SSC8041GS1

P-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
-40V	±20V	11mΩ@-10V	-29A
		18mΩ@-4.5V	

➢ Description

This SSC8041GS1 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!

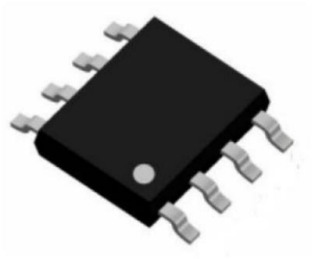
➢ Applications

- Load Switch
- PWM Application
- Power Management

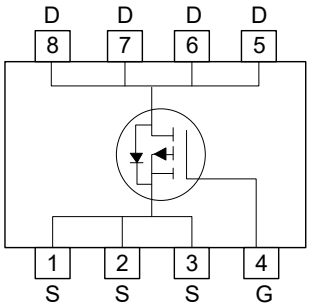
➢ Ordering Information

Device	Package	Shipping
SSC8041GS1	SOP-8	4000/Reel

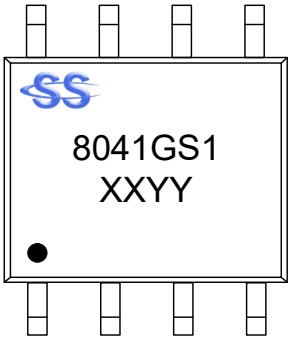
➢ Pin configuration



SOP-8 (Top View)



Pin Configuration



Marking

(XXYY: Internal Traceability Code)

➢ Absolute Maximum Ratings (T_A=25℃ 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℃	-29	A
		T_C=100℃	-15	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	-13	A
		T_A=70℃	-9.8	
I_{DM}	Pulsed Drain Current [b]		-80	A
P_D	Power Dissipation [c]	T_C=25℃	14	W
		T_C=100℃	5.6	
P_{DSM}	Power Dissipation [a]	T_A=25℃	3.1	W
		T_A=70℃	2	
I_{AS}	Avalanche Current [b] L=0.5mH Single Pulse		-15	A
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		56.25	mJ
T_J	Operation junction temperature		-55~150	℃
T_{STG}	Storage temperature range		-55~150	

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

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	40	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	8.9	℃/W

Note:

a. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper, in a still air environment with T_A=25℃.The value in any given application depends on the user is specific board design. The power dissipation is based on the t≤10s thermal resistance rating.

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

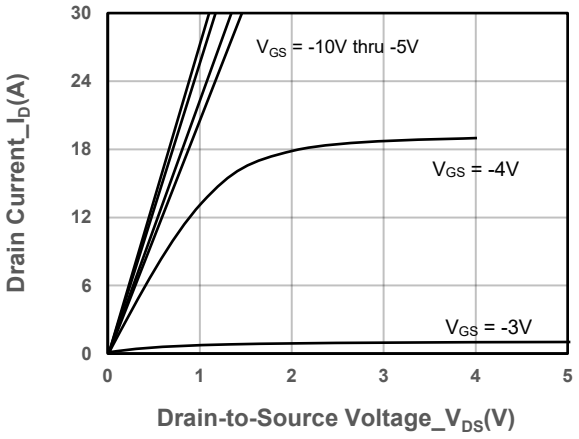
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

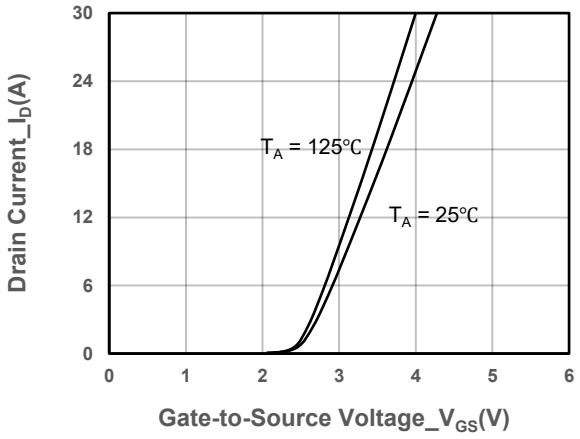
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

