Common-Drain Dual N-Channel 20 V Power MOSFET

PRODUCT SUMMARY			
V_{SS} (V)	$R_{DS(on)}$ (mΩ)(Typ.)	I_S (A)	Q_g (Typ.)
20	14.8 at V_{GS} = 4.5 V	8	12.8 nC
	19.2 at V_{GS} = 2.5 V		

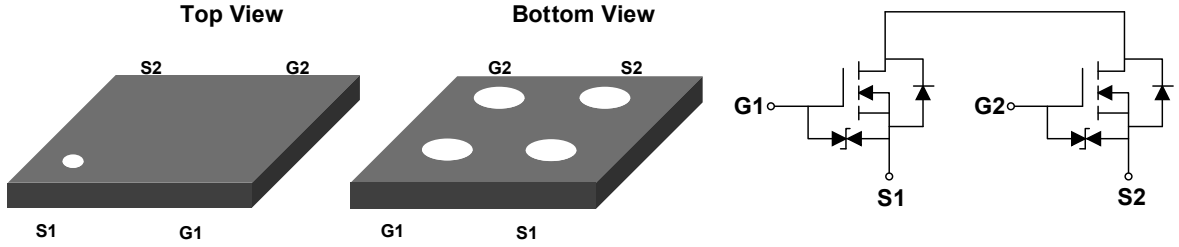
FEATURES

- Advanced Trench Technology
- Super High Dense Cell for Low RSS(ON)
- ESD Protected

APPLICATIONS

- Battery Protection
- Load Switch

CSP1.5*1.5-4L Pin Configuration



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Source-Source Voltage	V_{SS}	20	V
Gate-Source Voltage	V_{GS}	± 10	
Continuous Source Current	I_S	8	A
Pulsed Source Current[a]	I_{SP}	62	
Total Power Dissipation	P_T	1.6	W
Storage Temperature Range	T_{STG}	- 55 to 150	°C
Operating Junction Temperature Range	T_J	- 55 to 150	°C
Junction-to-Ambient (PCB Mount) [d]	R_{thJA}	78	°C/W

Notes

a. PW≤10μs, duty cycle≤1%;

SPECIFICATIONS (T_A = 25 °C, unless otherwise noted)						
PARAMETER	**SYMBOL**	**TEST CONDITIONS**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Static						
Source-Source Breakdown Voltage	BV_{SSS}	V_{GS} = 0 V, I_S = 250 µA	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{SS} = V_{GS}, I_S = 250 µA	0.4	-	1.3	
Gate-Body Leakage	I_{GSS}	V_{SS} = 0 V, V_{GS} = ± 8 V	-	-	± 10	µA
Zero Gate Voltage Source Current	I_{SSS}	V_{SS} = 20 V, V_{GS} = 0 V	-	-	1	µA
Source-Source On-State Resistance[a]	$R_{SS(on)}$	V_{GS} = 4.5 V, I_S = 3 A	-	14.2	19.8	mΩ
		V_{GS} = 4.0 V, I_S = 3 A	-	14.8	208	
		V_{GS} = 3.8 V, I_S = 3 A	-	15.2	21	
		V_{GS} = 3.1 V, I_S = 3 A	-	16.7	23	
		V_{GS} = 2.5 V, I_S = 3 A	-	19.2	30	
Forward Transconductance	g_{fs}	V_{SS} = 5 V, I_S = 3 A	-	20	-	S
Dynamic[b]						
Input Capacitance	C_{iss}	V_{GS} = 0 V, V_{SS} = 10 V, f = 1 MHz	-	241	-	pF
Output Capacitance	C_{oss}		-	215	-	
Reverse Transfer Capacitance	C_{rss}		-	72	-	
Total Gate Charge[c]	Q_g	V_{SS} = 10 V, V_{GS} = 4.5 V, I_S = 3 A	-	12.8	-	nC
Turn-On Delay Time[c]	$t_{d(on)}$	V_{SS} = 10 V, R_G = 3 Ω, V_{GS} = 4.5 V, I_S = 3 A	-	2	-	ns
Rise Time[c]	t_r		-	2.3	-	
Turn-Off Delay Time[c]	$t_{d(off)}$		-	6.8	-	
Fall Time[c]	t_f		-	8.3	-	
Drain-Source Body Diode Ratings and Characteristics[b] (T_A = 25 °C)						
Forward Voltage[a]	V_F	I_F = 1 A, V_{GS} = 0 V	-	-	1.2	V

