



SSC8029GS6A

P-Channel Enhancement Mode MOSFET

● Features

VDS	VGS	RDSon TYP	ID
-20V	±12V	21mR@-4V5	-6.5A
		26mR@-2V5	
		35mR@-1V8	
		45mR@-1V5	

● Applications

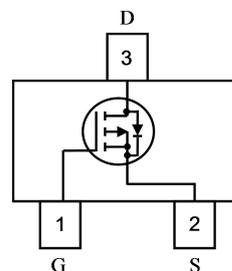
- Load Switch
- Portable Devices
- DCDC conversion
- Charging
- Driver for Relay, Solenoid, Motor, LED etc.

● General Description

This device is produced with high cell density DMOS trench technology, Uses advanced trench technology and design to provide excellent RDS (ON) with low gate charge. 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.

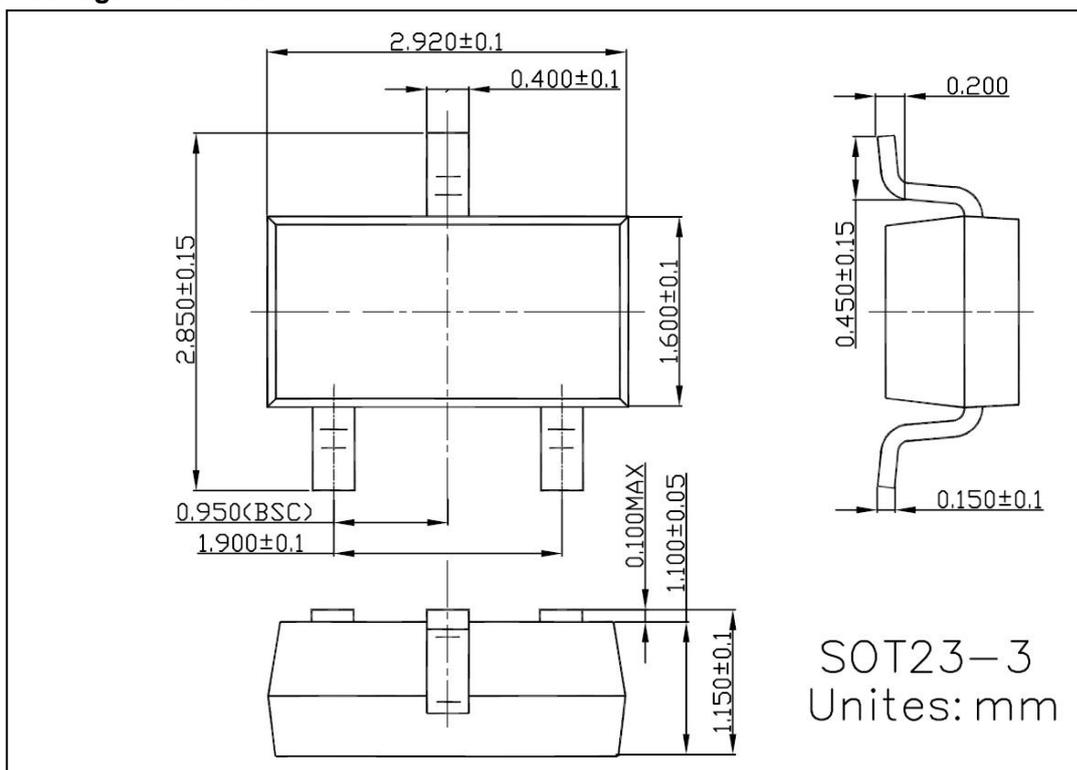
● Pin Configuration

Top View



D: Drain; G: Gate; S: Source

● Package Information





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

Parameter	Symbol	10S	Steady State	Unit	
Drain-Source Voltage	V_{DSS}		-20	V	
Gate-Source Voltage	V_{GSS}		± 12	V	
Drain Current (Continuous) ¹	25 $^{\circ}\text{C}$	I_{D25}	-6	-5	A
	70 $^{\circ}\text{C}$	I_{D70}	-5	-4	
Power Dissipation ¹	25 $^{\circ}\text{C}$	P_{D25}	1.2	1	W
	70 $^{\circ}\text{C}$	P_{D70}	1	0.85	
Drain Current (Pulse)	I_{DM}		-24	A	
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	-0.55	-0.80	V
