SSC8428JN3

Dual N-Channel Enhancement Mode MOSFET

- **Features**

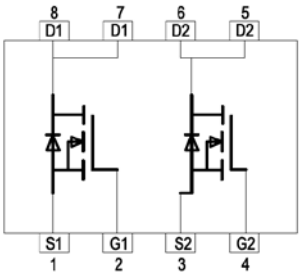
VDS	VGS	RDSon TYP	ID
20V	±12V	13mR@10V	8A
		15mR@4V5	

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

- **Applications**
  - Li-ion battery protection
  - Load switch

- **Pin configuration**

Top View

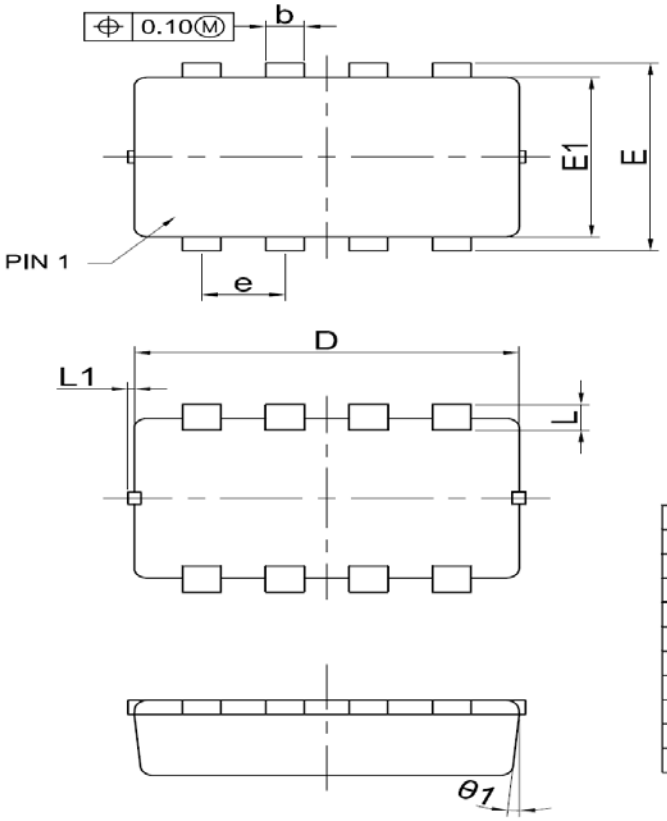


DFN3X2

- **General Description**

The SSC8428JN3 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.

- **Package Information**



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.70	0.80	0.90
b	0.24	0.30	0.35
c	0.08	0.15	0.20
D	2.90	3.00	3.05
E	1.90	2.00	2.10
E1	1.60	1.70	1.75
e		0.65 BCS	
L	0.20	0.275	0.400
L1	0	—	0.100
θ1	0°	5°	8°

- **Absolute Maximum Ratings** @ T_A = 25°C unless otherwise specified

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	±12	
Drain Current note1	TA=25℃	I_D	8	A
	TA=100℃		6	
Pulsed Drain Current		I_{DM}	30	
Total Power Dissipation		P_D	2	W
Operating and Storage Temperature Range		Topr	150	℃
Storage Temperature Range		Tstg	-55/150	℃

Note1：The maximum current rating is package limited.

- **Electrical Characteristics** @ T_A = 25°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 = 250uA	20	--	--	V
Zero Gate Voltage Drain Curren	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V	--	--	1	uA
Gate-Body Leakage	I_{GSS}	V_{GS} = ±12V, V_{DS} = 0V	--	--	±100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = 250uA	0.5	0.7	1	V
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	V_{GS} = 10V, I_D = 4.5A	--	13	16	mR
		V_{GS} = 4.5V, I_D = 3.5A	--	15	18	
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}	VGS=0V,ID=0.5A	--	0.8	1.3	V
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	V_{DS} = 8V, V_{GS} = 0V F = 1.0MHz	--	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, RL=10Ω,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

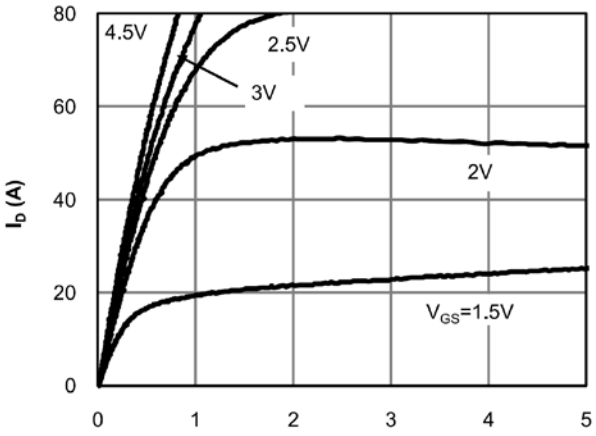


Fig 1: On-Region Characteristics (Note E)

