

**SSC8042GS6****N-Channel Enhancement Mode MOSFET****➤ Features**

VDS	VGS	RDSON Typ.	ID
40V	±20V	36mR@10V	4A
		45mR@4V5	

➤ Description

This device uses advanced trench technology to provide excellent RDSON and low gate charge . This device is suitable for use as a load switch,DC-DC conversion and power switch applications.

➤ Applications

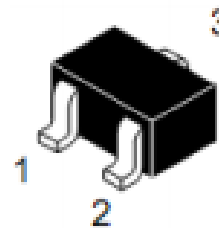
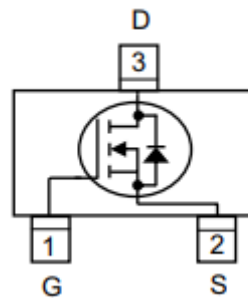
- Load Switch
- Power Switch
- Portable and consumer applications

➤ Ordering Information

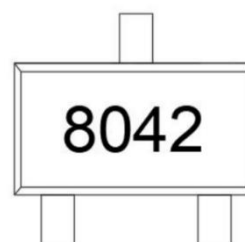
Device	Package	Shipping
SSC8042GS6	SOT23	3000/Reel

➤ Pin configuration

Top view



SOT23



Marking



➤ **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 ^a	4	A
P_D	Power Dissipation ^a	0.71	W
T_J	Operation junction temperature	-55 to 150	$^{\circ}\text{C}$
T_{STG}	Storage temperature range	-55 to 150	$^{\circ}\text{C}$

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

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance ^a		175	$^{\circ}\text{C}/\text{W}$

Note:

- a. 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's specific board design. The current rating is based on the $t \leq 10\text{s}$ thermal resistance rating.

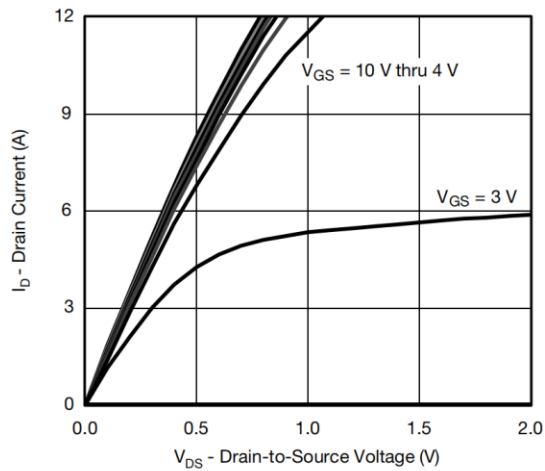


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

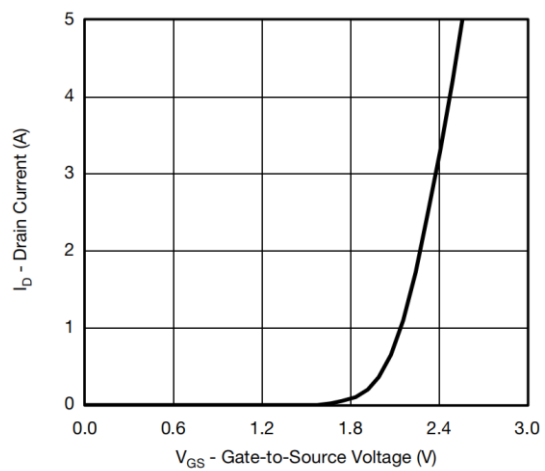
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	40			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=4A$		36	50	mR
		$V_{GS}=4.5V, I_D=3A$		45	65	mR
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=40V, V_{GS}=0V$			1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
G_{FS}	Transconductance	$V_{DS}=5V, I_D=4A$		10		S
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=2A$		0.8	1.3	V
C_{iss}	Input Capacitance	$V_{DS}=20V, V_{GS}=0V,$ $f=1\text{MHz}$		420		pF
C_{oss}	Output Capacitance			42		
C_{rss}	Reverse Transfer Capacitance			37		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=10V,$ $V_{DS}=20V,$ $R_G=3R, R_L=5R$		4		ns
T_r	Rise Time			2.8		
$T_{D(OFF)}$	Turn-off delay time			19.7		
T_f	Fall Time			5.9		
Q_g	Total Gate charge	$V_{GS}=10V, V_{DS}=20V,$ $I_D=4A$		10.1		nC
Q_{gs}	Gate Source charge			1.1		
Q_{gd}	Gate Drain charge			2.3		
T_{rr}	Diode Recovery Time	$I_F=4A, di/dt=100A/\mu s$		11.2		ns
Q_{rr}	Diode Recovery Charge	$I_F=4A, di/dt=100A/\mu s$		4.4		nC



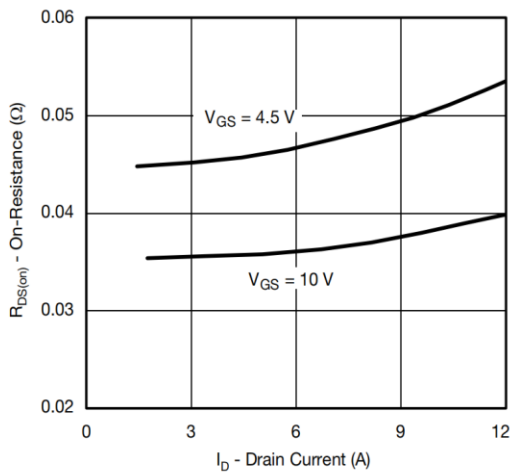
➤ **Typical Characteristics**($T_A=25^\circ\text{C}$ unless otherwise noted)



