



SSC8039GT8

P-Channel Enhancement Mode MOSFET

- **Features**

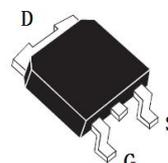
VDS	VGS	RDSon TYP	ID
-30V	±20V	15mR@-10V	-12A
		20mR@-4V5	

- **Applications**

- Load Switch
- DCDC conversion
- NB battery

- **Pin Configuration**

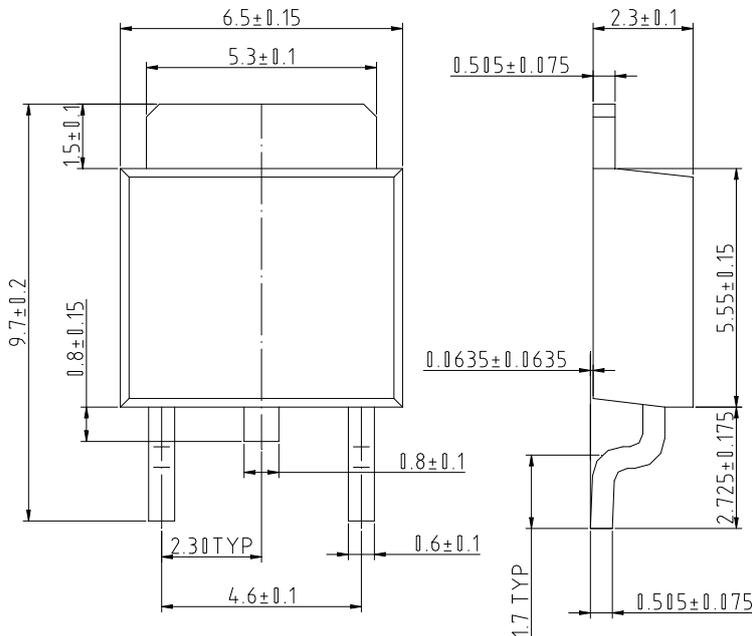
Top View



- **General Description**

This device is produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage power management requiring a wide range of given voltage ratings(4.5V~25V) such as load switch and battery protection.

- **Package Information**



TO-252

Units:mm



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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DSS}	-30	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current (Note 1)	Continuous $T_A=25^\circ\text{C}$	I_D	-12	A
	Pulsed (Note 2)	I_{DM}	-45	A
Total Power Dissipation (Note 1)		P_D	2.5	W
Operating and Storage Junction Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -250\ \mu\text{A}$	-30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}$	--	--	-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	--	--	± 100	nA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-1	-1.3	-3	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = -10\text{V}, I_D = -10\text{A}$	--	15	20	mR
		$V_{GS} = -4.5\text{V}, I_D = -7\text{A}$	--	20	35	
Forward Transconductance	G_{FS}	$V_{DS} = -5\text{ V}, I_D = -10\text{ A}$	--	18	--	S
Input Capacitance	C_{ISS}	$V_{DS} = 20\text{V}, V_{GS} = 0\text{V},$ $f = 1\text{MHz}$	--	2000	--	pF
Output Capacitance	C_{OSS}		--	550	--	
Reverse Transfer Capacitance	C_{RSS}		--	800	--	
Turn-On Delay Time	$T_{D(ON)}$	$V_{GS} = -10\text{V}, V_{DS} = -15\text{V},$ $RL = 1.5\text{R}, R_{GEN} = 3\text{R}$	--	8.6	--	nS
Turn-Off Delay Time	$T_{D(OFF)}$		--	39	--	
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{ V}, I_S = -1\text{ A}$	--	-0.75	-1.2	V

Note: 1. The value of P_D is measured with the device mounted on 1 in^2 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's specific board design. The current rating is based on the DC thermal resistance rating.

