

N-Channel Enhancement Mode MOSFET

Features

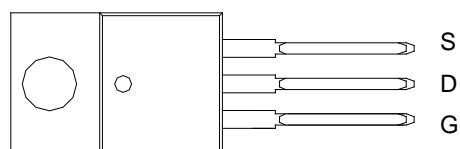
VDS	VGS	RDSon TYP	ID
25V	±20V	4.8mR@10V	55A
		6mR@4V5	

Applications

- Desktop Computer
- Notebook

Pin configuration

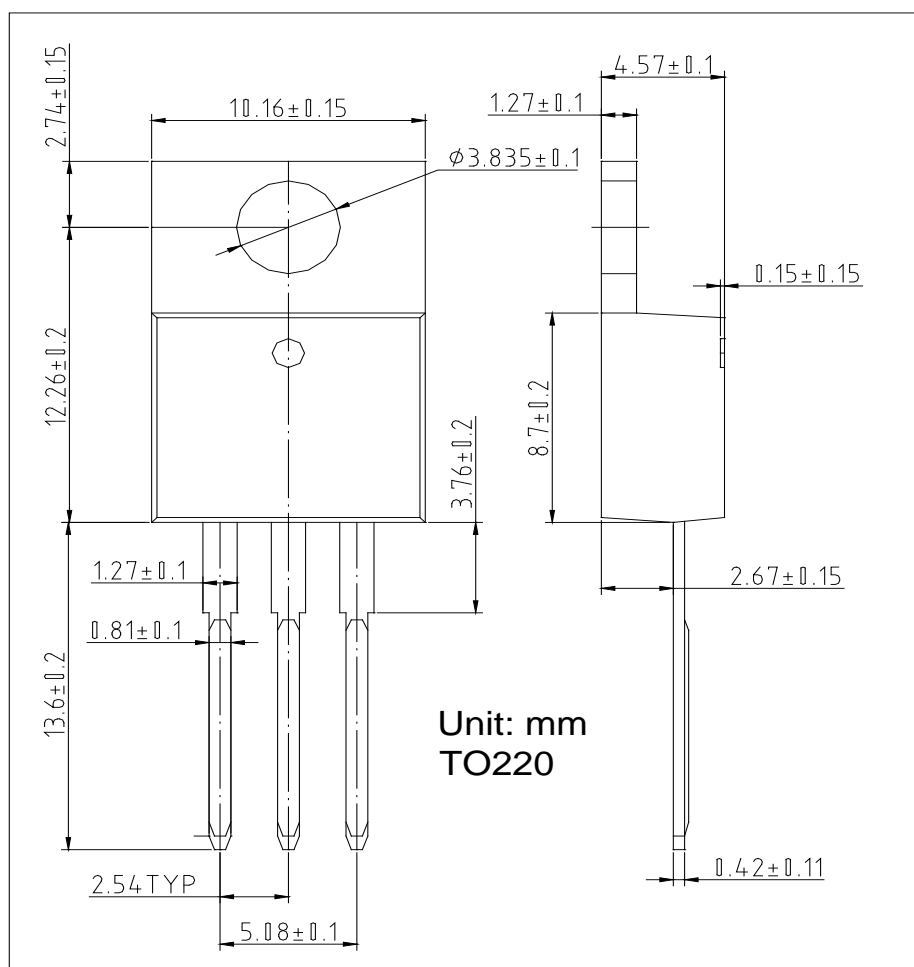
Top View



General Description

This device uses advanced trench technology to provide excellent RDS(ON) and low gate charge. This device is suitable for use as a load switch or in PWM applications.

