

N-Channel Enhancement Mode MOSFET

- **Features**

VDS	VGS	RDSon TYP	ID
20V	±12V	10mR@10V	20A
		11mR@4V5	
		16mR@2V5	

Advanced trench process technology
 High Density Cell Design for Ultra Low On-Resistance
 High Power and Current handling capability
 Fully Characterized Avalanche Voltage and Current

- **General Description**

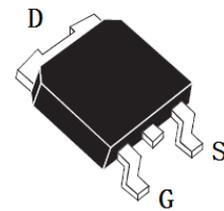
The SSC8428GT8 combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is ideal for load switch and battery protection applications.

- **Applications**

- Li-ion battery protection ;
- Load switch

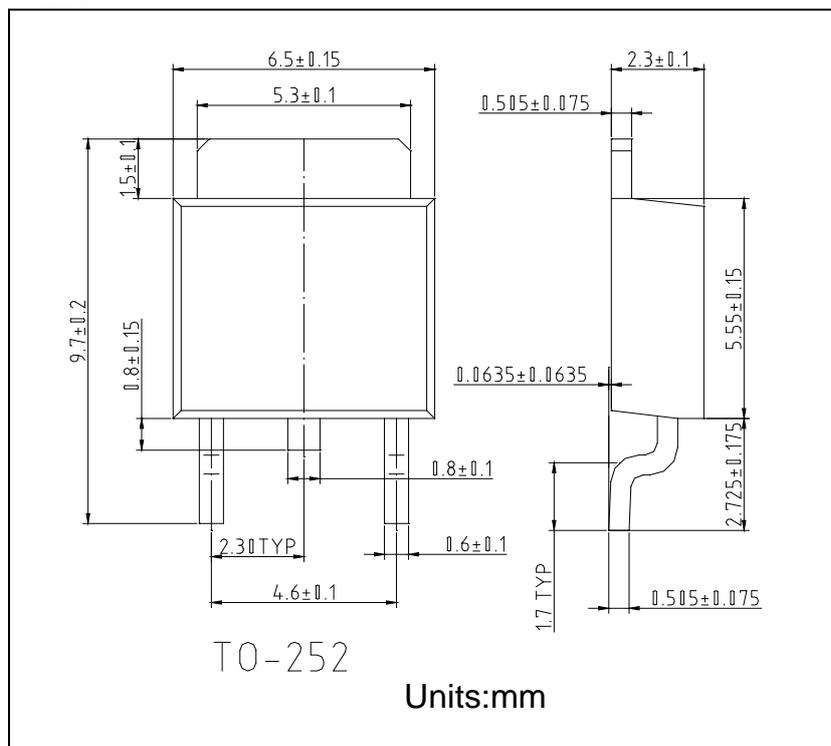
- **Pin configuration**

Bottom View



TO-252

- **Package Information**





SSC8428GT8

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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	± 12	
Drain Current ^{note1}	$T_A = 25^\circ\text{C}$	I_D	20	A
	$T_A = 100^\circ\text{C}$		18	
Total Power Dissipation		P_D	25	W
Power Dissipation		P_{DSM}	2.5	W
Storage Temperature Range		Tstg	-55/150	$^\circ\text{C}$

Note1: The maximum current rating is package limited.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS (Note 2)						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu\text{A}$	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$	--	--	1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	--	--	± 100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.5	0.7	1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 10A$	--	10	11	mR
		$V_{GS} = 4.5V, I_D = 8A$	--	11	12	
		$V_{GS} = 2.5V, I_D = 5A$	--	16	20	
Forward Transconductance	G_{FS}	$V_{DS} = 5V, I_D = 4.5A$	--	8	--	S
Drain-Source Diode Forward Current	I_S		--	--	1.7	A
Source-drain (diode forward) voltage	V_{SD}	$V_{GS} = 0V, I_D = 0.5A$	--	0.8	1.3	V
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS} = 8V, V_{GS} = 0V$ $F = 1.0\text{MHz}$	--	600	--	pF
Output Capacitance	C_{OSS}		--	330	--	
Reverse Transfer Capacitance	C_{RSS}		--	140	--	
Total Gate Charge	Q_G	$V_{DS} = 10V, I_D = 6A,$ $V_{GS} = 4.5V$	--	10	15	nC
Gate-Source Charge	Q_{GS}		--	2.3	--	
Gate-Drain	Q_{GD}		--	2.9	--	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$T_{D(ON)}$	$V_{DD} = 10V, R_L = 10\Omega, I_D = 1A,$ $V_{GEN} = 4.5V, R_G = 6R$	--	8	20	ns
Rise Time	tr		--	10	25	
Turn-Off Delay Time	$T_{D(off)}$		--	35	70	
Fall-Time	tf		--	30	60	