2. Repetitive rating, pulse width limited by junction temperature.

● T Typical Performance Characteristics

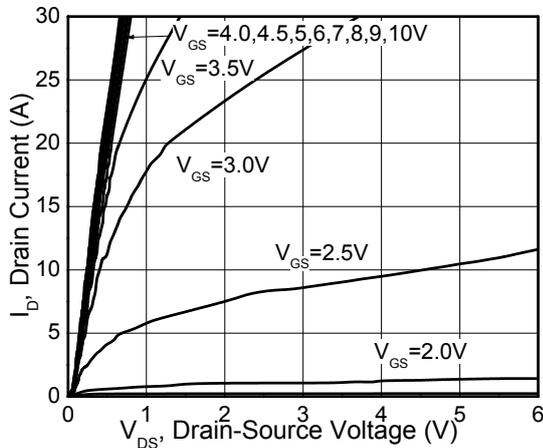


Fig1. Drain current vs Drain voltage

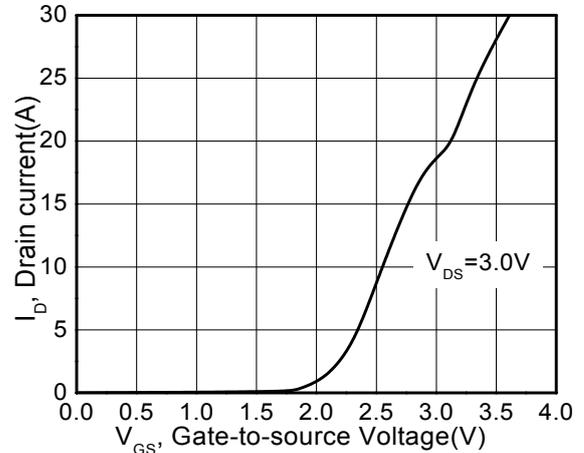


Fig2. Transfer Characteristics

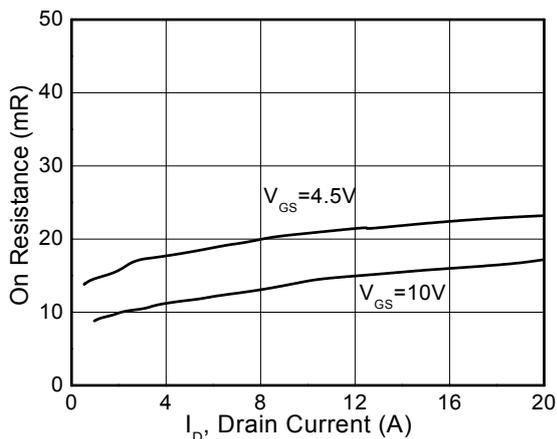


Fig3. On-resistance vs. I_D

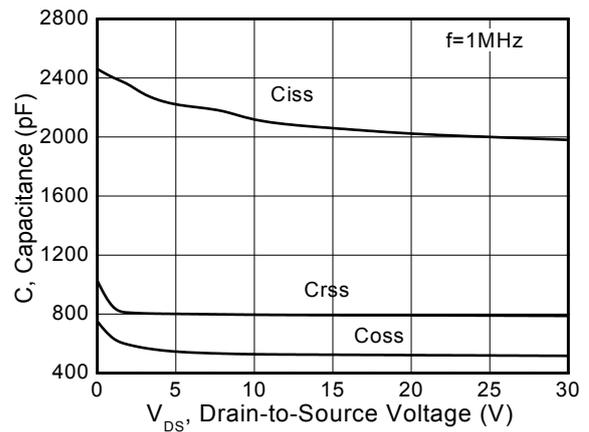


Fig4. Capacitance vs. V_{DS}

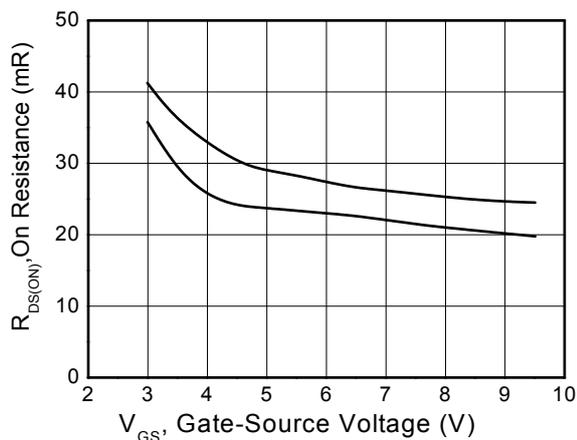


Fig5. On-resistance vs. Gate-Source Voltage

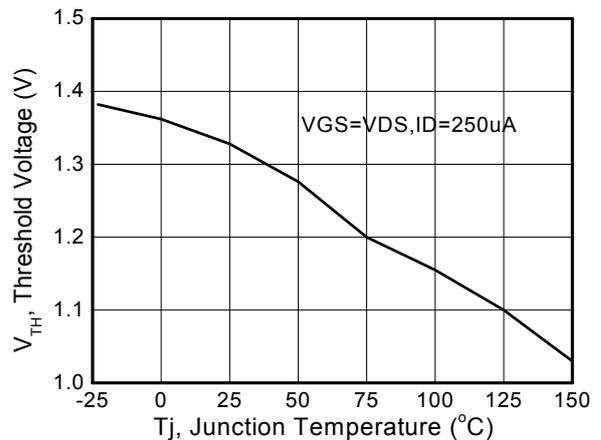


Figure6. Threshold vs Temperature



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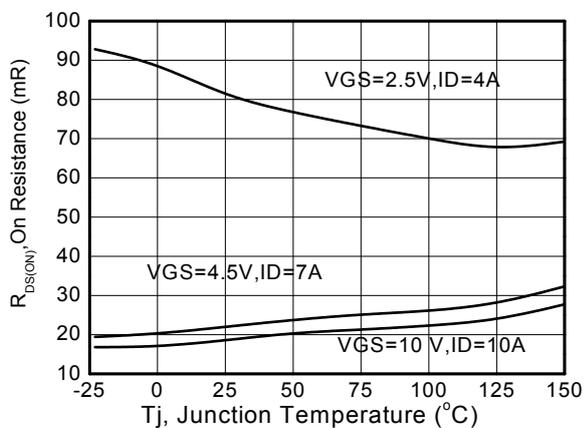


Fig7. On-resistance vs. Temperature

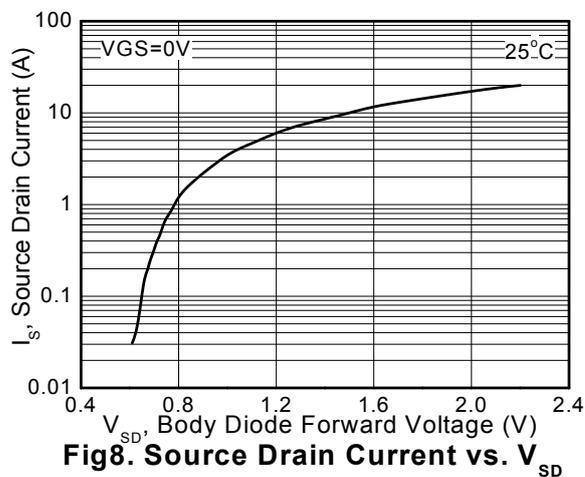


Fig8. Source Drain Current vs. V_{SD}



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