SSC7002EGS6

N-Channel Small Switching MOSFET with ESD Protection

➢ Features

VDS	VGS	RDSON Typ.	ID	ESD
60V	±20V	2R@10V	0.3A	3kV
		3R@4V5		

➢ Description

This device is an N-Channel enhancement mode MOSFET, with low on-resistance, fast switching speed and low threshold voltage, it is ideal for portable equipment.

➢ Applications

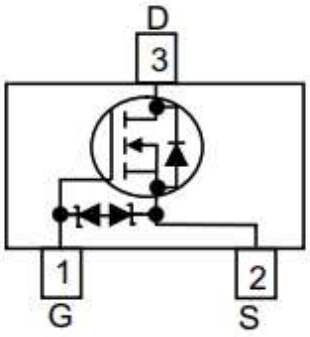
- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers
- Display, Memories, Transistors, etc.
- Battery Operated System
- Solid-State Relays

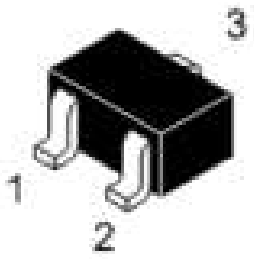
➢ Ordering Information

Device	Package	Shipping
SSC7002EGS6	SOT23	3000/Reel

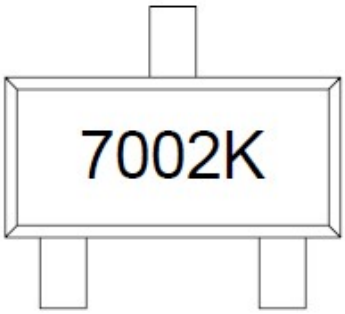
➢ Pin configuration

Top view





SOT23



Marking

➢ Absolute Maximum Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	60	V
V_{GSS}	Gate-to-Source Voltage	±20	V
I_D	Continuous Drain Current [a]	0.3	A
I_{DM}	Pulsed Drain Current [b]	0.8	A
P_D	Power Dissipation [c]	0.83	W
P_{DSM}	Power Dissipation [a]	0.35	W
T_J	Operation junction temperature	-55 to 150	℃
T_{STG}	Storage temperature range	-55 to 150	℃

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

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]		357	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		159	

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 current rating is based on the t≤ 10s thermal resistance rating.

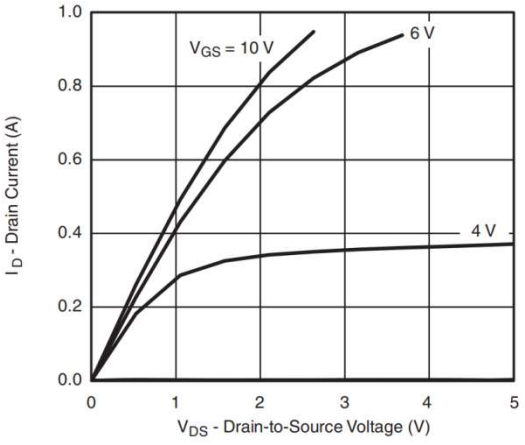
b. Repetitive rating, pulse width limited by junction temperature.

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.

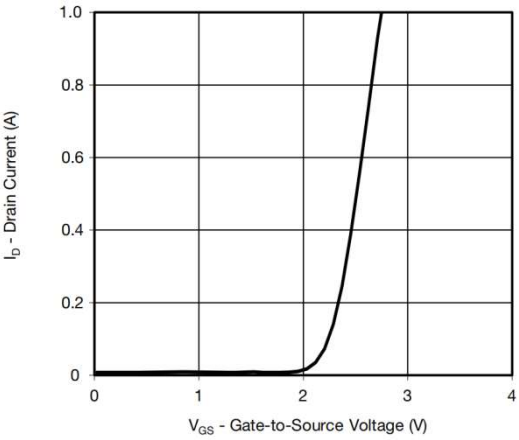
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V,ID=10uA	60			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS,ID=250uA	1		2.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=10V,ID=0.5A		2	6	R
		VGS=4.5V,ID=0.05A		3	8	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=60V,VGS=0V			1	uA
I_{GSS}	Gate-Source leak current	VGS=±20V,VDS=0V			±10	uA
G_{FS}	Transconductance	VDS=10V,ID=0.2A		0.08		S
V_{SD}	Forward Voltage	VGS=0V,IS=0.2A		0.7	1.3	V
Ciss	Input Capacitance	VDS=25V, VGS=0V, f=1MHZ		32		pF
Coss	Output Capacitance			7		
Crss	Reverse Transfer Capacitance			3		
$T_{D(ON)}$	Turn-on delay time	VGS=10V, VDS=20V, RG=20R, RL=60R		4.2		ns
Tr	Rise Time			3.8		
$T_{D(OFF)}$	Turn-off delay time			22		
Tf	Fall Time			14		
Q_G	Total Gate Charge	VGS=10V, VDS=15V, ID=0.2A		0.4		nC
Q_{GS}	Gate Source Charge			0.1		
Q_{GD}	Gate Drain Charge			0.11		

