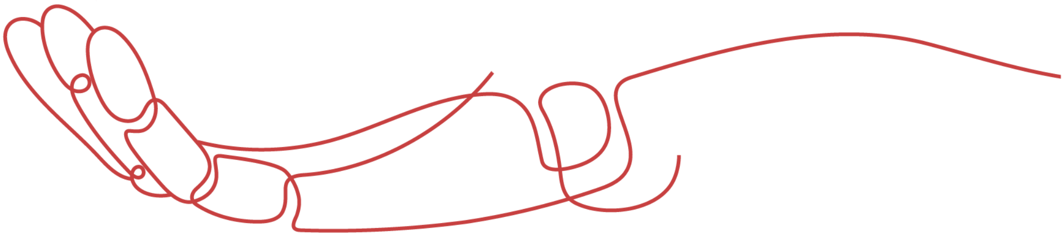
JG Techology

PRODUCT DATA SHEET



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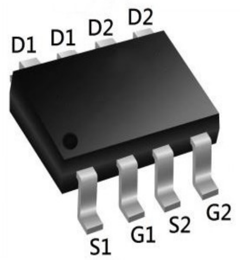
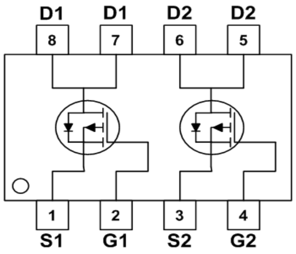
Datasheet **Resources** **Samples**

Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.jg-semi.cn. Please email any questions regarding the system integration to JINGAO_questions@jgsemi.com.

- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology



SOP8



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25°C	Continuous Drain Current, V_{GS} @ 10V[1]	-5.3	A
I_D@T_A=70°C	Continuous Drain Current, V_{GS} @ 10V[1]	-4.3	A
I_{DM}	Pulsed Drain Current[2]	-20	A
EAS	Single Pulse Avalanche Energy[3]	---	mJ
I_{AS}	Avalanche Current	---	A
P_D@T_A=25°C	Total Power Dissipation[4]	2.0	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{θJA}$	Thermal Resistance Junction-Ambient [1]	---	100	°C/W
$R_{θJC}$	Thermal Resistance Junction-Case[1]	---	---	°C/W

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = -250μA	-30	-	-	V
Gate-body Leakage current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30V, V_{GS} = 0V	-	-	-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1.0	-1.5	-2.1	V
Drain-Source On-Resistance[3]	$R_{DS(on)}$	V_{GS} = -10V, I_D = -4.1A	-	35	55	mΩ
		V_{GS} = -4.5V, I_D = -3A	-	52	85	
Dynamic Characteristics[4]						
Input Capacitance	C_{iss}	V_{DS} = -15V, V_{GS} =0V, f =1MHz	-	530	-	pF
Output Capacitance	C_{oss}		-	70	-	
Reverse Transfer Capacitance	C_{rss}		-	56	-	
Switching Characteristics[4]						
Total Gate Charge	Q_g	V_{GS} = -10V,I_D = -4.1A, V_{DS} = -15V	-	10	-	nC
Gate-Source Charge	Q_{gs}		-	2	-	
Gate-Drain Charge	Q_{gd}		-	2.8	-	
Turn-On Delay Time	$t_{d(on)}$	V_{GS} = -10V ,V_{DD}= -15V, ,R_{GEN} = 6Ω, I_D = -4.1A,	-	6.9	-	ns
Rise Time	t_r		-	12	-	
Turn-Off Delay Time	$t_{d(off)}$		-	19	-	
Fall Time	t_f		-	7.5	-	
Source-Drain Body Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	I_S = -1.7A, V_{GS} = 0V	-	-	-1.2	V
Continuous Source Current	I_S		-	-	-5.3	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C.

2. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.

3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.