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 = -250uA	-1.2	-2.2	-3	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -15A		11	14	mΩ
		V_{GS} = -4.5V, I_D = -10A		18	23	
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 = -5A		-0.7	-1.3	V
Gate Resistance	R_G	V_{DS} = 0V, f = 1MHz		8		Ω
Input Capacitance	C_{ISS}	V_{DS} = -20V, V_{GS} = 0V, f = 1MHz		2650		pF
Output Capacitance	C_{OSS}			240		
Reverse Transfer Capacitance	C_{RSS}			220		
Total Gate Charge	Q_G	V_{GS} = -10V, V_{DS} = -20V, I_D = -10A		35		nC
Gate to Source Charge	Q_{GS}			6		
Gate to Drain Charge	Q_{GD}			12		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = -20V, V_{DS} = -10V, R_L = 2Ω, R_G = 6Ω		12		ns
Rise Time	T_r			40		
Turn-off Delay Time	$T_{D(OFF)}$			50		
Fall Time	T_f			20		
Diode Recovery Time	T_{rr}	I_F=-20A, di/dt=500A/us		20		ns
Diode Recovery Charge	Q_{rr}	I_F=-20A, di/dt=500A/us		18		nC

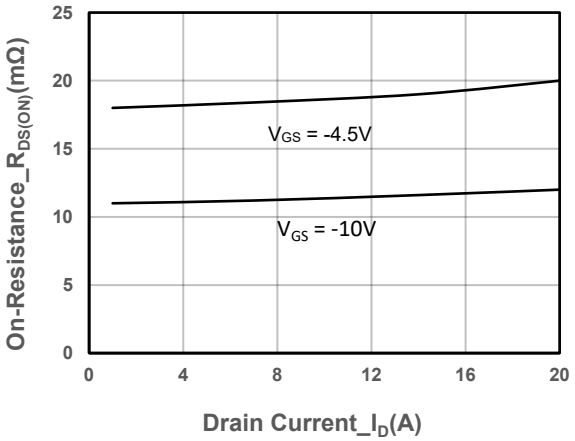
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