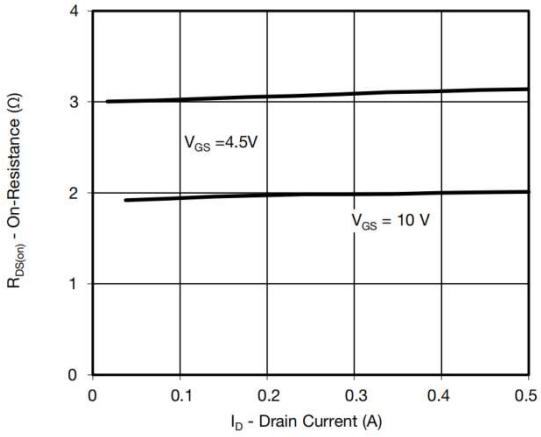
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



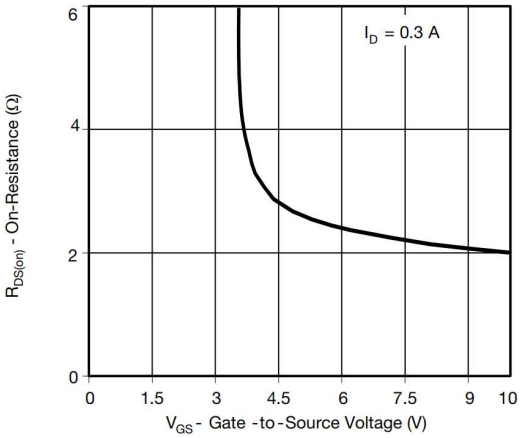
Output Characteristics



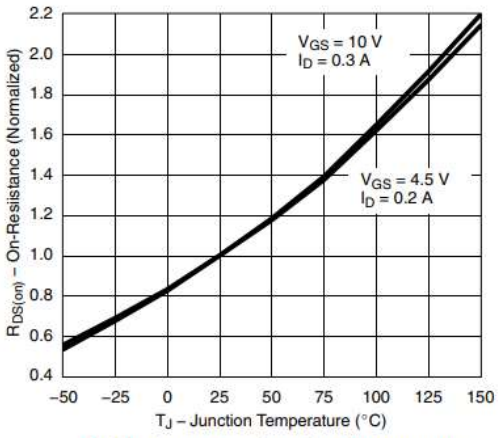
Transfer Characteristics



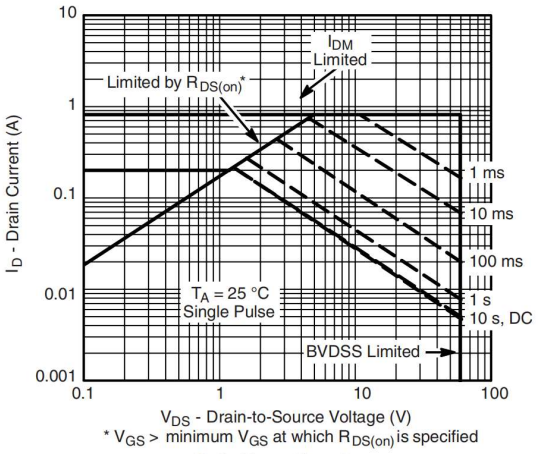
On-Resistance vs. Drain Current



On-Resistance vs. Gate-to-Source Voltage

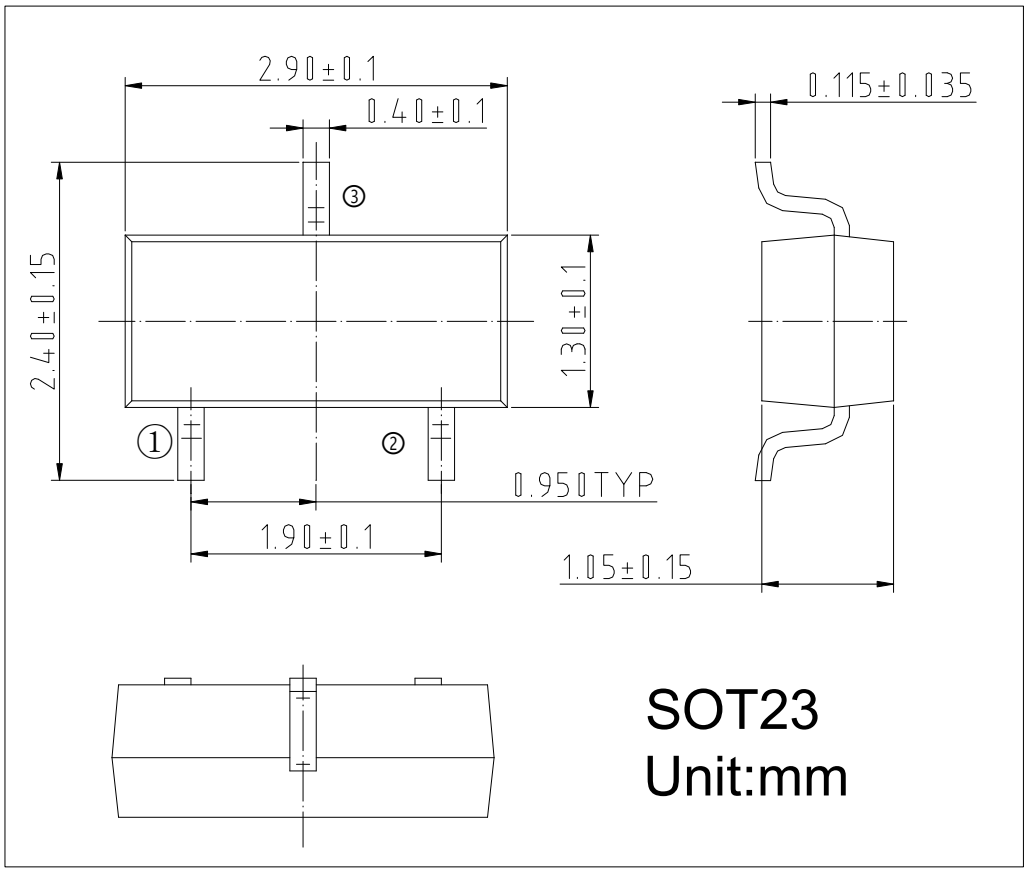


On-Resistance vs. Junction Temperature



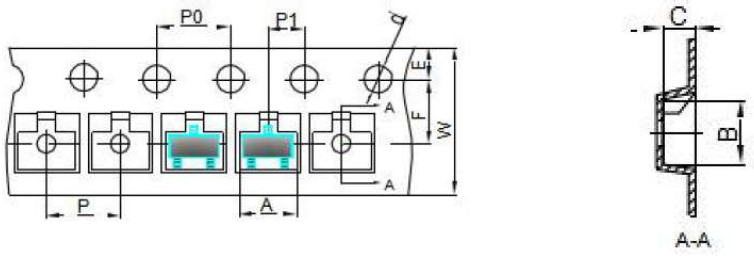
Safe Operating Area

➢ Package Information



