



SSC8023GS6

P-Channel Enhancement Mode MOSFET

- **Features**

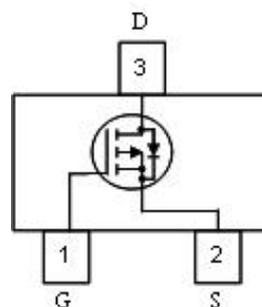
VDS	VGS	RDSon TYP	ID
-20V	±12V	60mR@-4V5	-3A
		75mR@-2V5	

- **Applications**

- Load Switch
- Portable Devices
- DCDC conversion

- **Pin configuration**

Top View

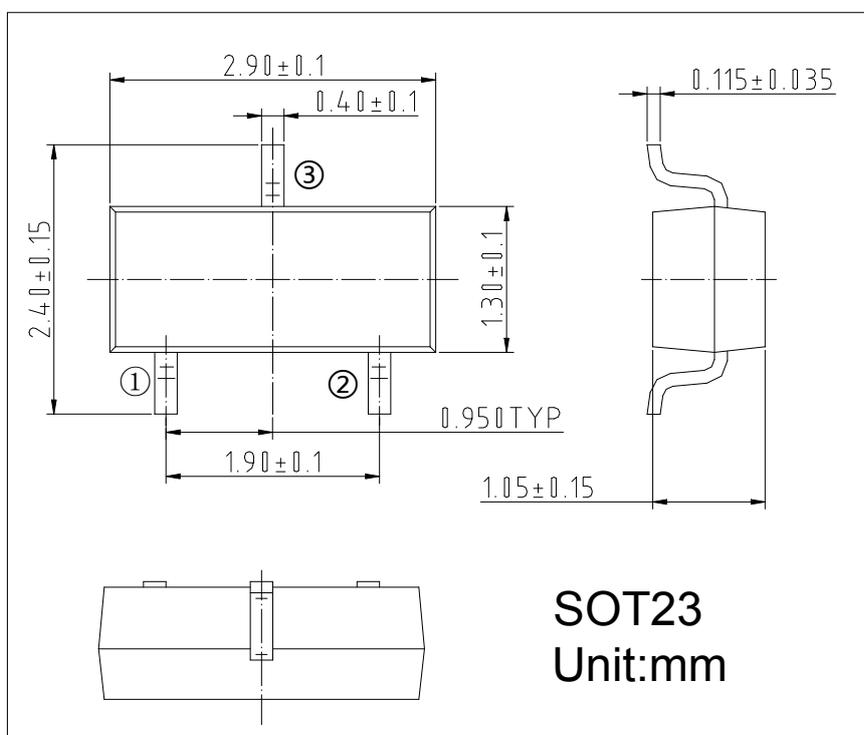


D: Drain; G: Gate; S: Source

- **General Description**

This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications 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.

- **Package Information**





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● **Absolute Maximum Ratings** @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	± 12	V
Drain Current (Continuous)		I_D	-3	A
Drain Current (Pulse)		I_{DM}	-20	A
Power Dissipation	25 $^{\circ}\text{C}$	P_{D25}	550	mW
	70 $^{\circ}\text{C}$	P_{D70}	350	
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^{\circ}\text{C}$

● **Electrical Characteristics** @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20	--	--	V
Drain Cut-off Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$	--	--	-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	--	--	± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	$I_D = -250\mu A, V_{DS} = V_{GS}$	-0.45	-0.75	-1.5	V
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -2.8A$	--	60	105	mR
		$V_{GS} = -2.5V, I_D = -2A$	--	75	200	mR
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -2.8A$	--	6.5	--	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	$V_{DS} = -6V, V_{GS} = 0V$ $f = 1\text{ MHz}$	--	415	--	pF
Output Capacitance	C_{oss}		--	223	--	pF
Feedback Capacitance	C_{rss}		--	87	--	pF
SWITCHING CHARACTERISTICS						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -6V, R_L = 6R, I_D = -1.0A,$	--	13	25	ns
Turn-off Delay Time	$t_{d(off)}$	$V_{GEN} = -4.5V, R_G = 6R$	--	42	70	ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Voltage	V_{SD}	$I_S = -1.6A, V_{GS} = 0V$	-0.5	--	-1.2	V

Notes:

1. Pulse width limited by maximum junction temperature.
2. Pulse test: $PW \leq 300\mu s$, duty cycle $\leq 2\%$.
3. For design AID only, not subject to production testing.
4. Switching time is essentially independent of operating temperature.



