SSC8022GS6

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
20V	±12V	35mΩ@4.5V	3.5A
		45mΩ@2.5V	

➢ Description

This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly applications suits low voltage such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package. Excellent thermal and electrical capabilities.

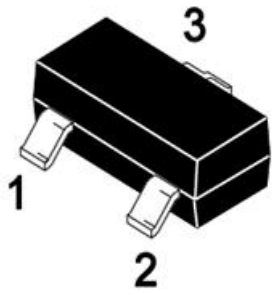
➢ Applications

- Load Switch
- Portable Devices
- DCDC Conversion

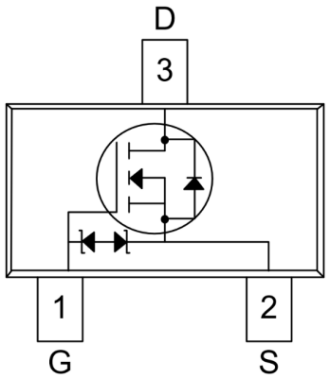
➢ Ordering Information

Device	Package	Shipping
SSC8022GS6	SOT-23	3000/Reel

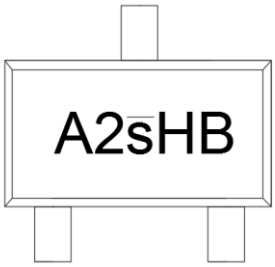
➢ Pin configuration



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	20	V
V_{GSS}	Gate-to-Source Voltage	±12	V
I_D	Continuous Drain Current [a]	3.5	A
I_{DM}	Pulsed Drain Current [b]	10	A
P_D	Power Dissipation [c]	0.9	W
P_{DSM}	Power Dissipation [a]	0.5	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	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]		260	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		150	

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.

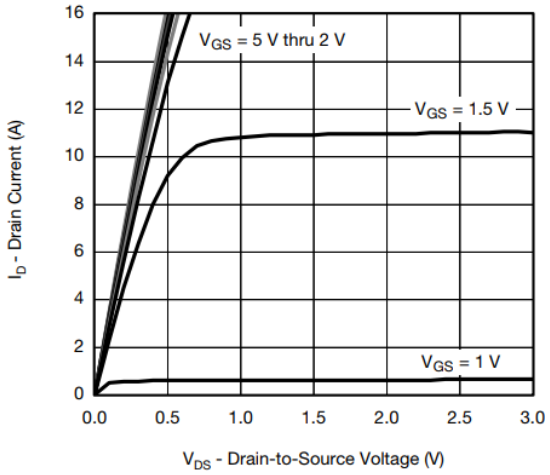
b. Repetitive rating, pulse width limited by junction temperature.

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.

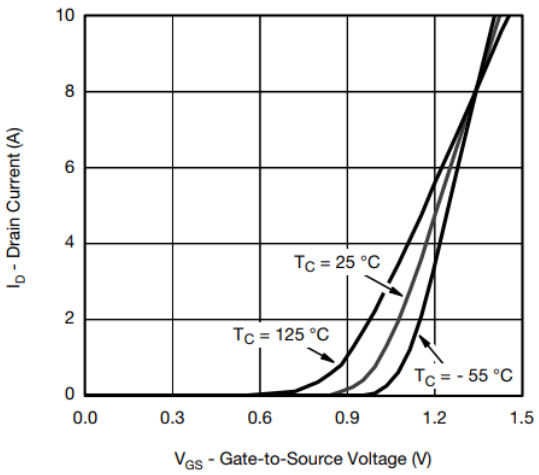
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	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 = 3.5A		35	50	Ω
		V_{GS} = 2.5V, I_D = 3A		45	65	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, 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 =3.5A		8	13	S
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 1.1A		0.8	1.15	V
Input Capacitance	C_{ISS}	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz		450		pF
Output Capacitance	C_{OSS}			70		
Reverse Transfer Capacitance	C_{RSS}			43		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 4.5V, V_{DS} = 5V, R_G = 6Ω, I_D = 3.5A,		6		ns
Rise Time	Tr			9		
Turn-off Delay Time	$T_{D(OFF)}$			18		
Fall Time	Tf			12		
Total Gate Charge	Q_G	VGS=4.5V, VDS=10V, ID=3A		11		nC
Gate Source Charge	Q_{GS}			1.1		
Gate Drain Charge	Q_{GD}			3.3		

