



SSC8164GS9

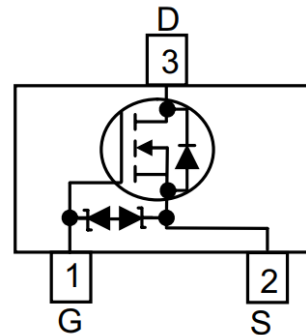
N-Channel Enhancement Mode MOSFET with ESD Protection

➤ Features

VDS	VGS	RDSON Typ.	ID	ESD
60V	±20V	1R@10V	0.3A	500V
		1.25R@4V5		

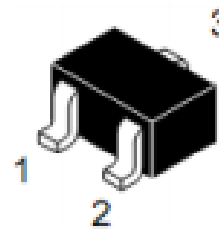
➤ Pin configuration

Top view



➤ Description

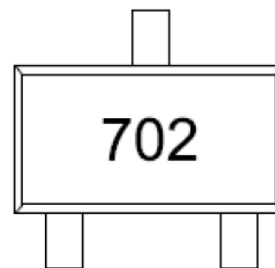
This device is a N-Channel enhancement mode MOSFET, with low on-resistance, fast switching speed and low threshold voltage, it is ideal for portable equipment.



SOT723

➤ Applications

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



Marking

➤ Ordering Information

Device	Package	Shipping
SSC8164GS9	SOT723	8000/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	0.5	W
P_{DSM}	Power Dissipation ^a	0.25	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		510	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		255	

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.

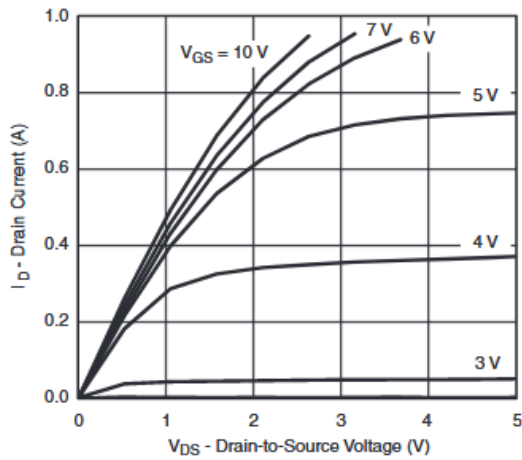


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

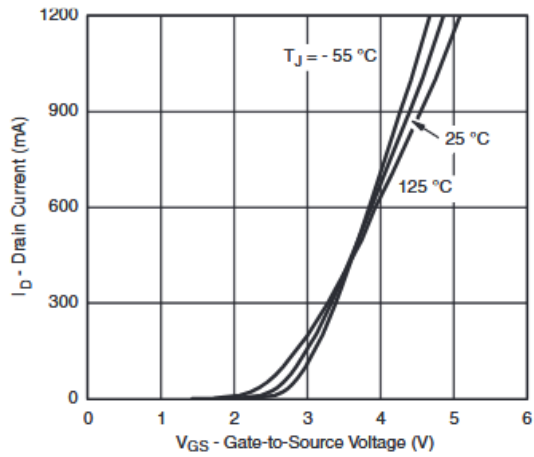
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.75	1	1.25	V
$R_{DS(on)}$	Drain-Source On- Resistance	$V_{GS}=10V, I_D=0.5A$		1	2.5	R
		$V_{GS}=4.5V, I_D=0.5A$		1.25	3.5	
		$V_{GS}=2.5V, I_D=0.2A$		1.7	4	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$			1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 15V, V_{DS}=0V$			± 10	μA
G_{FS}	Transconductance	$V_{DS}=10V, I_D=0.2A$		0.1		S
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=0.2A$			1.3	V
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		30		pF
C_{oss}	Output Capacitance			6		
C_{rss}	Reverse Transfer Capacitance			2.9		
$T_{D(ON)}$	Turn-on delay time			25		
T_r	Rise Time	$V_{GS}=10V,$ $V_{DS}=10V, I_D=100mA$		10		ns
$T_{D(OFF)}$	Turn-off delay time			35		
T_f	Fall Time			20		
Q_G	Total Gate Charge			0.4		
Q_{GS}	Gate Source Charge	$V_{GS}=10V, V_{DS}=15V, I_D=0.2A$		0.1		nC
Q_{GD}	Gate Drain Charge			0.11		



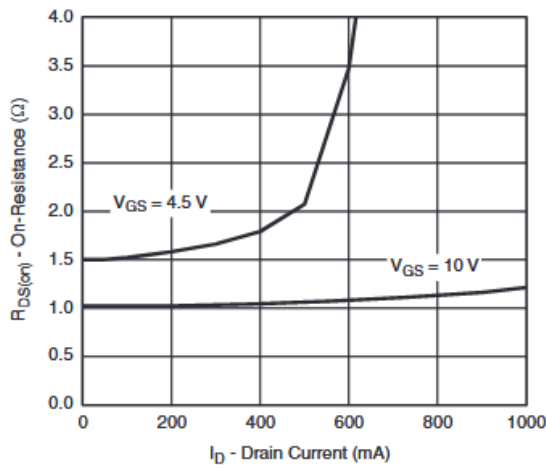
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