Notes

a. Pulse test; pulse width ≤ 300 µs, duty cycle ≤ 2 %.

b. Guaranteed by design, not subject to production testing.

c. Independent of operating temperature.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

TYPICAL CHARAC TERISTICS (25 °C, unless otherwise noted)

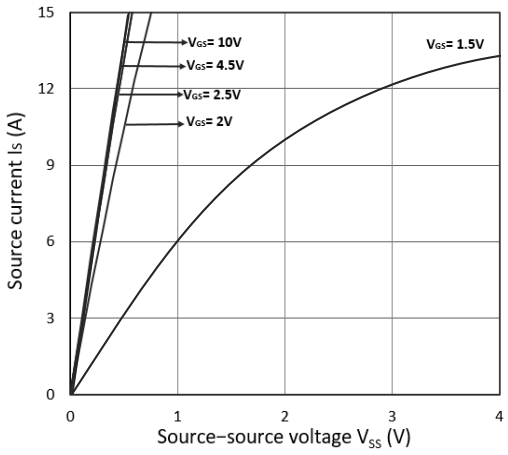


Figure 1. Output Characteristics

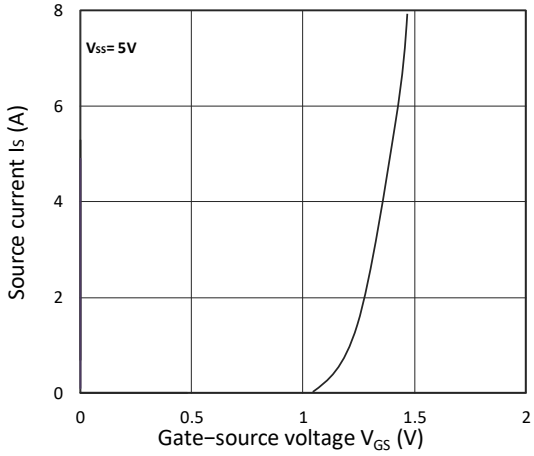


Figure 2. Transfer Characteristics

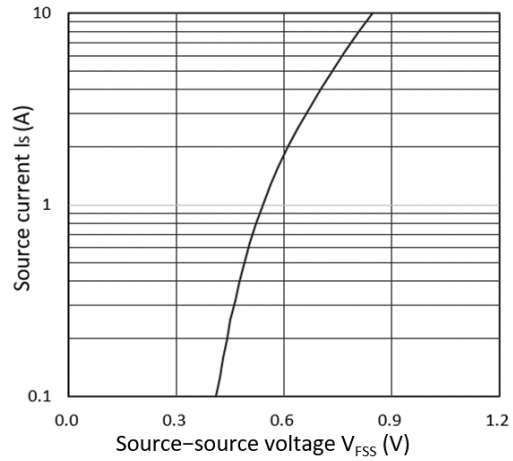


Figure 3. Forward Characteristics of Reverse

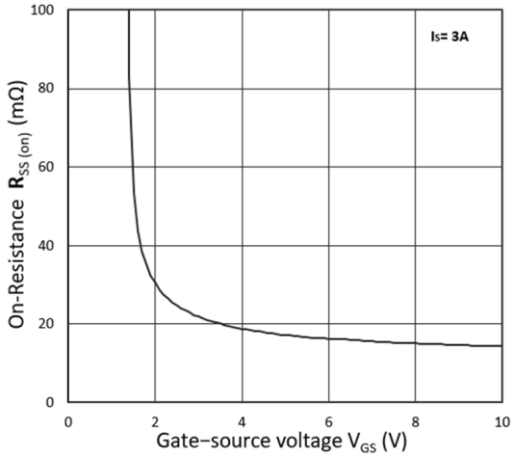


Figure 4. $R_{SS(on)}$ vs. V_{GS}

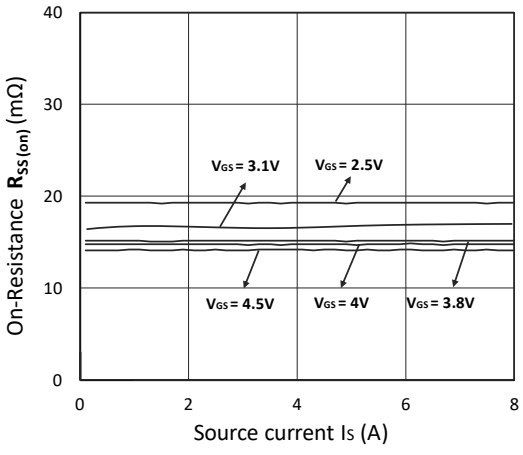