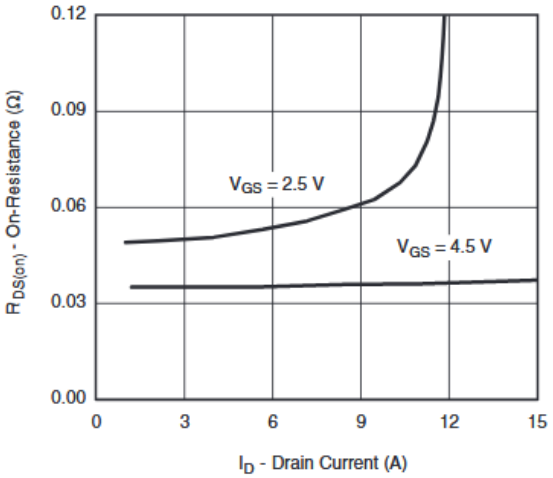
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



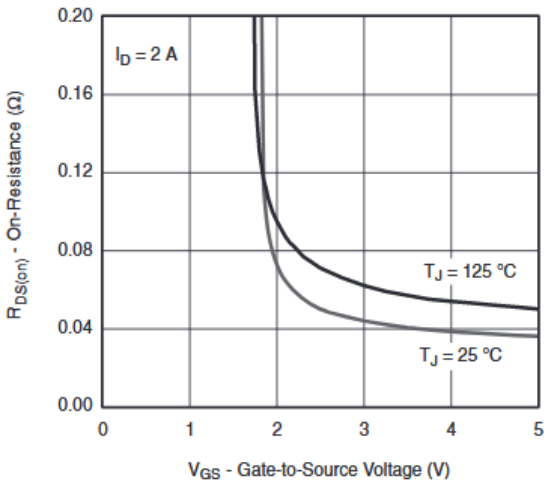
Output Characteristics



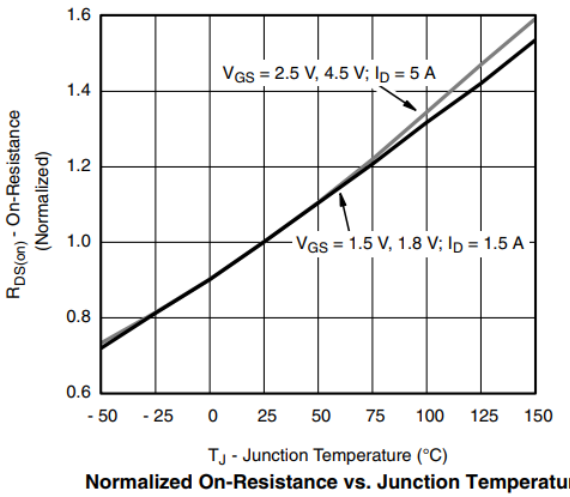
Transfer Characteristics



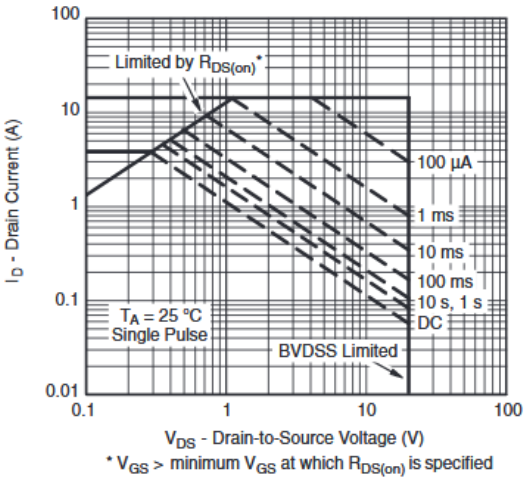
On-Resistance vs. Drain Current and Gate Voltage