Typical Performance Characteristics

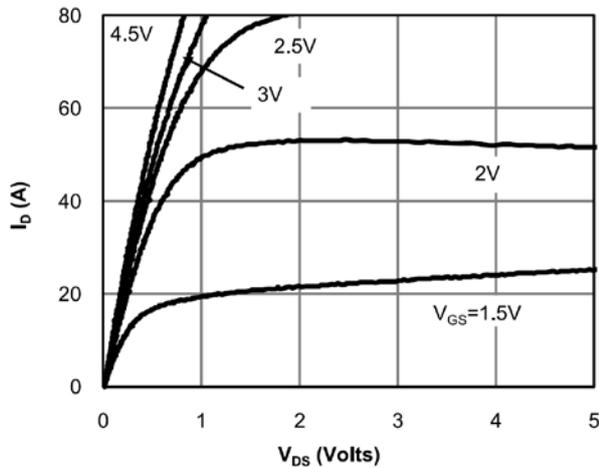


Fig 1: On-Region Characteristics (Note E)

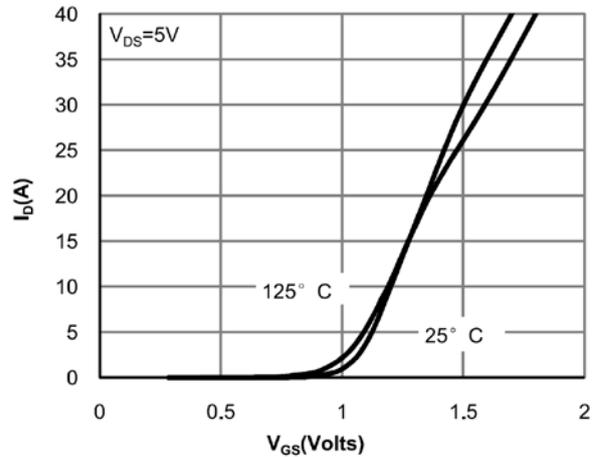


Figure 2: Transfer Characteristics (Note E)

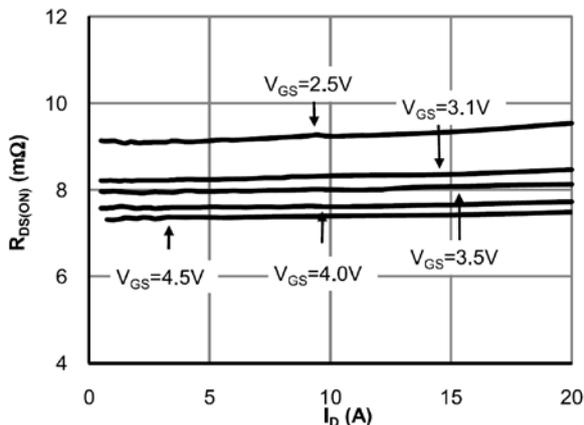


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

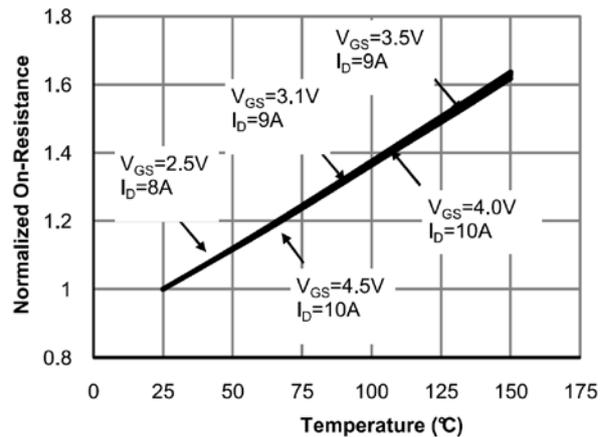


Figure 4: On-Resistance vs. Junction Temperature (Note E)

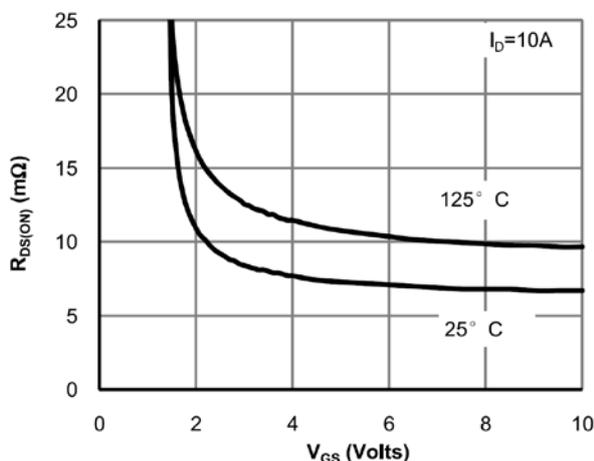


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

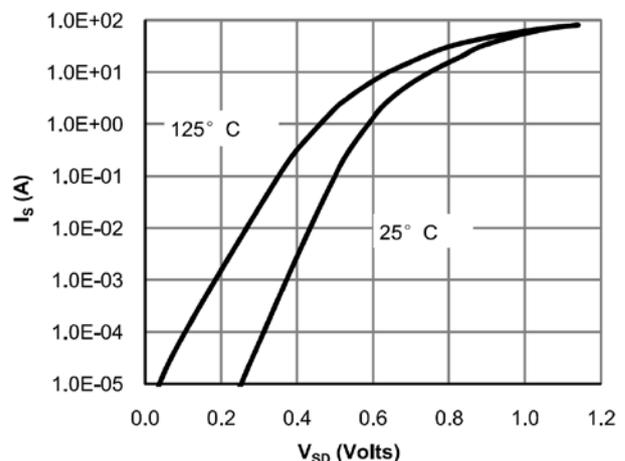


Figure 6: Body-Diode Characteristics (Note E)