Figure 5. $R_{SS(on)}$ vs. I_S

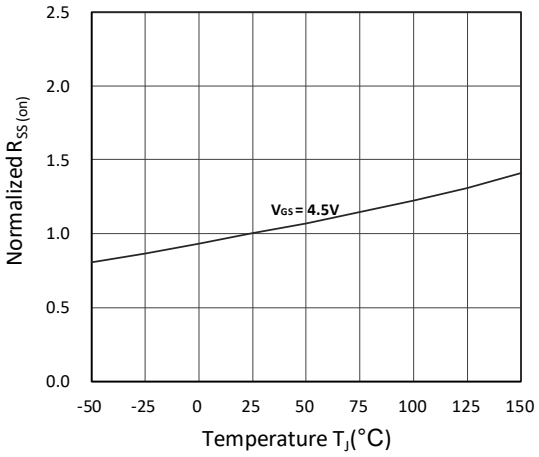


Figure 6. Normalized $R_{SS(on)}$ vs. Temperature

TYPICAL CHARAC TERISTICS (25 °C, unless otherwise noted)

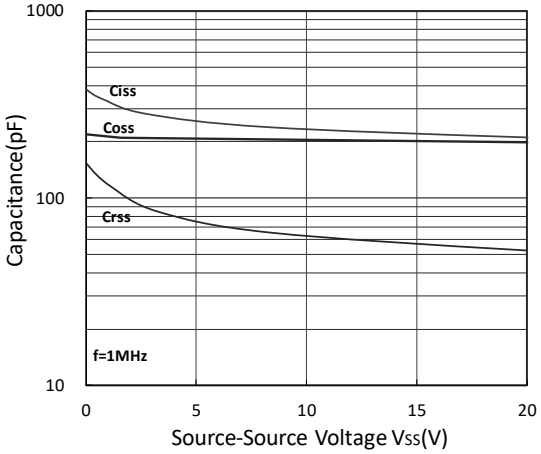


Figure 7. Capacitance Characteristics

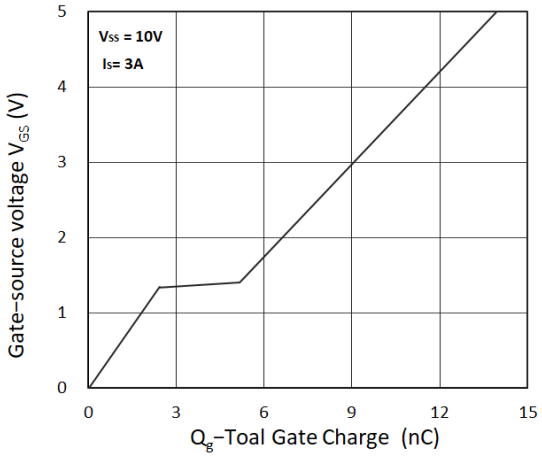
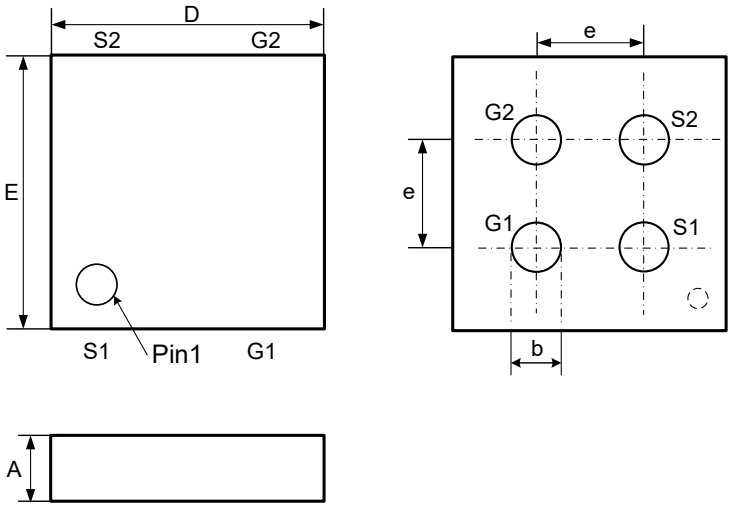


Figure 8. Gate Charge Characteristics

CSP1.5*1.5-4L PACKAGE OUTLINE



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	1.45	1.50	1.55
E	1.45	1.50	1.55
e	0.65BSC		
b	0.27	0.30	0.33
A	0.16	0.18	0.20

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