



SSC8160GS6

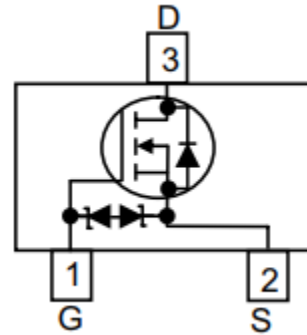
N-Channel Small Switching MOSFET with ESD Protection

➤ **Features**

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

➤ **Pin configuration**

Top view

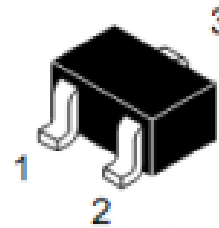


➤ **Description**

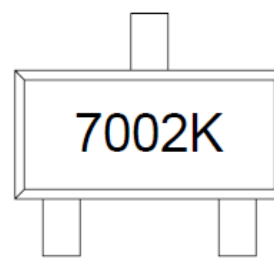
This device is an N-Channel enhancement mode MOSFET, with low on-resistance, fast switching speed and low threshold voltage, it is ideal for portable equipment.

➤ **Applications**

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



SOT23



Marking

➤ **Ordering Information**

Device	Package	Shipping
SSC8160GS6	SOT23	3000/Reel



➤ **Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ 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	$^{\circ}\text{C}$
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		357	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		159	

Note:

- 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 is specific board design. The current rating is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P_D is based on $T_{J(MAX)}=150^{\circ}\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

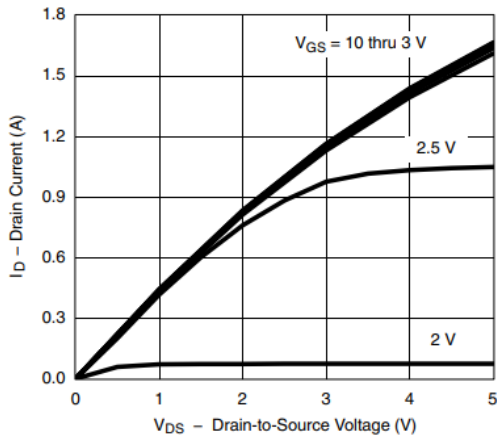


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

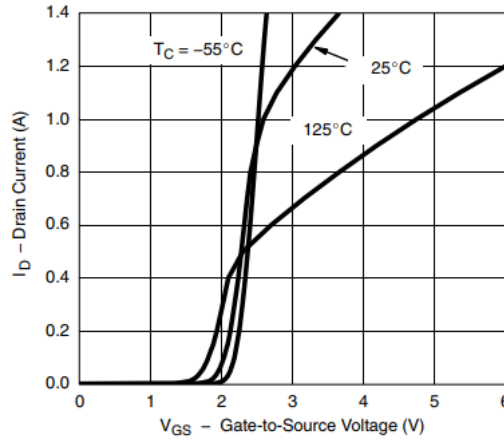
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2.5	V
$R_{DS(on)}$	Drain-Source On- Resistance	$V_{GS}=10V, I_D=0.5A$		2	6.6	R
		$V_{GS}=4.5V, I_D=0.05A$		3	8	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$			1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 10	μA
G_{FS}	Transconductance	$V_{DS}=10V, I_D=0.2A$		80		mS
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=0.2A$		0.7	1.3	V
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		32		pF
C_{oss}	Output Capacitance			7		
C_{rss}	Reverse Transfer Capacitance			3		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=10V,$ $V_{DS}=20V, R_G=20R,$ $R_L=60R$		4.2		ns
T_r	Rise Time			3.8		
$T_{D(OFF)}$	Turn-off delay time			22		
T_f	Fall Time			14		
Q_G	Total Gate Charge	$V_{GS}=10V, V_{DS}=15V, I_D=0.2A$		0.4		nC
Q_{GS}	Gate Source Charge			0.1		
Q_{GD}	Gate Drain Charge			0.11		