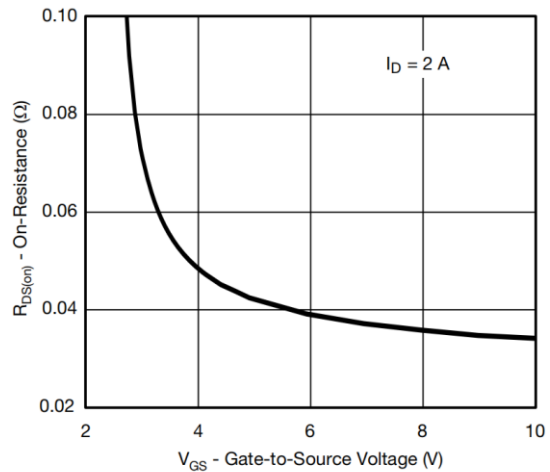
Output Characteristics



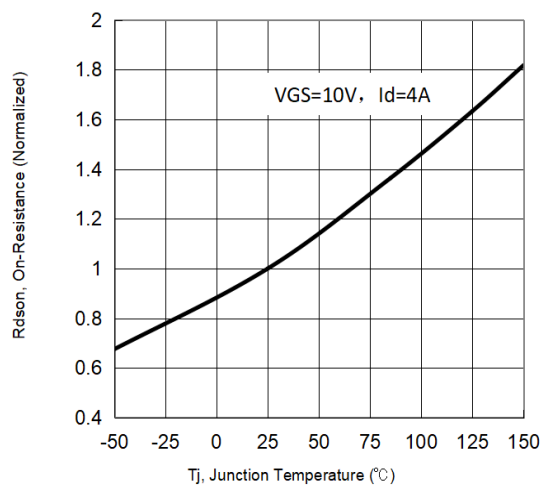
Transfer Characteristics



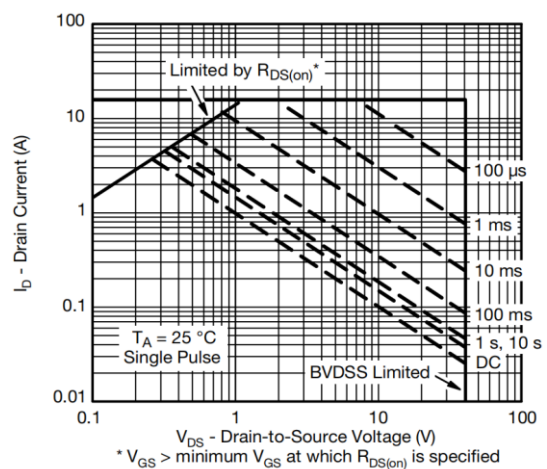
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage



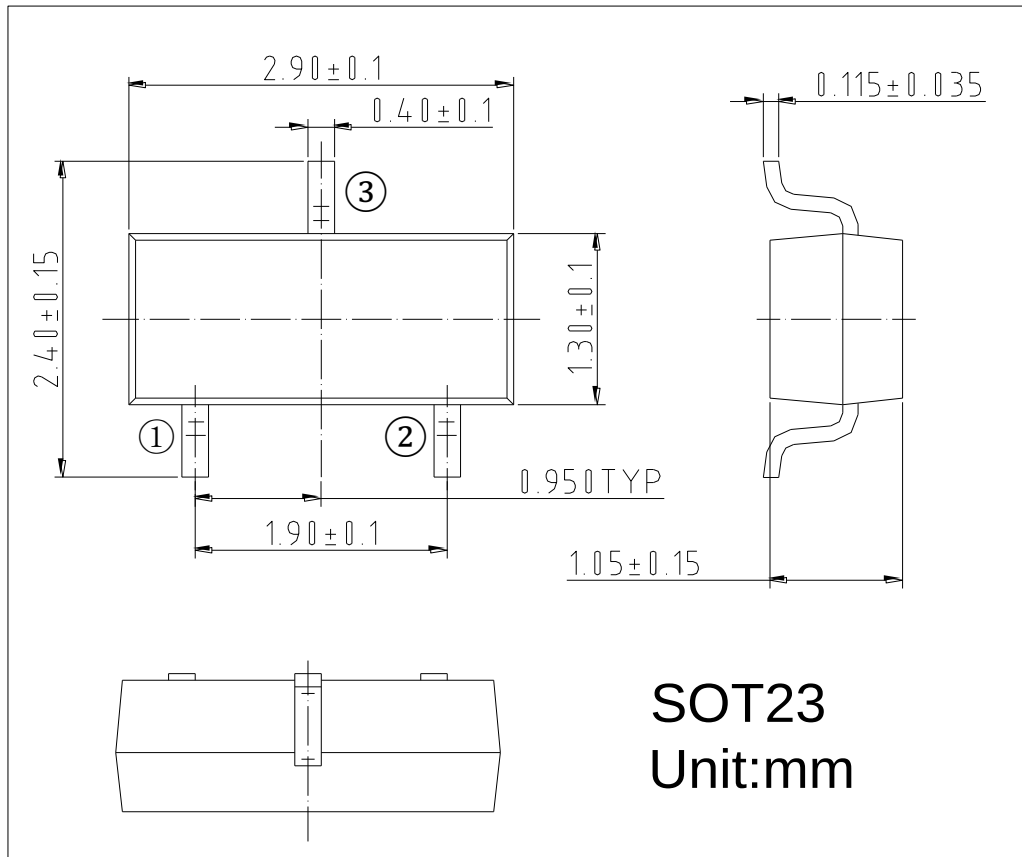
On-Resistance vs. Junction Temperature



Safe Operating Area, Junction-to-Ambient



➤ **Package Information**



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