SSC8040GS6

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
40V	±20V	24mΩ@10V	9A
		29mΩ@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 or in PWM applications.

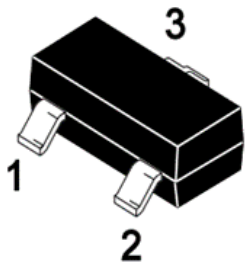
➢ Applications

- Load Switch
- Portable Devices
- DCDC Conversion

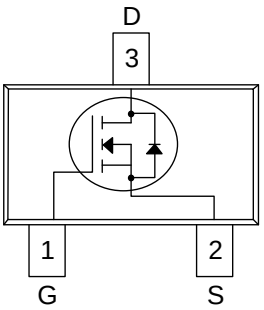
➢ Ordering Information

Device	Package	Shipping
SSC8040GS6	SOT-23	3000/Reel

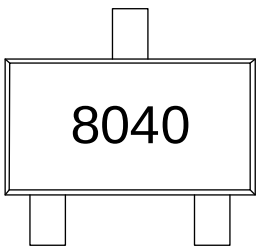
➢ Pin configuration



SOT-23



Pin Configuration (Top View)



Marking

➢ 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 [a]	9	A
I_{DM}	Pulsed Drain Current [b]	36	A
P_D	Power Dissipation [c]	1.25	W
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	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	98	℃/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.

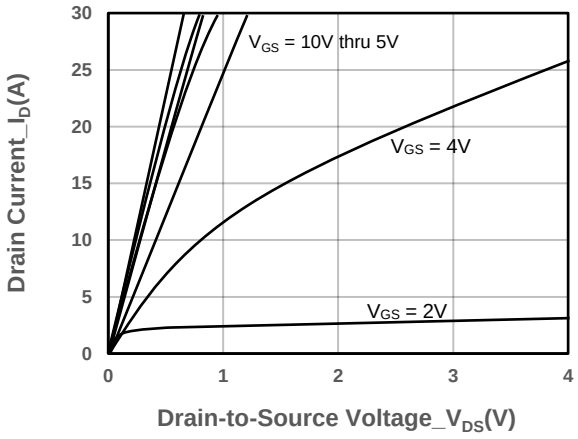
b. Repetitive rating, pulse width limited by junction temperature.

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.

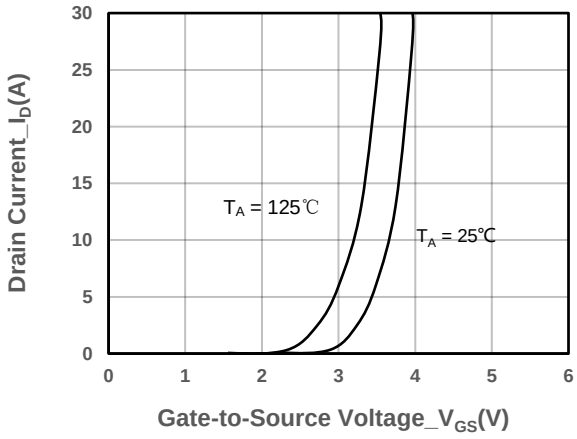
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

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	1.5	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 5.8A		24	33	mΩ
		V_{GS} = 4.5V, I_D = 5A		29	38	
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
Transconductance	G_{FS}	V_{DS} = 5V, I_D = 1A		20		s
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 1A			1.3	V
Input Capacitance	C_{ISS}	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz		530		pF
Output Capacitance	C_{OSS}			68		
Reverse Transfer Capacitance	C_{RSS}			58		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, I_D = 5A, V_{DS} = 20V, R_G = 3Ω		11		ns
Rise Time	T_r			9		
Turn-off Delay Time	$T_{D(OFF)}$			15		
Fall Time	T_f			10		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 20V, I_D = 5A		13.5		nC
Gate to Source Charge	Q_{GS}			1.7		
Gate to Drain Charge	Q_{GD}			2.2		

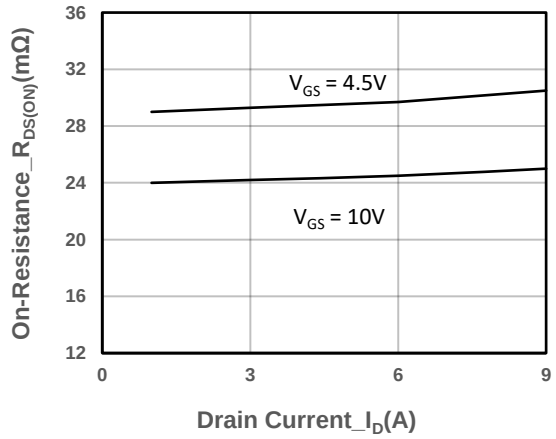
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