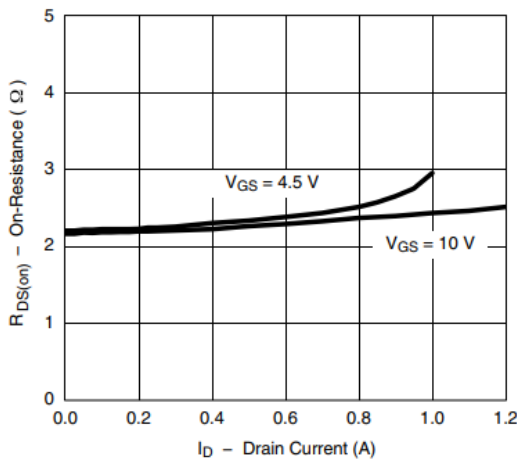
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



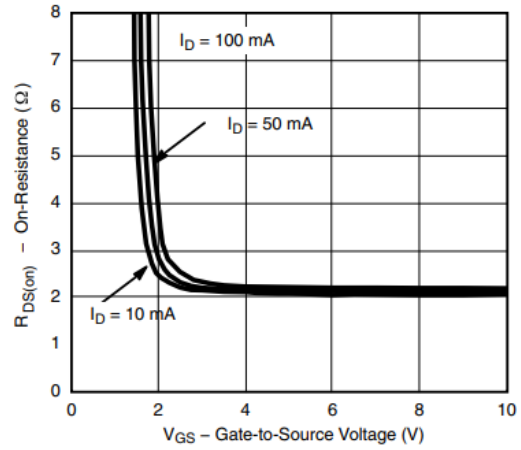
Output Characteristics



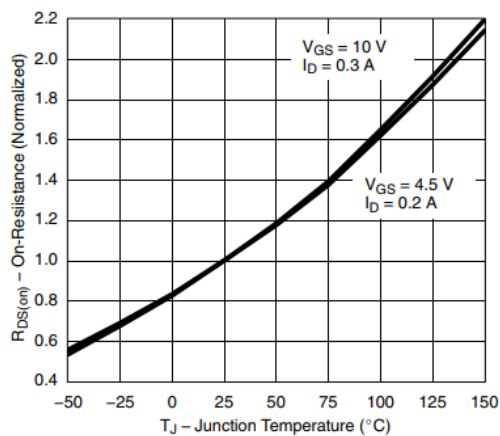
Transfer Characteristics



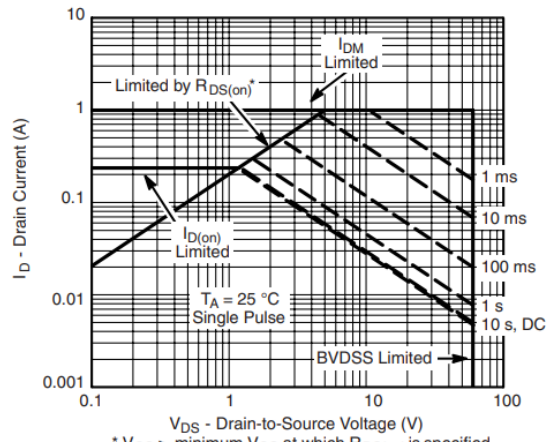
On-Resistance vs. Drain Current



