



SSC8043GS1

P-Channel Enhancement Mode MOSFET

➤ Features

V _{DS}	V _{GS}	R _{DS(ON)} Typ.	I _D
-40V	±20V	22mΩ@-10V	-18A
		30mΩ@-4V5	

➤ Description

This SSC8043GS1 uses advanced trench technology to provide excellent RDSON 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 + ΔVDS + Rg Tested!

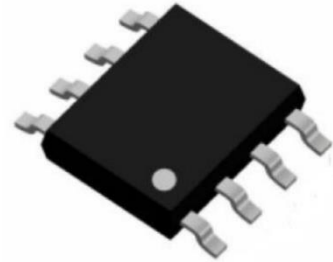
➤ Applications

- Load Switch
- PWM Application
- Power Management

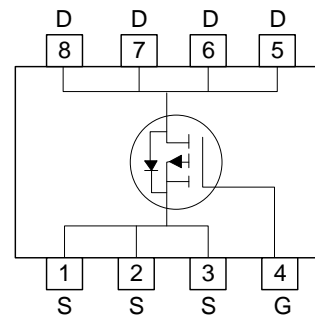
➤ Ordering Information

Device	Package	Shipping
SSC8043GS1	SOP-8	4000/Reel

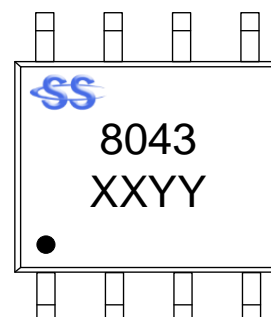
➤ Pin configuration



SOP-8 (Top View)



Pin Configuration



Marking

(XXYY: 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	-40	V
V_{GSS}	Gate-to-Source Voltage	± 20	V
I_D	Continuous Drain Current ^d	$T_C=25^{\circ}\text{C}$	-18
		$T_C=100^{\circ}\text{C}$	-10
I_{DSM}	Continuous Drain Current ^a	$T_A=25^{\circ}\text{C}$	-9
		$T_A=70^{\circ}\text{C}$	-7
I_{DM}	Pulsed Drain Current ^b	-70	A
P_D	Power Dissipation ^c	$T_C=25^{\circ}\text{C}$	12.5
		$T_C=100^{\circ}\text{C}$	5
P_{DSM}	Power Dissipation ^a	$T_A=25^{\circ}\text{C}$	3.47
		$T_A=70^{\circ}\text{C}$	2.22
I_{AS}	Avalanche Current ^b $L=0.5\text{mH}$ Single Pulse	-10	A
E_{AS}	Avalanche Energy ^b $L=0.5\text{mH}$ Single Pulse	25	mJ
T_J	Operation junction temperature	-55~150	$^{\circ}\text{C}$
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	36	$^{\circ}\text{C/W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	10	

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 $t \leq 10\text{s}$ 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.