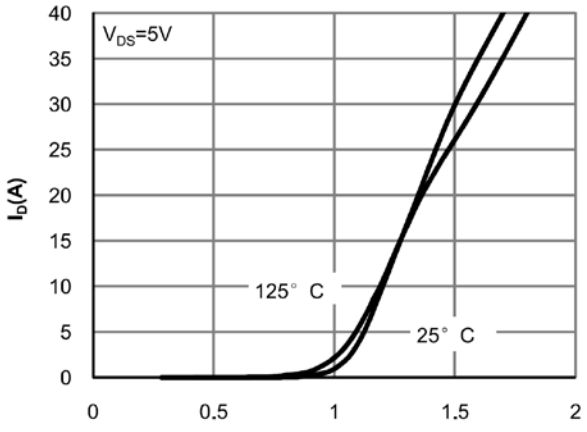


Figure 2: Transfer Characteristics (Note E)

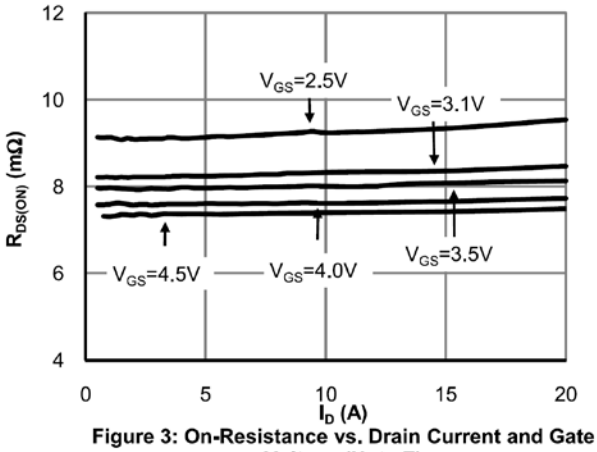


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

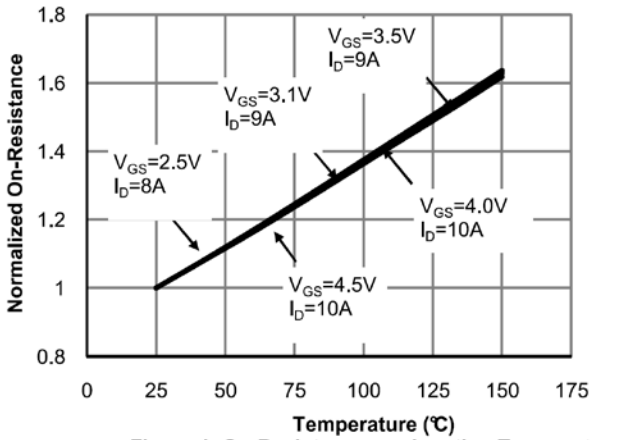


Figure 4: On-Resistance vs. Junction Temperature (Note E)

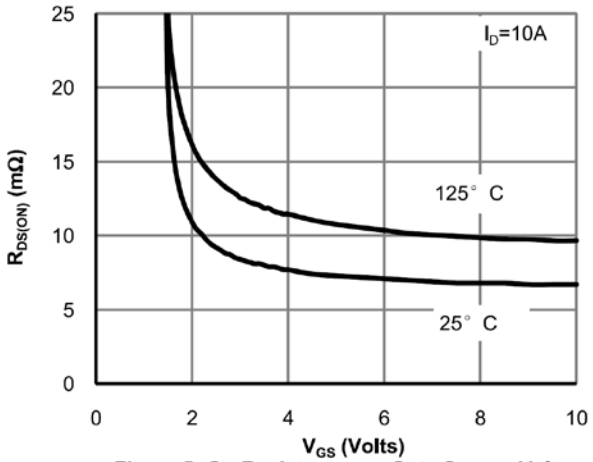


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

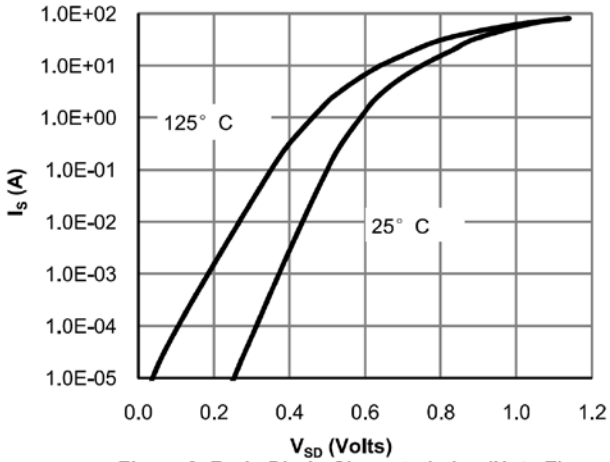


Figure 6: Body-Diode Characteristics (Note E)