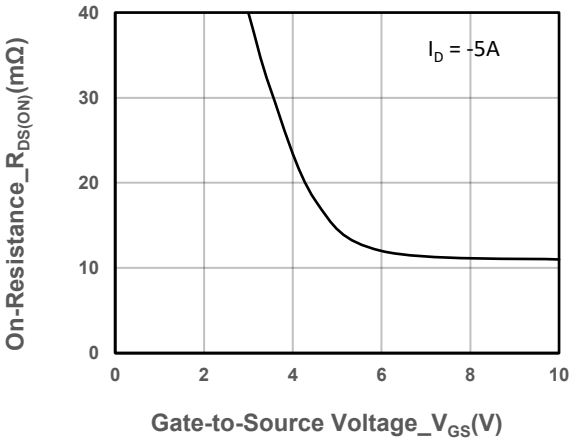
Output Characteristics



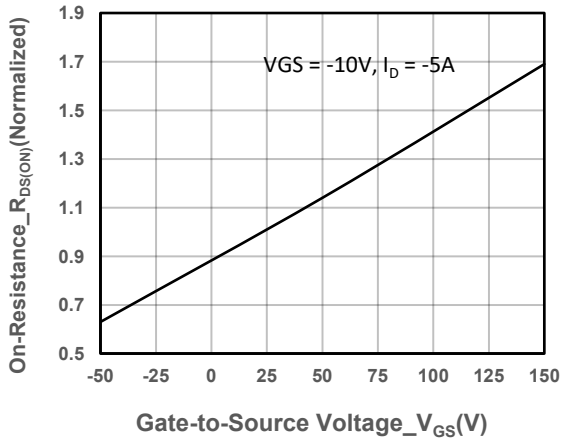
Transfer Characteristics



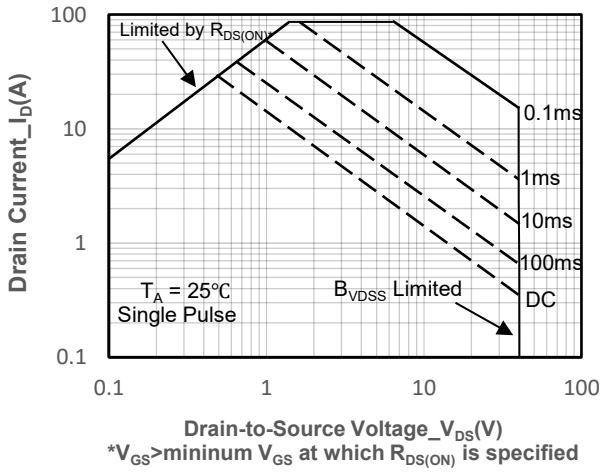
On-Resistance vs. Drain Current and Gate Voltag



On-Resistance vs. Gate-to-Source Voltage

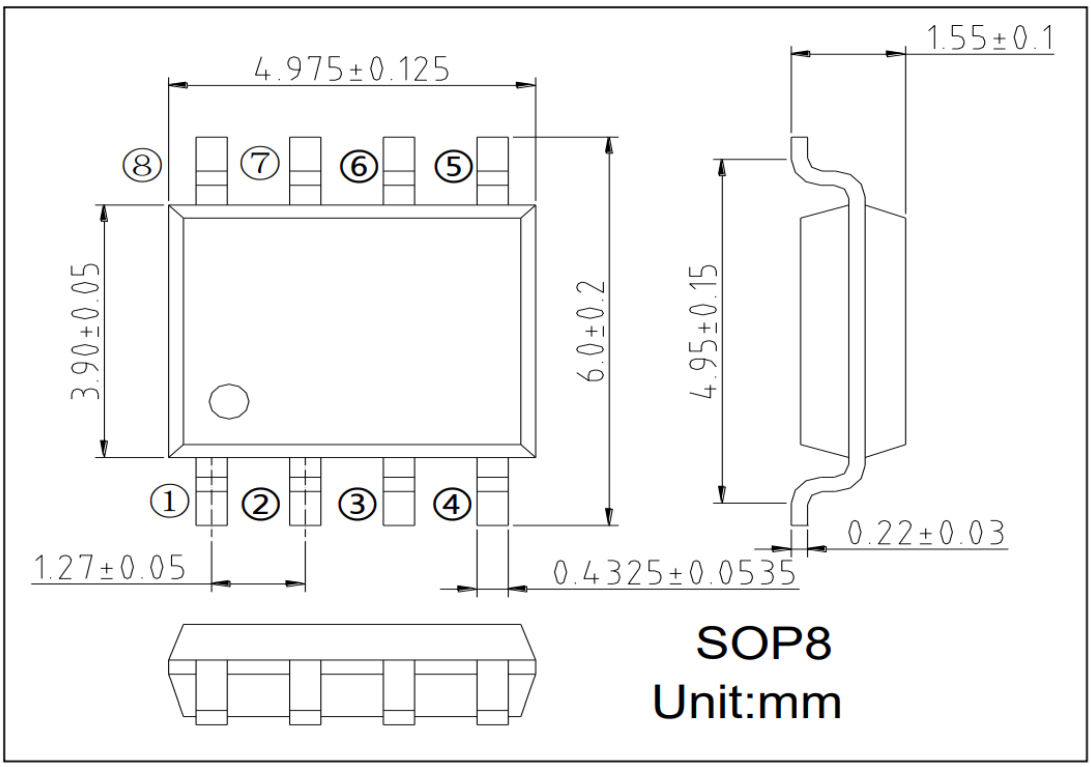


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➢ Package Information



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