4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

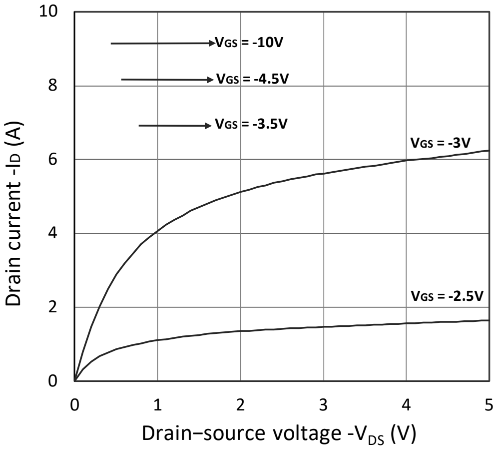


Figure 1. Output Characteristics

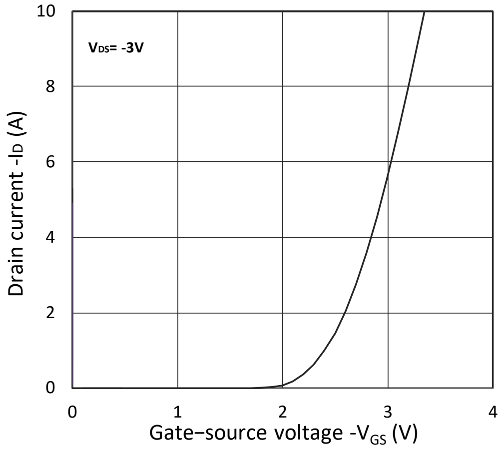


Figure 2. Transfer Characteristics

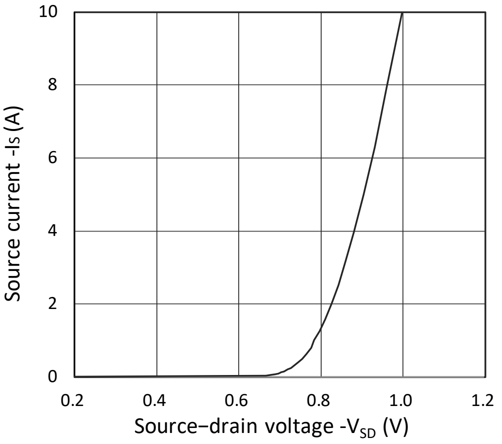


Figure 3. Forward Characteristics of Reverse

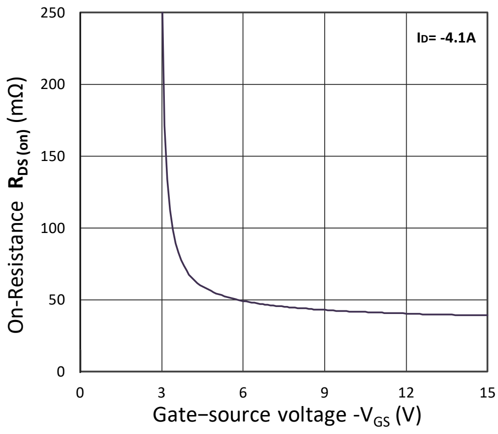


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

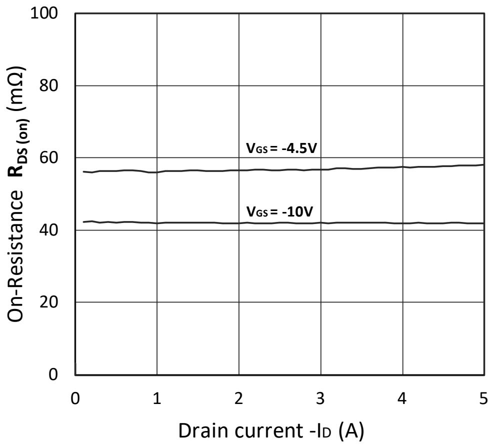


Figure 5. $R_{DS(ON)}$ vs. I_D

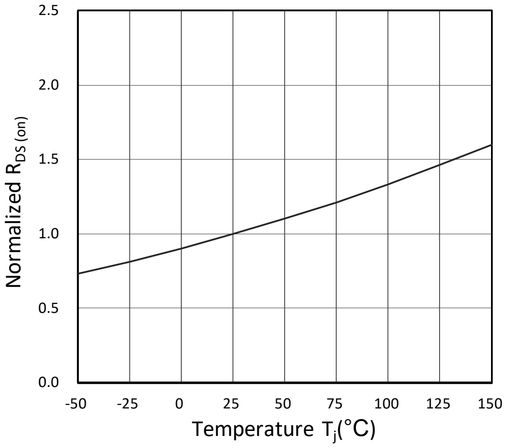
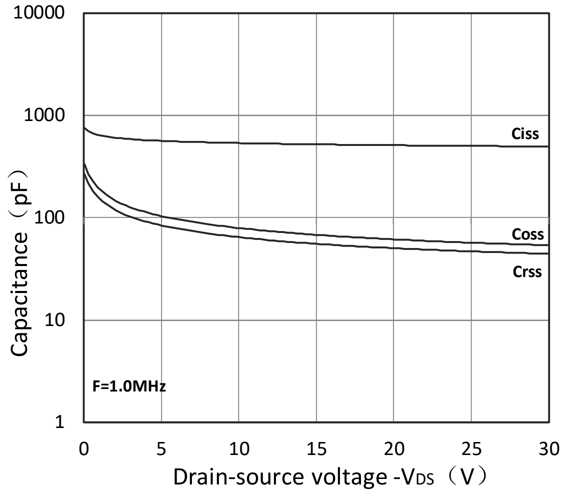