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -5.5A$	--	21	29	mR
		$V_{GS} = -2.5V, I_D = -2.5A$		26	39	mR
		$V_{GS} = -4.5V, I_D = -1.8A$		35	60	mR
		$V_{GS} = -2.5V, I_D = -1.5A$	--	45	90	mR
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -5.5A$	--	23	--	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V$ $f = 1\text{ MHz}$	--	1970	--	pF
Output Capacitance	C_{oss}		--	205	--	pF
Feedback Capacitance	C_{rss}		--	195	--	pF
SWITCHING CHARACTERISTICS						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -10V, I_D = -6.5A, V_{GS} = -4.5V, R_G = 6R$	--	16		ns
Turn-off Delay Time	$t_{d(off)}$		--	78		ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Voltage	V_{SD}	$I_S = -1A, V_{GS} = 0V$		-0.75	-1.5	V

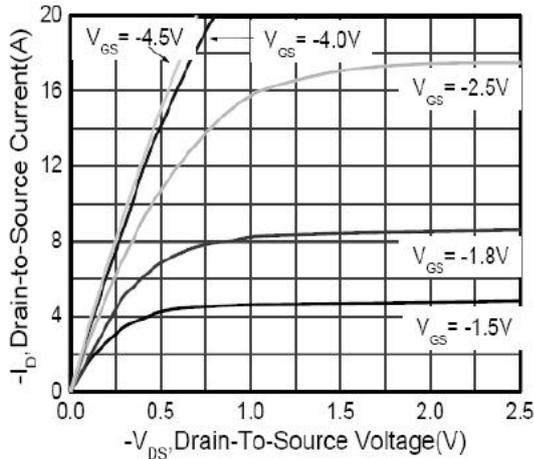
Notes:

- Surface mounted on FR-4 Board using 1 square inch pad size, 1oz copper
- Pulse width $\leq 380\mu s$, duty cycle $\leq 2\%$

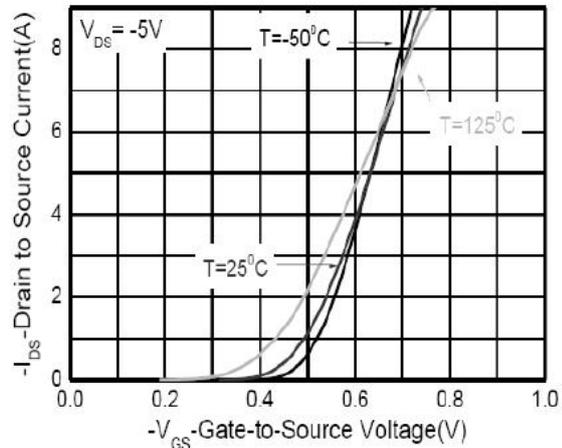


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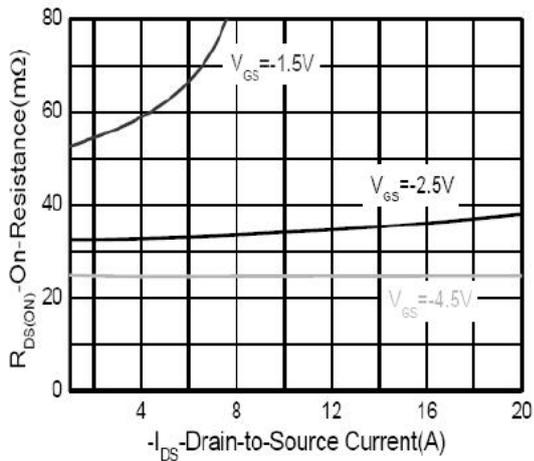
- Typical Performance Characteristics (Ta=25 C, unless otherwise noted)