Package Information





SSC8138GT4

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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DSS}	25	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current (Note 1)	Continuous $T_A=25^\circ\text{C}$	I_D	127	A
	Pulsed (Note 2)	I_{DM}	500	A
Total Power Dissipation (Note 1)		$T_C=25^\circ\text{C}$	300	W
		$T_C=25^\circ\text{C}$	150	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	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$	25	--	--	V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	1.3	1.8	3.0	V
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	--	--	± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24\text{ V}, V_{GS} = 0\text{ V}$	--	--	1	μA
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{ V}, I_D = 30\text{ A}$	--	4.8	6.0	mR
		$V_{GS} = 4.5\text{ V}, I_D = 30\text{ A}$	--	6.0	9.0	
Forward Transconductance	G_{FS}	$V_{DS} = 5\text{ V}, I_D = 5\text{ A}$	--	7.3	--	S
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{ V}, I_S = 10\text{ A}$	--	0.86	1.3	V
Input Capacitance	C_{ISS}	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$	--	2650	--	pF
Output Capacitance	C_{OSS}		--	910	--	
Reverse Transfer Capacitance	C_{RSS}		--	774	--	
Turn-On Delay Time	$T_{D(ON)}$	$V_{DS} = 15\text{ V}, R_L = 15\text{ R},$ $I_{DS} = 1\text{ A},$ $V_{GS} = 10\text{ V}, R_{GEN} = 6\text{ R}$	--	18		nS
Turn-Off Delay Time	$T_{D(OFF)}$		--	61		

Notes:

1. DUT is mounted on a 1in² FR-4 board with 2oz. Copper in a still air environment at 25°C, the current rating is based on the DC (<10s) test conditions.
2. Repetitive rating, pulse width limited by junction temperature. 300us Pulse Drain Current Tested.
3. Current limited by bond wire.