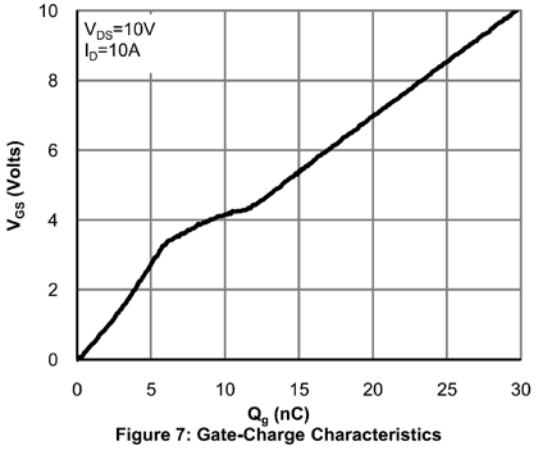


Figure 7: Gate-Charge Characteristics

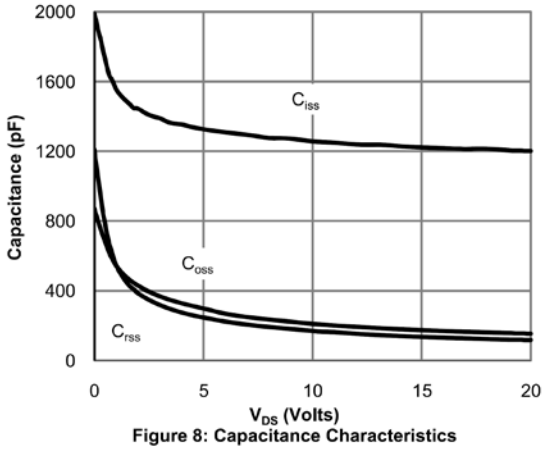


Figure 8: Capacitance Characteristics

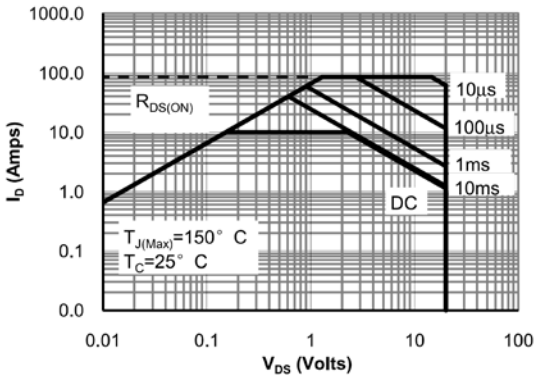


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

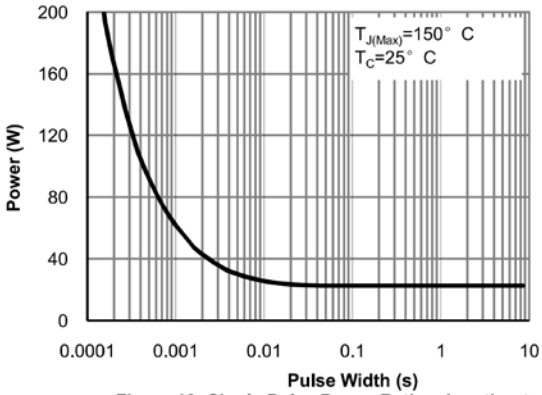


Figure 10: Single Pulse Power Rating Junction-to-Ca (Note F)

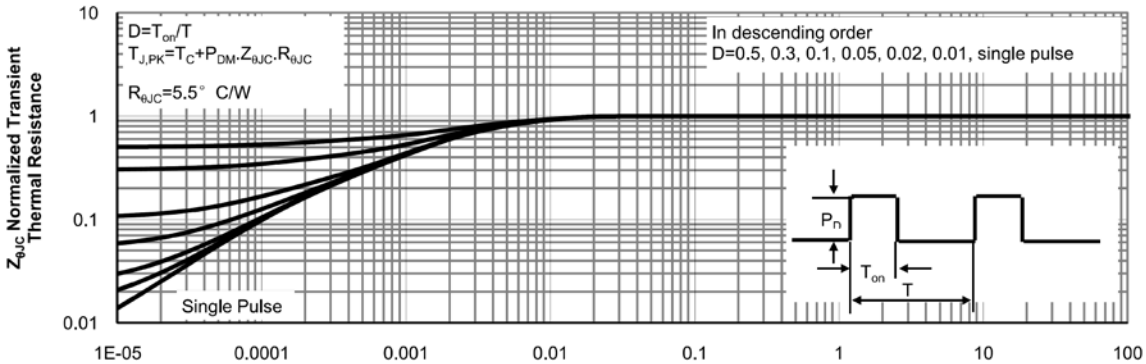


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

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