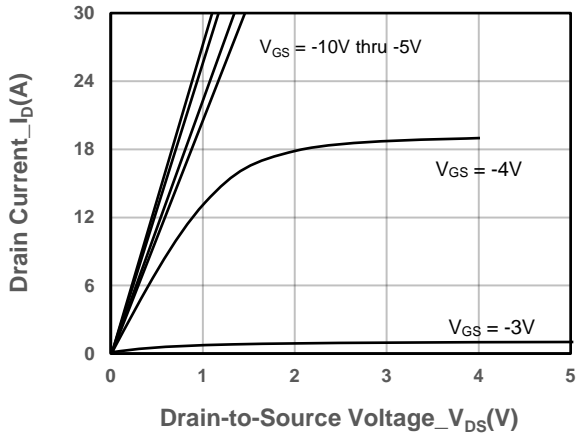


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

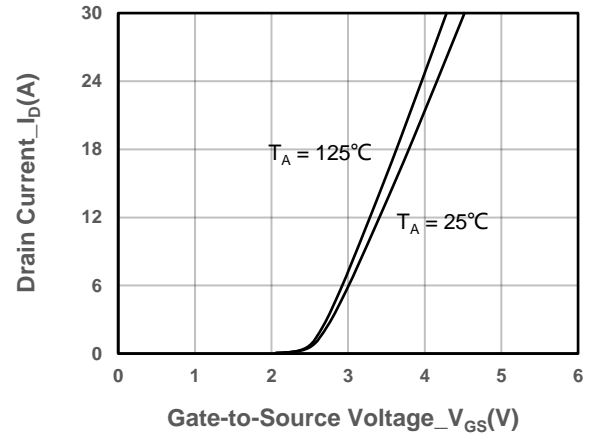
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-40			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -7A		22	32	mΩ
		V _{GS} = -4.5V, I _D = -4A		30	40	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -40V, V _{GS} = 0V			1	μA
Gate-Source Leak Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = -7A		-0.85	-1.3	V
Gate Resistance	R _G	V _{DS} = 0V, f = 1MHz		11		Ω
Input Capacitance	C _{ISS}	V _{DS} = -20V, V _{GS} = 0V, f = 1MHz		1320		pF
Output Capacitance	C _{OSS}			130		
Reverse Transfer Capacitance	C _{RSS}			118		
Total Gate Charge	Q _G	V _{GS} = -10V, V _{DS} = -20V, I _D = -10A		16		nC
Gate to Source Charge	Q _{GS}			4		
Gate to Drain Charge	Q _{GD}			65		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = -10V, V _{DS} = -10V, R _L = 10Ω, R _G = 1Ω		11		ns
Rise Time	T _r			11		
Turn-off Delay Time	T _{D(OFF)}			22		
Fall Time	T _f			8		
Diode Recovery Time	T _{rr}	I _F = -20A, di/dt = 500A/μs		18		ns
Diode Recovery Charge	Q _{rr}	I _F = -20A, di/dt = 500A/μs		16		nC



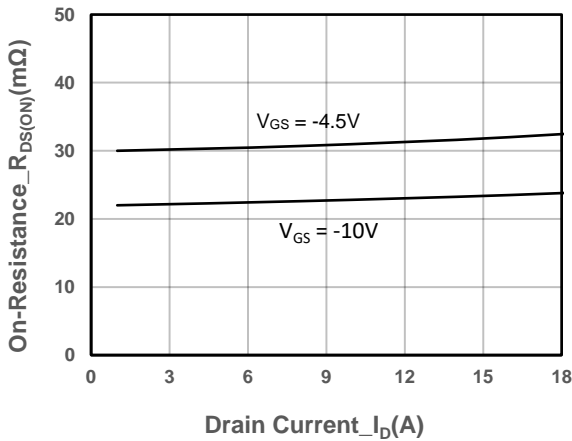
➤ **Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)**



