

N-channel Small Switching MOSFET

- **Features**

VDS	VGS	RDSon TYP	ID	ESD
60V	±20V	2R@10V	300mA	3kV
		3R@4V5		

- **General Description**

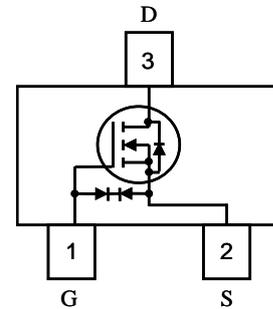
This device is an N-Channel enhancement mode MOSFET, with low on-resistance, fast switching speed and low threshold voltage (2V), it is ideal for portable equipment.

- **Applications**

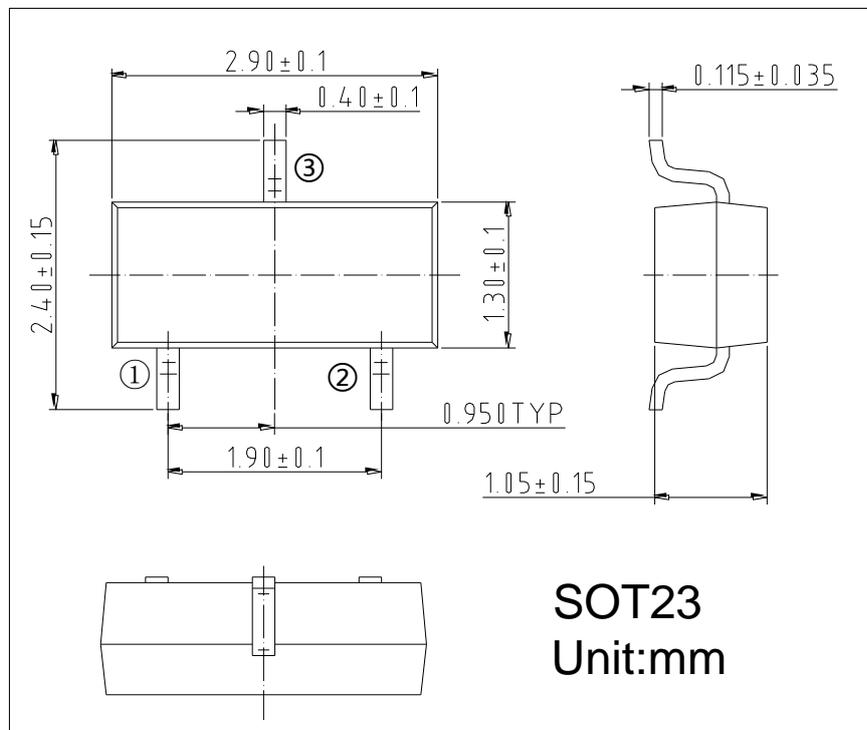
- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers,
- Display, Memories, Transistors, etc.
- Battery Operated Systems
- Solid-State Relays

- **Pin configuration**

Top View



- **Package Information**





SSC7002EGS6

● **Absolute Maximum Ratings @ TA = 25°C unless otherwise specified**

Parameter	Symbol	Ratings	Unit	
Drain-source voltage	V_{DSS}	60	V	
Gate-source voltage	V_{GSS}	± 20	V	
Drain current	- Continuous	I_D	300	mA
	- Pulse	I_{DM}	800	
Total power dissipation (Tc=25°C)	P_D^*1	350	mW	
Channel temperature	T_{CH}	-55 ~ +150	°C	
Storage temperature	T_{STG}	-55 ~ +150	°C	

Note1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inches. The rating is for each chip in the package.

● **Electrical Characteristics @ TA = 25°C unless otherwise specified**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	60	--	--	V
Drain Cut-off Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$	--	--	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	--	--	± 10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	--	2.5	V
Drain-Source On-state Resistance	$R_{DS(ON)}$	$I_D = 500mA, V_{GS} = 10V$	--	2	6.6	R
		$I_D = 50mA, V_{GS} = 4.5V$	--	3	8	
Forward Transconductance	G_{FS}	$V_{DS} = 10V, I_D = 200mA$	80	--	--	ms
Body Diode Forward Voltage	V_{SD}	$I_S = 200mA, V_{GS} = 0V$		0.7	1.3	V
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS} = 25V, V_{GS} = 0V$ $F = 1MHz$	--	32	--	μF
Output Capacitance	C_{OSS}		--	7	--	
Feedback Capacitance	C_{RSS}		--	3	--	
SWITCHING CHARACTERISTICS						
Turn-on Delay Time	$T_{D(ON)}$	$V_{GS} = 5V, I_D = 10mA$ $V_{DD} = 5V, R_L = 500R,$ $R_{GS} = 10R$	--	15	--	ns
Rise Time	T_R		--	35	--	
Turn-off Delay Time	$T_{D(OFF)}$		--	35	--	
Fall Time	T_F		--	35	--	

Note 2. Short duration test pulse used to minimize self-heating effect.