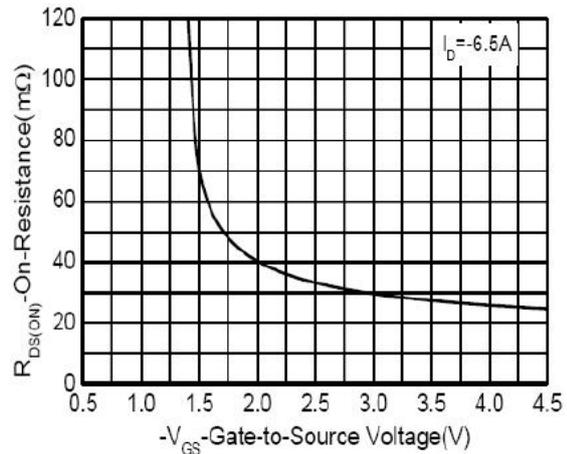
Output characteristics



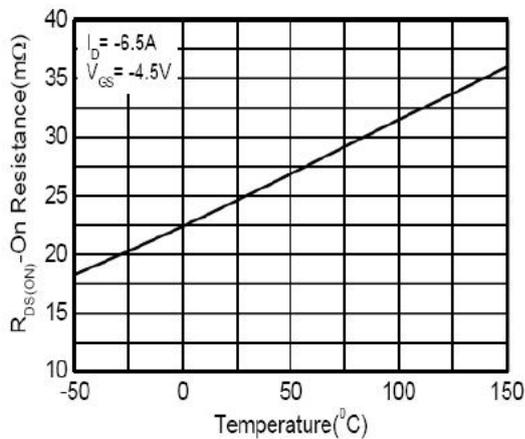
Transfer characteristics



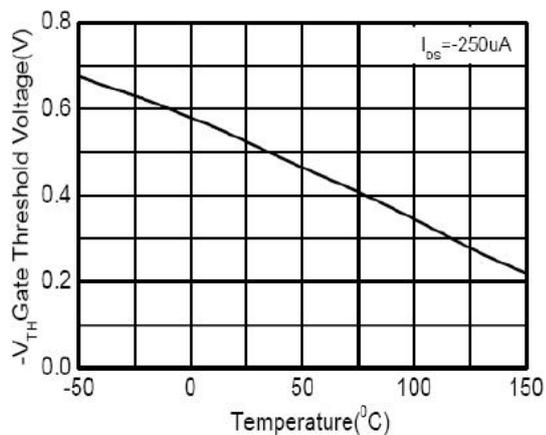
On-Resistance vs. Drain current



On-Resistance vs. Gate-to-Source voltage



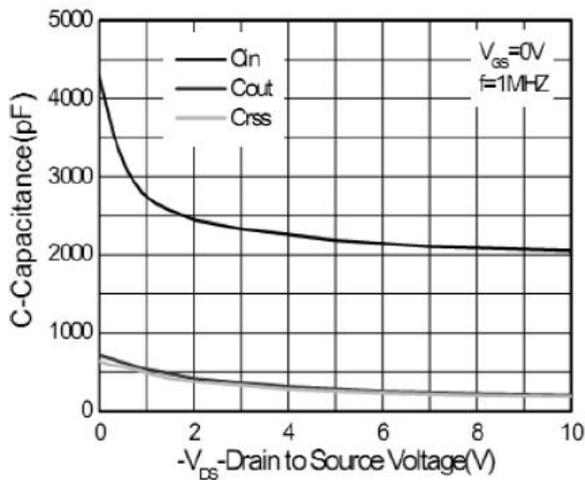
On-Resistance vs. Junction temperature



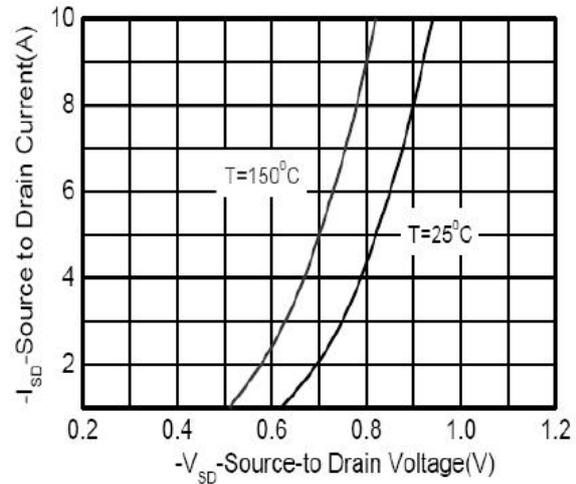
Threshold voltage vs. Temperature



