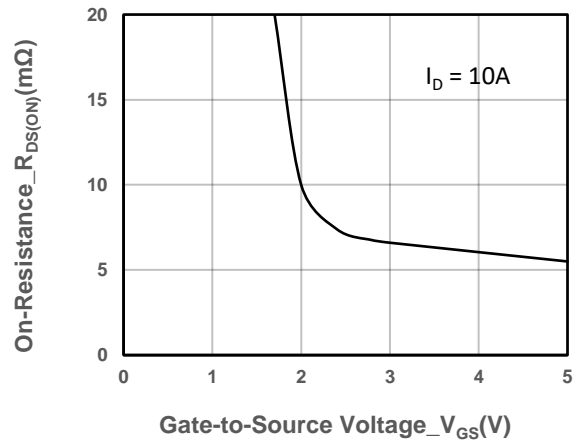
Output Characteristics



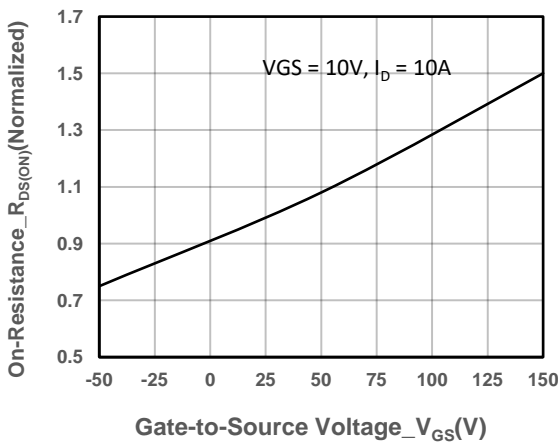
Transfer Characteristics



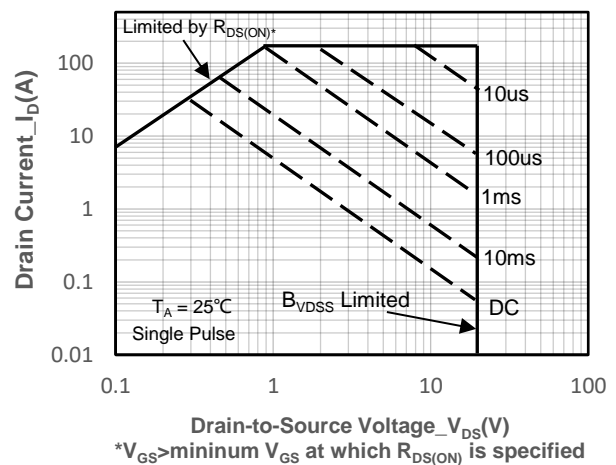
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

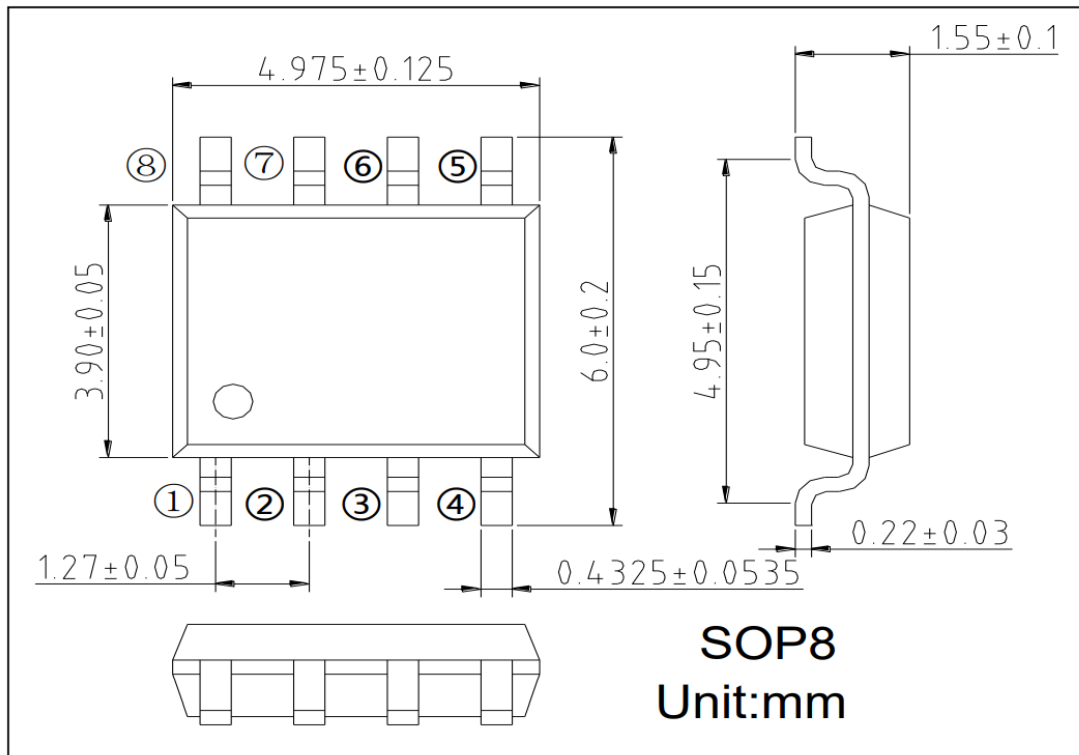


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➤ Package Information



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