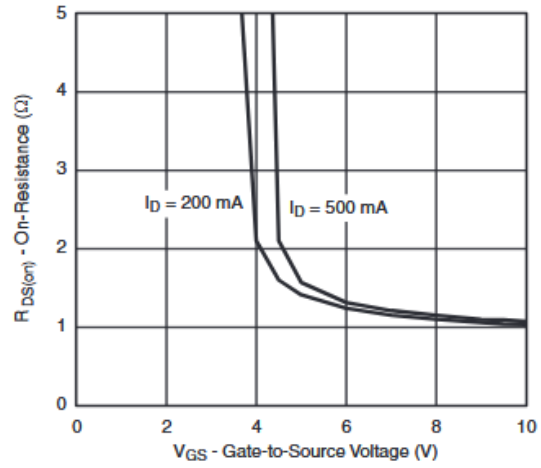
Output Characteristics



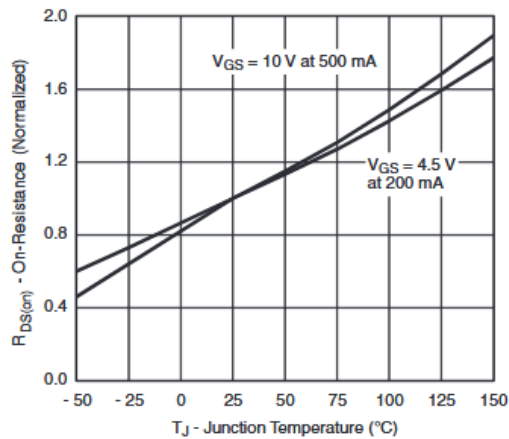
Transfer Characteristics



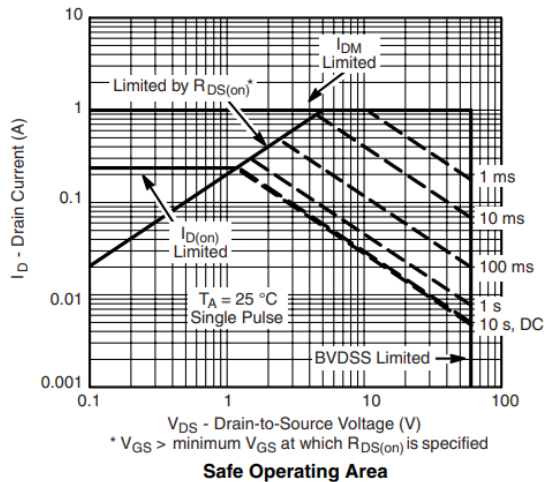
On-Resistance vs. Drain Current



On-Resistance vs. Gate-Source Voltage

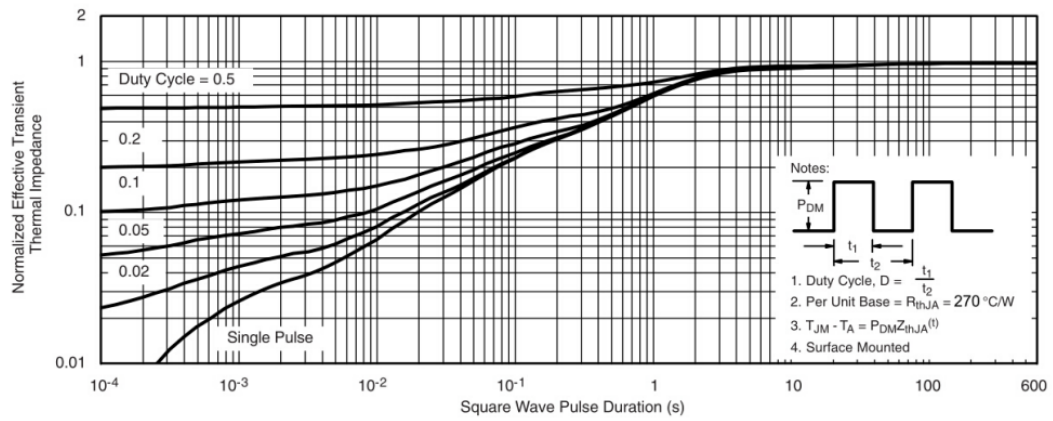


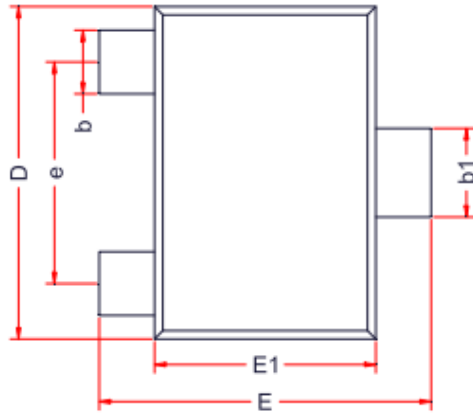
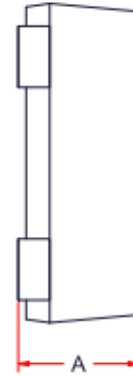
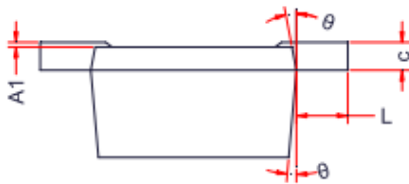
On-Resistance vs. Junction Temperature



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

Safe Operating Area



➤ Package Information
SOT-723

TOP VIEW

SIDE VIEW

SIDE VIEW

Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.43	-	0.55
A1	0.00	-	0.05
c	0.08	0.13	0.18
b1	0.27	-	0.37
b	0.17	-	0.27
L1	0.15	0.20	0.25
D	1.15	1.20	1.25
E	1.15	1.20	1.25
E1	0.75	0.80	0.85
e	0.80 Ref.		
θ	7 ° Ref.		



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