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature



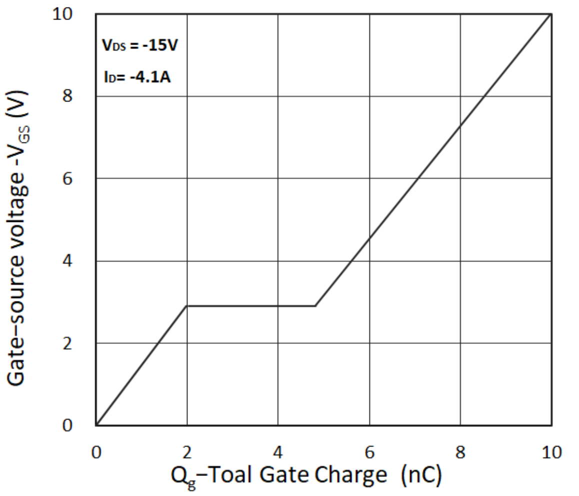
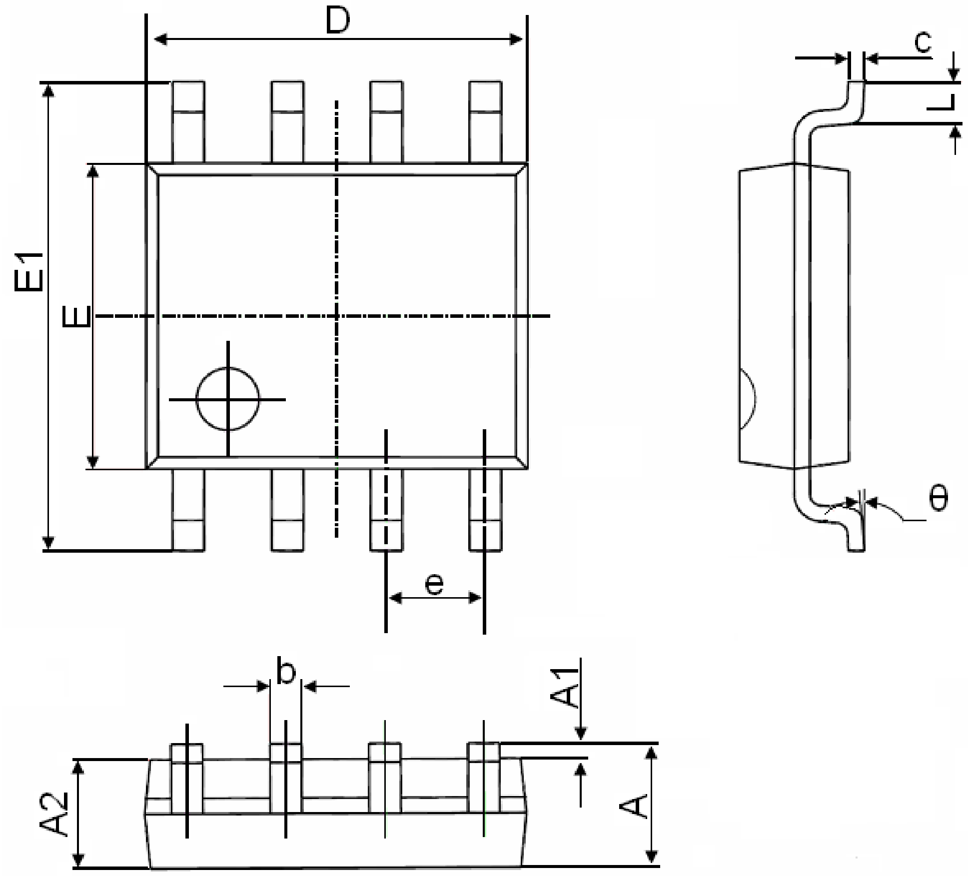


Figure 7. Capacitance Characteristics	Figure 8. Gate Charge Characteristics

Package Mechanical Data- SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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