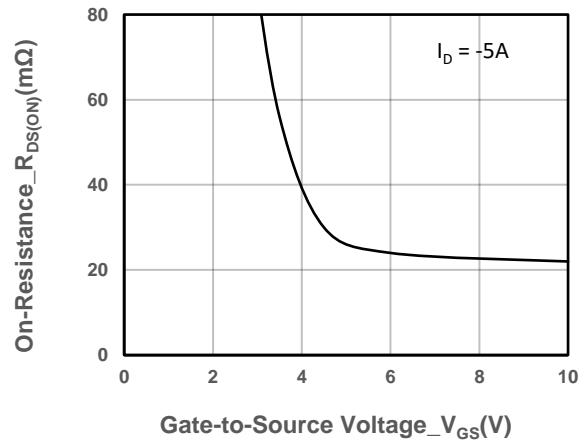
Output Characteristics



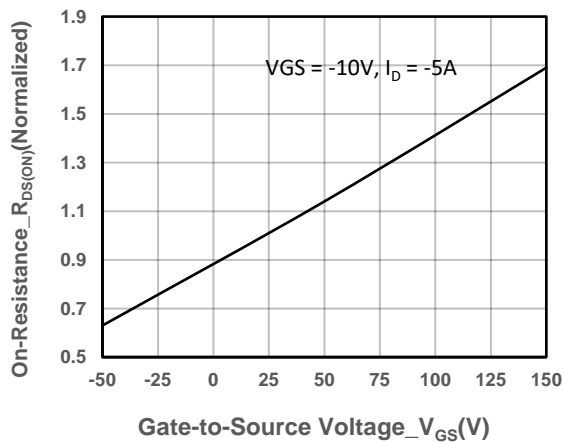
Transfer Characteristics



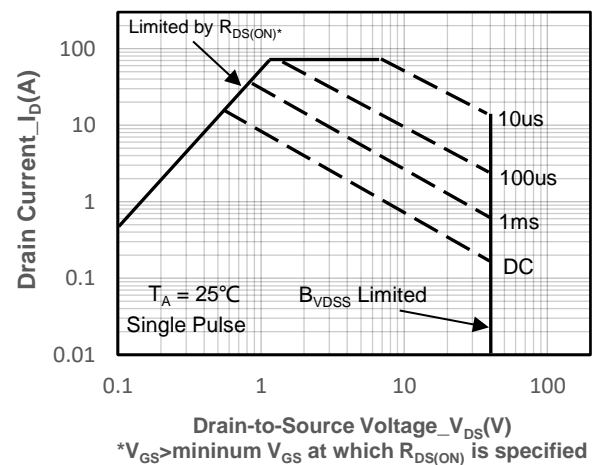
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

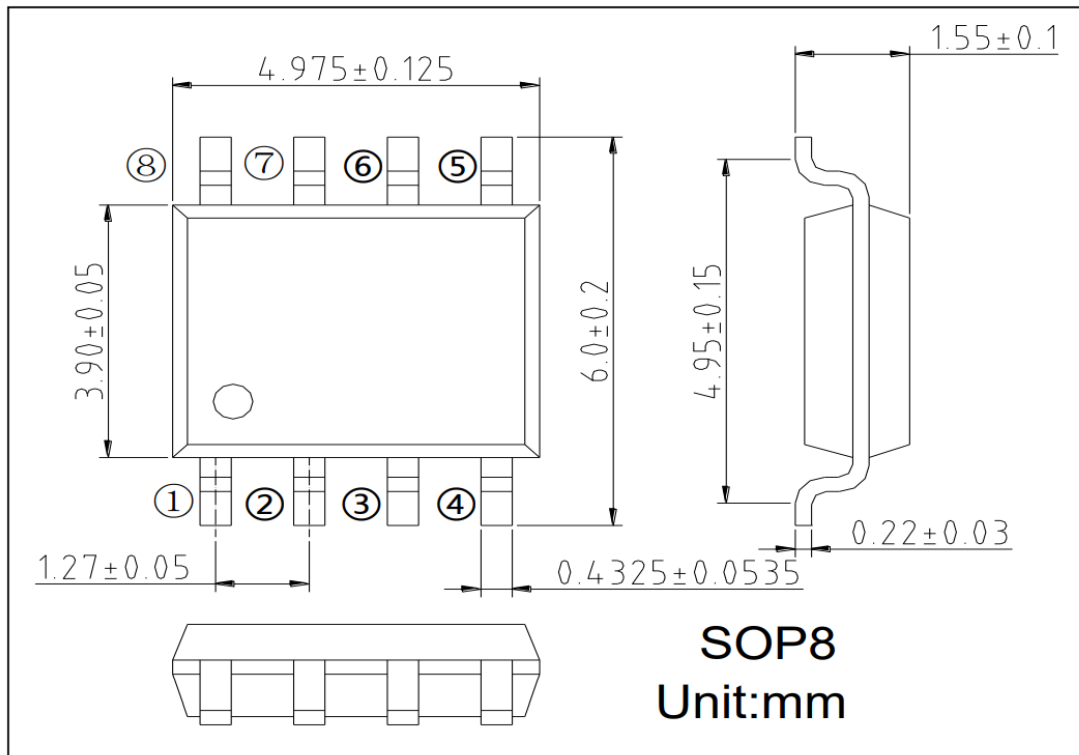


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➤ Package Information



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