● Typical Performance Characteristics

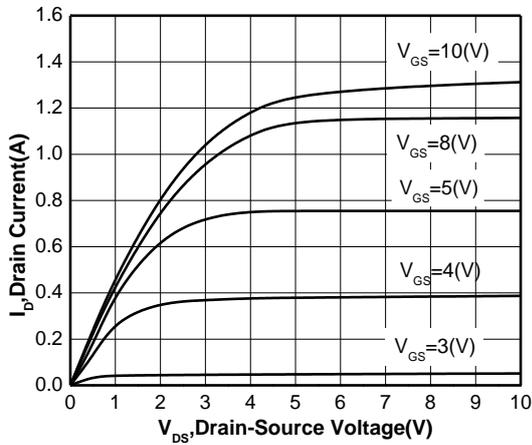


Figure 1. Output Characteristics

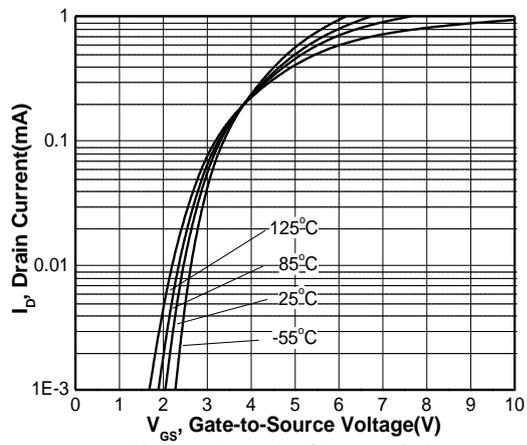


Figure 2. Transfer Characteristics

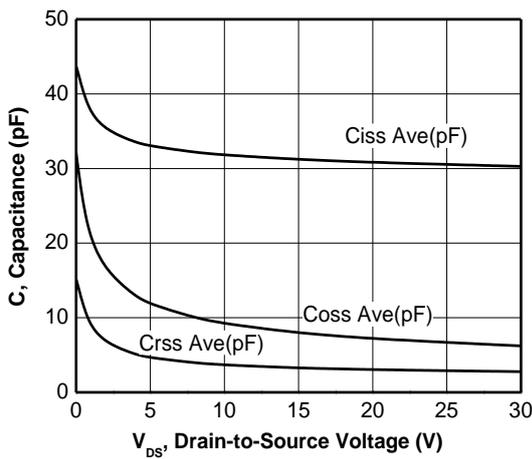


Figure 3. Capacitance

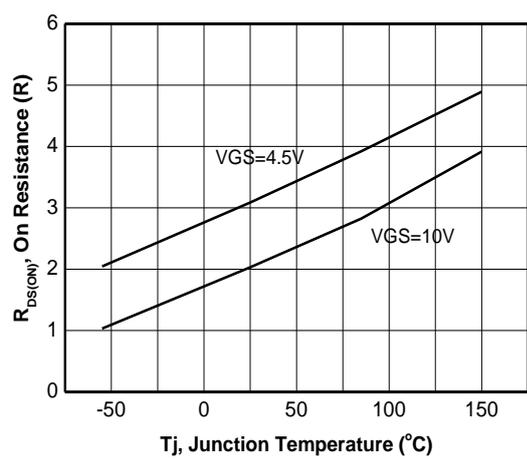


Figure 4. On Resistance Vs. Temperature

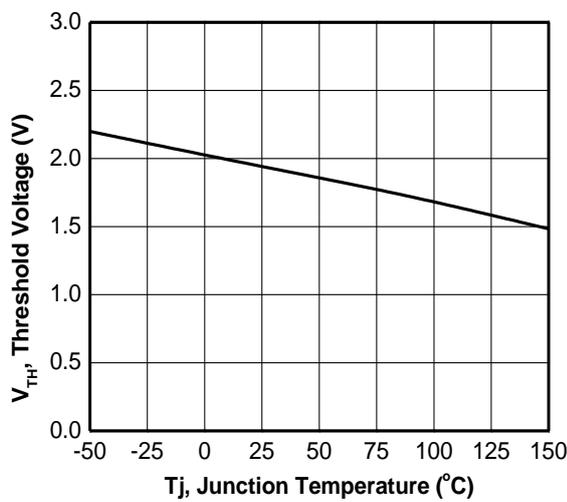


Figure 5. Gate Threshold Vs. Temperature

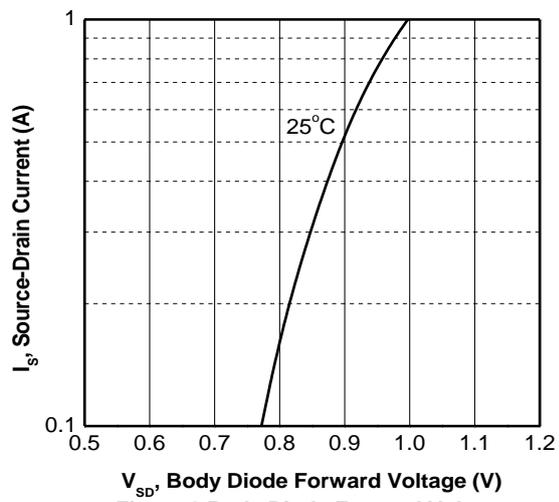


Figure 6. Body Diode Forward Voltage



SSC7002EGS6

DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G., OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.