On-Resistance vs. Gate-to-Source Voltage

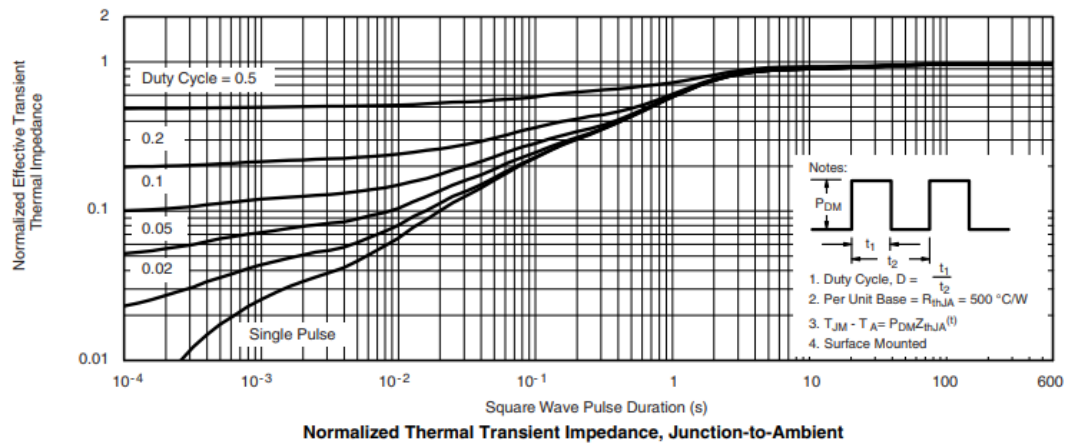


On-Resistance vs. Junction Temperature



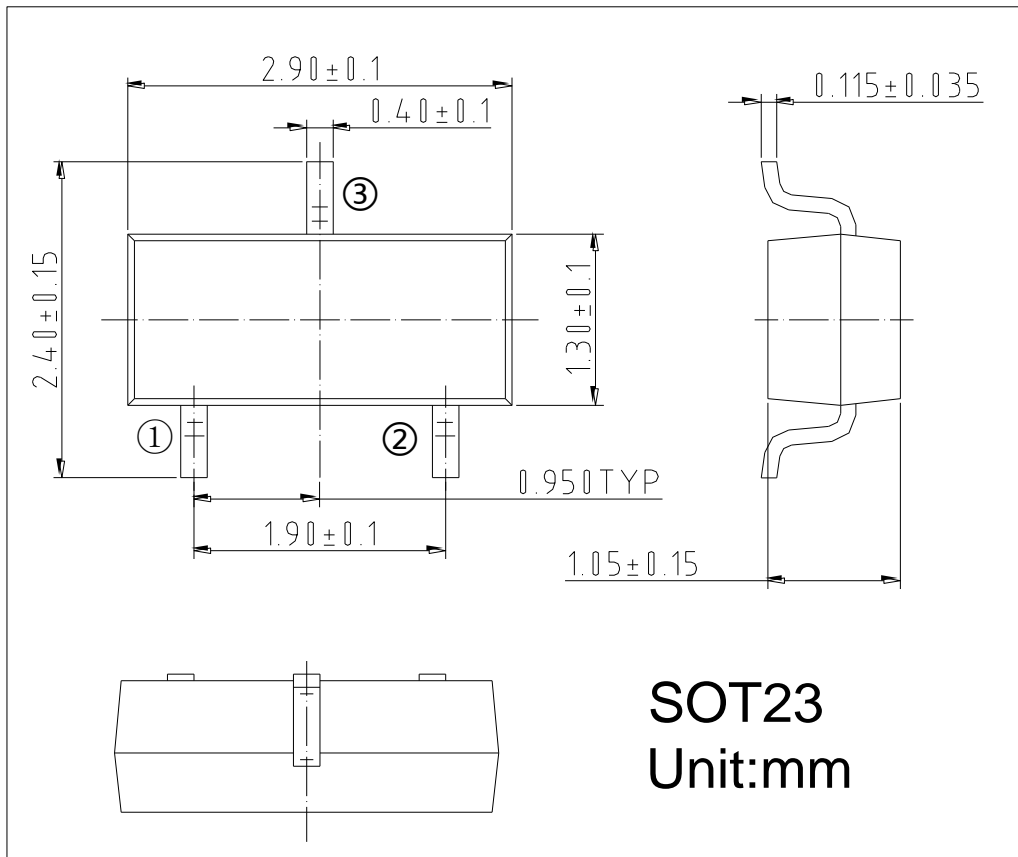
* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area





➤ Package Information



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