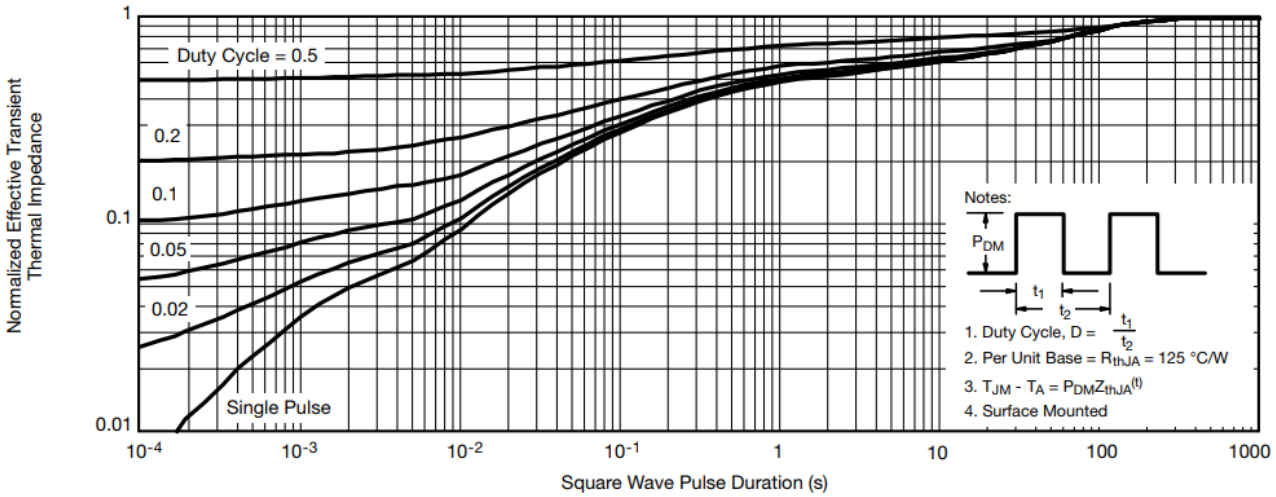
On-Resistance vs. Gate-to-Source Voltage