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Typical Performance Characteristics

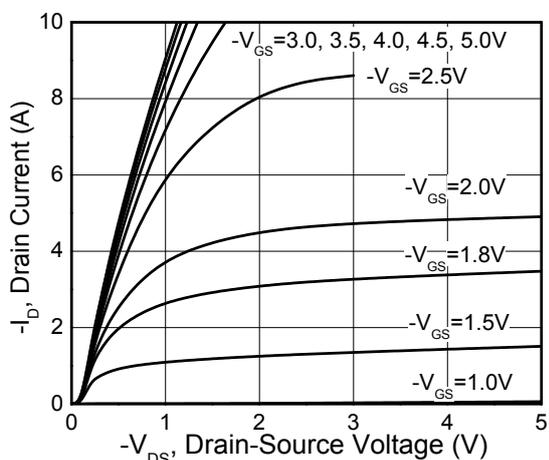


Figure 1. Output Characteristics

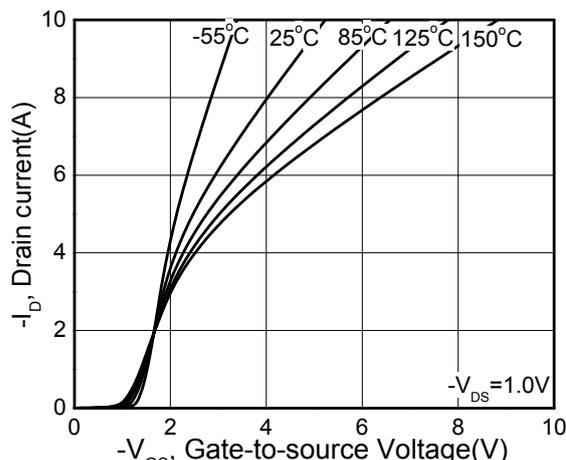


Figure 2. Transfer Characteristics

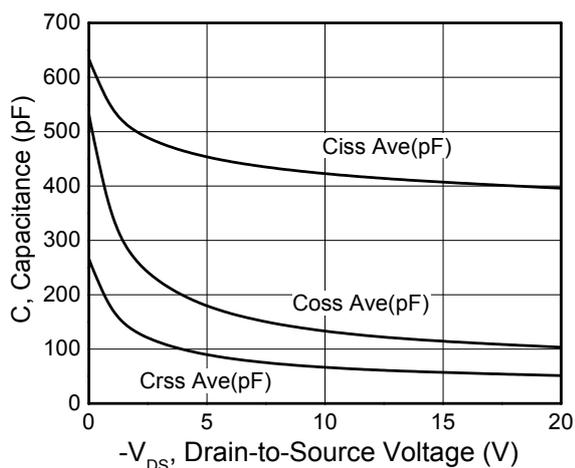


Figure 3. Capacitance

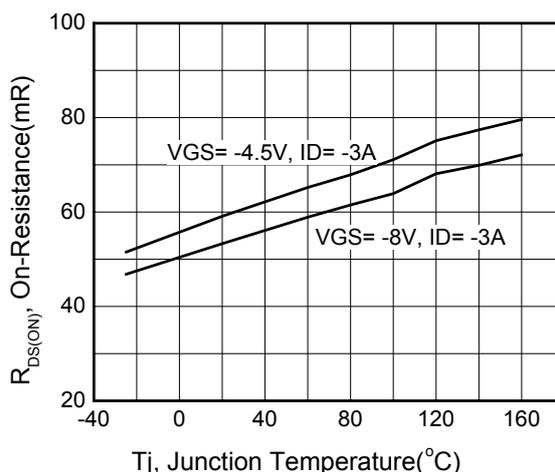


Fig 4. On-Resistance Temperature Coefficient

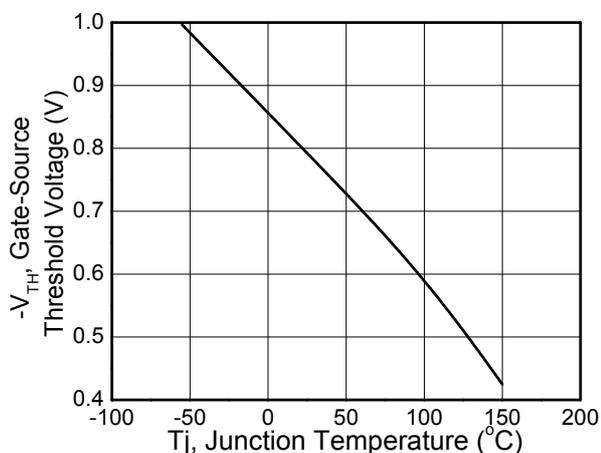


Figure 5. Gate Threshold Vs. Temperature

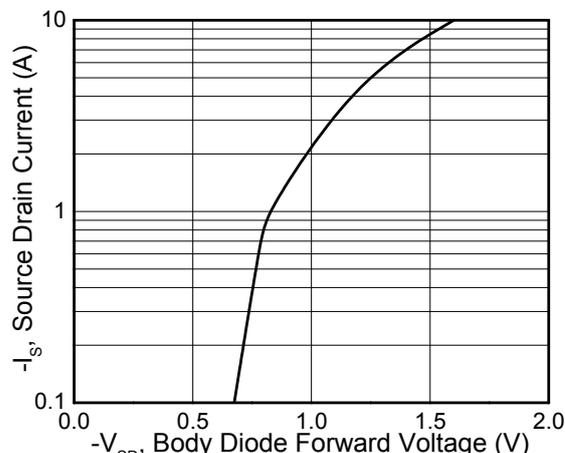


Figure 6. Body Diode Forward Voltage Vs. Source Current



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