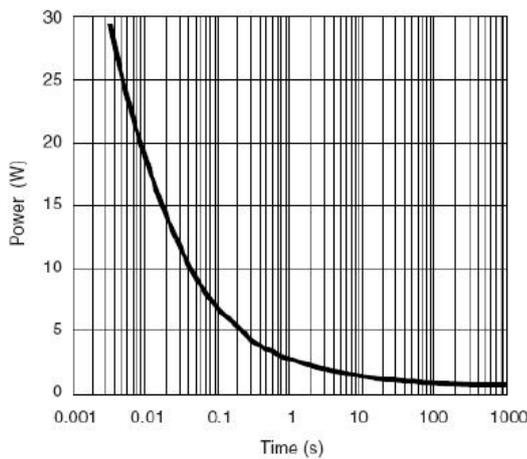
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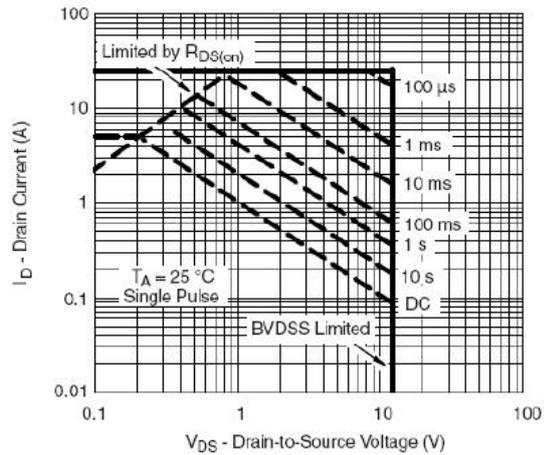
Capacitance



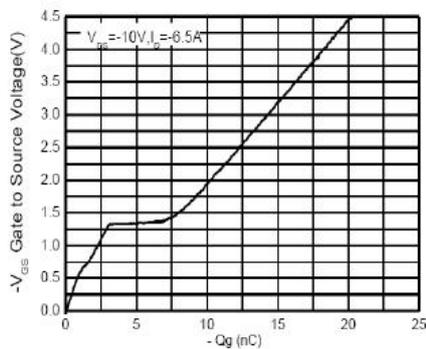
Body diode forward voltage



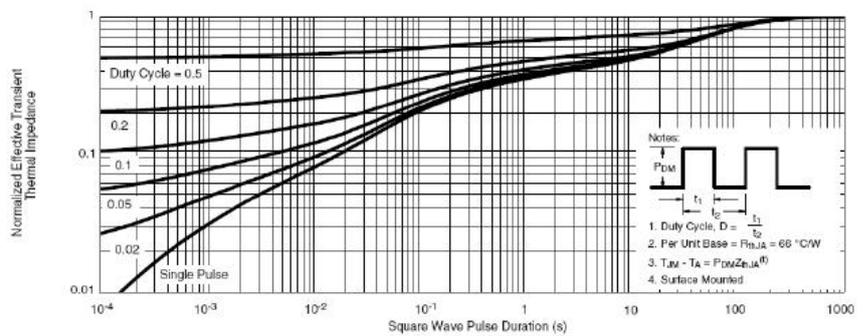
Single pulse power



Safe operating power



Gate Charge Characteristics



Transient thermal response (Junction-to-Ambient)



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