Normalized On-Resistance vs. Junction Temperature

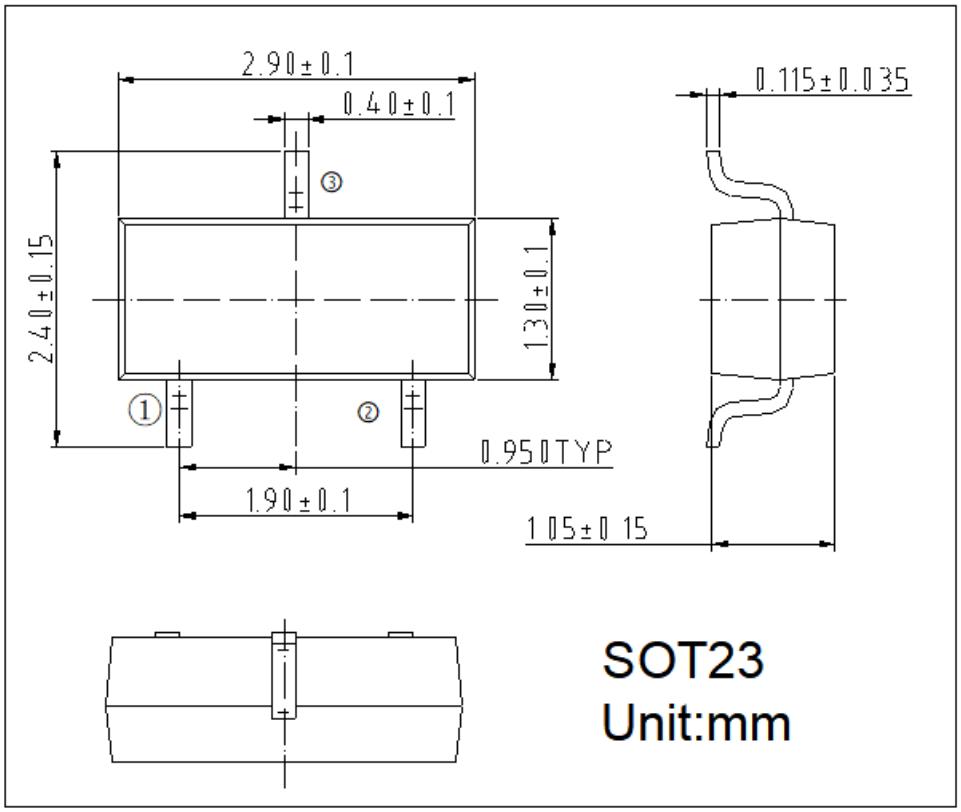


Safe Operating Area, Junction-to-Ambient



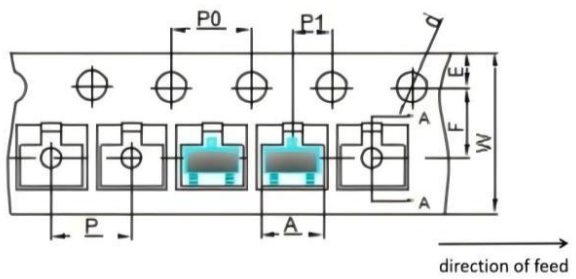
Normalized Thermal Transient Impedance, Junction-to-Ambient

➢ Package Information



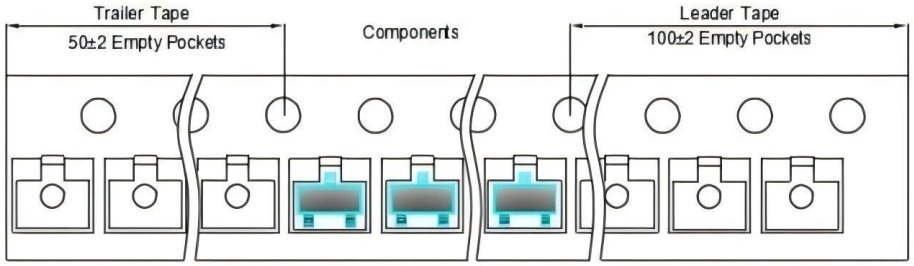
➢ SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape



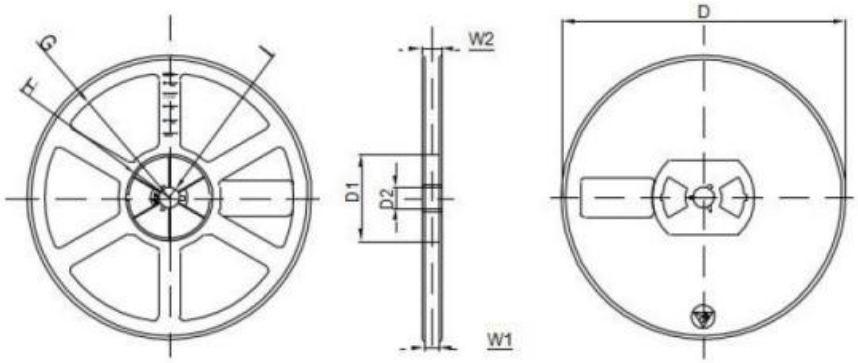
Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15±0.1	2.77±0.1	1.22±0.1	Ø1.50	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.1	2±0.05	8±0.1

SOT-23 Tape Leader and Trailer



SOT23 带尾(空封 40 格)、带头（空封 100 格）空封数

SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	Ø54±0.2	13.3±0.2	R79.00	R26.00	R6.50±0.2	9±0.5	12±0.5

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