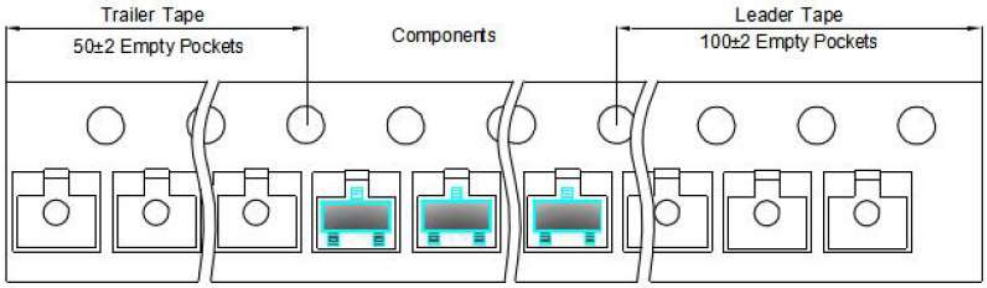
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape



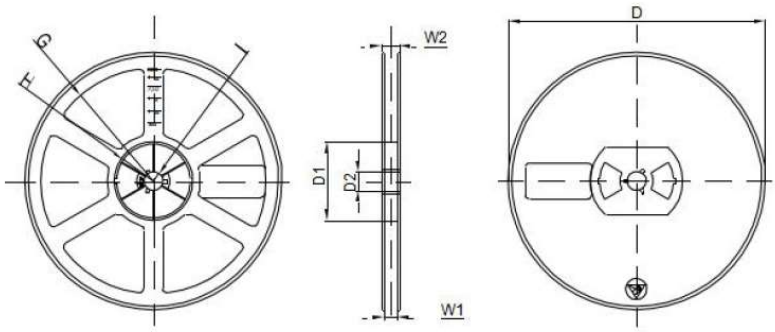
Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15±0.1	2.77±0.1	1.22±0.1	Ø1.50	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.1	2±0.05	8±0.1

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

➢ History Version

V1.0	Product Release	
V2.0	Update POD and Tape&Reel	2020-08-28
V3.0	Update Curve	2021-08-31

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