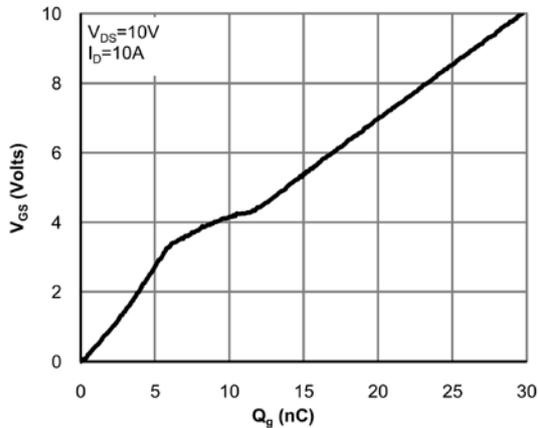


Figure 7: Gate-Charge Characteristics

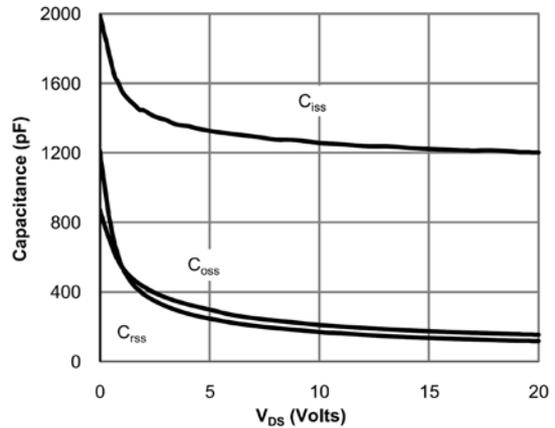


Figure 8: Capacitance Characteristics

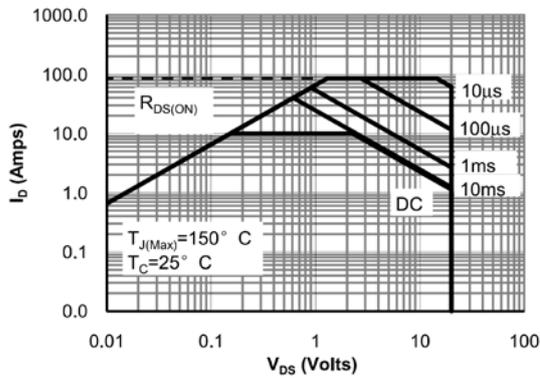


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

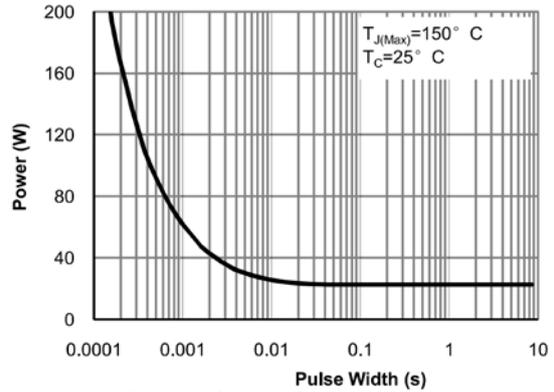


Figure 10: Single Pulse Power Rating Junction-to-Case (Note F)

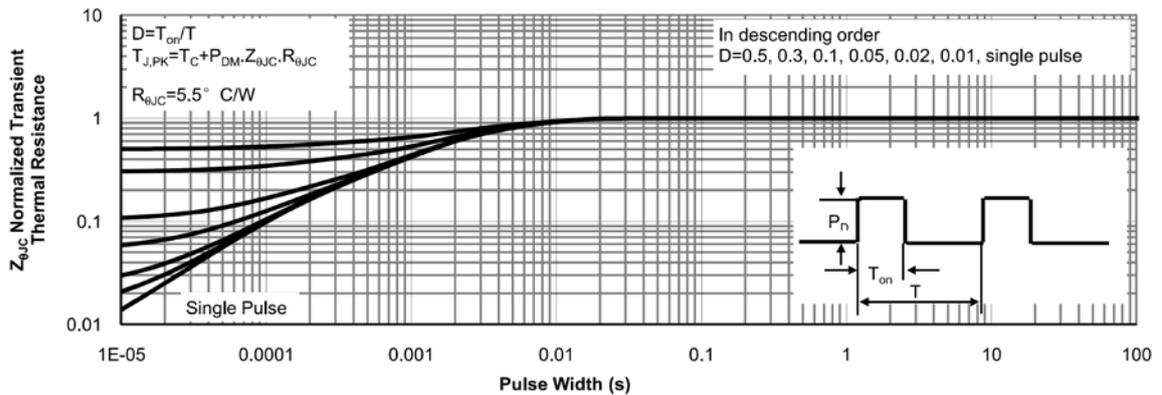


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)



SSC8428GT8

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