Typical Performance Characteristics

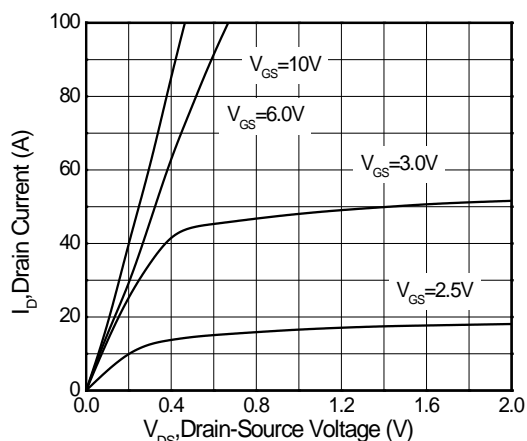


Fig1. Drain-Source Voltage vs. Drain Current

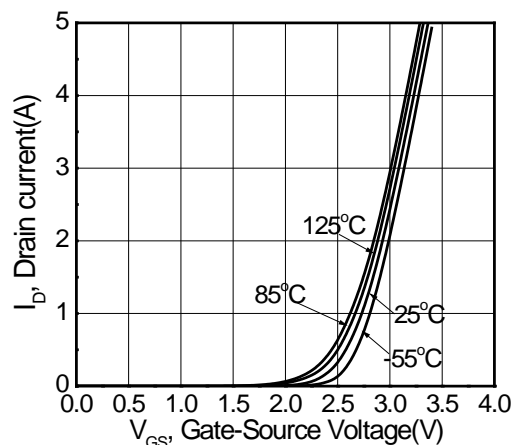


Fig2. Transfer Characteristics

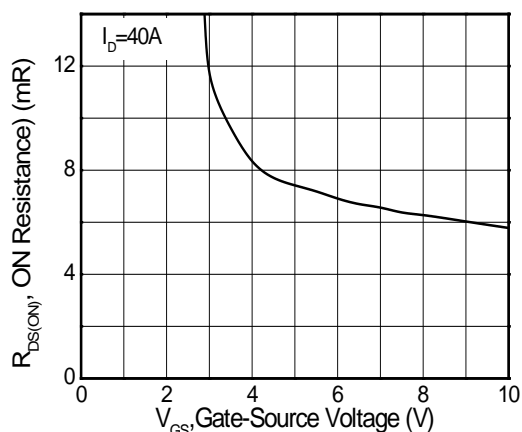


Fig3. Gate-Source Voltage vs. On-Resistance

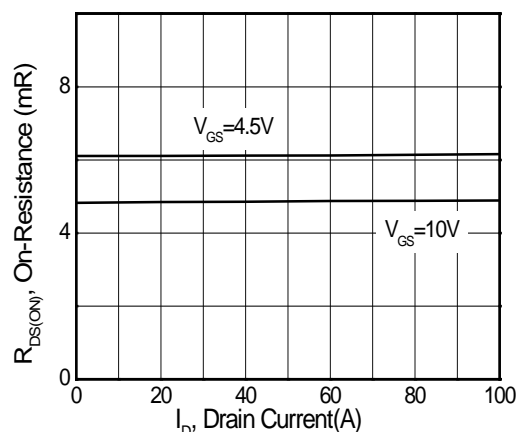


Fig4. Drain Current vs. On-Resistance

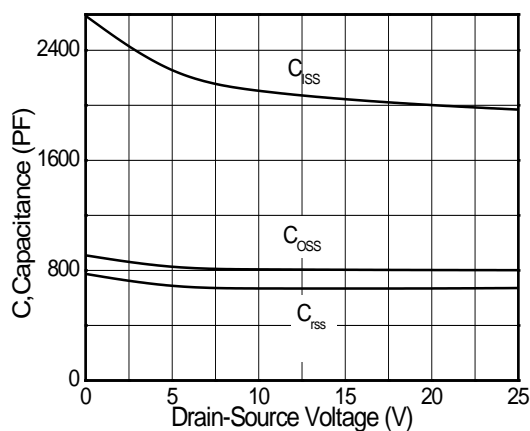


Fig5. Drain-Source Voltage vs. Capacitance

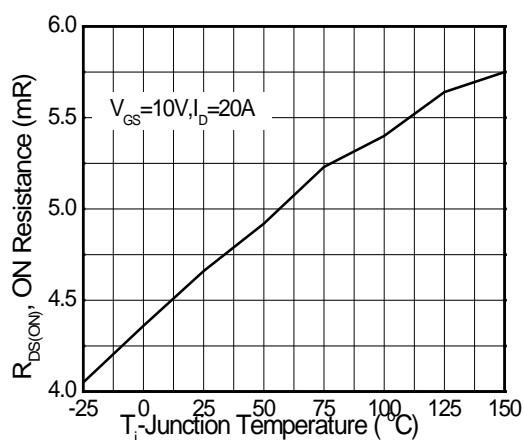


Fig6. Junction Temperature vs. On-Resistance

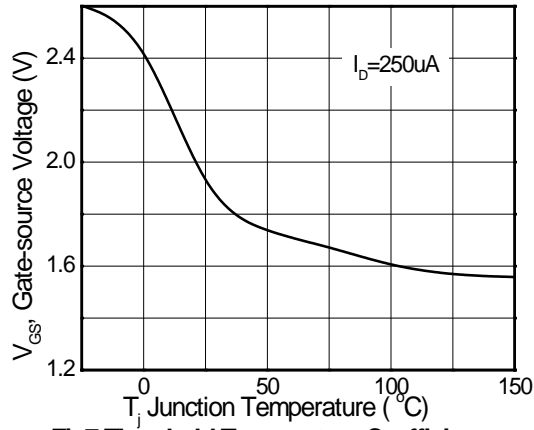


Fig7.Threshold Temperature Coefficiency

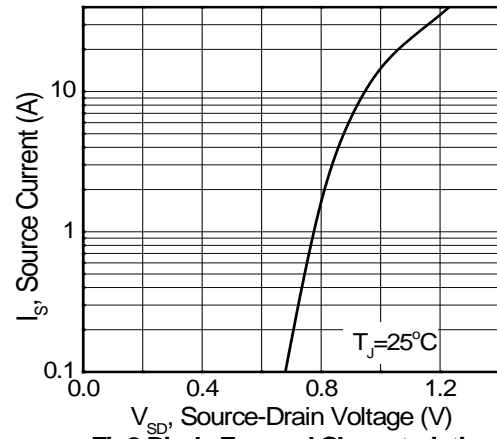


Fig8.Diode Forward Characteristics



SSC8138GT4

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