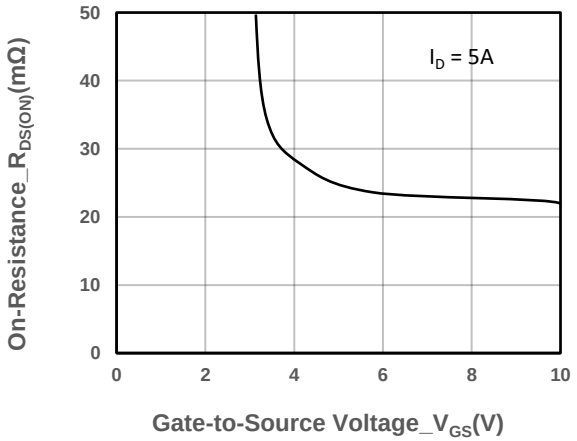
Output Characteristics



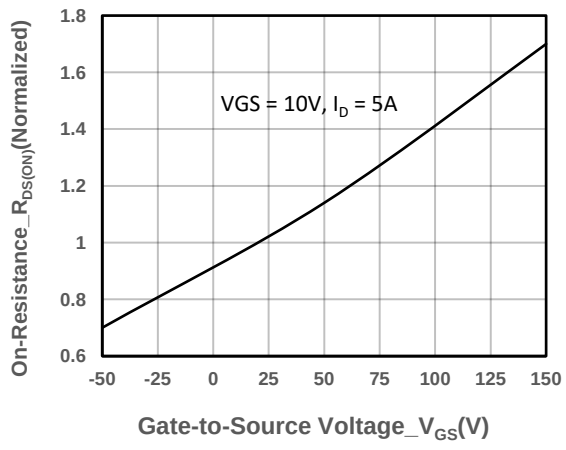
Transfer Characteristics



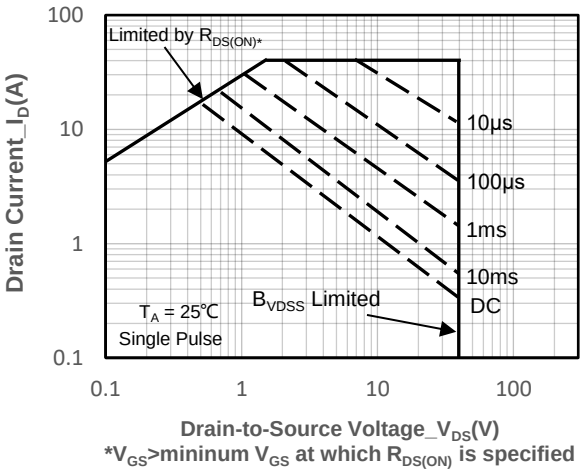
On-Resistance vs. Drain Current and Gate Voltag



On-Resistance vs. Gate-to-Source Voltage

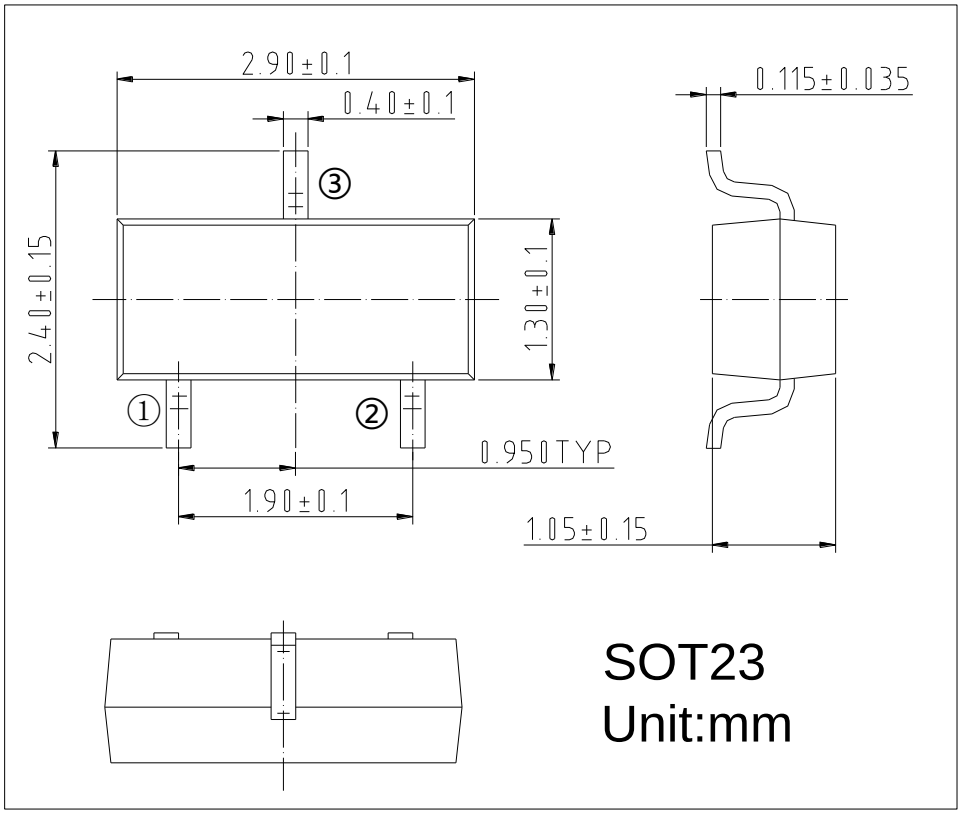


On-Resistance vs. Junction Temperature

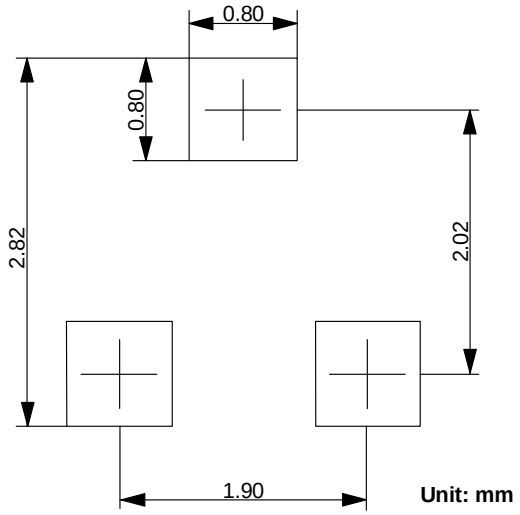


Safe Operating Area vs. Junction-to-Ambient

➢ Package Information



➢ Recommended Pad outline



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