



PRODUCT DATA SHEET

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Datasheet



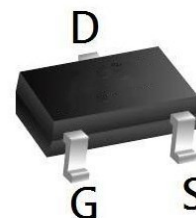
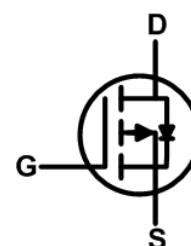
Resources



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.

BVDSS	RDSON	ID
-100V	220mΩ	-3A


SOT23-3L


- ★ Super Low Gate Charge
- ★ 100% EAS Guaranteed
- ★ Green Device Available
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	-100	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current, V _{GS} @ 10V ^{1,6}	-3	A
I _D @T _C =100°C	Continuous Drain Current, V _{GS} @ 10V ^{1,6}	-2.1	A
I _{DM}	Pulsed Drain Current ²	-12.1	A
EAS	Single Pulse Avalanche Energy ³	109	mJ
I _{AS}	Avalanche Current	---	A
P _D @T _C =25°C	Total Power Dissipation ⁴	40	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	---	---	°C/W
R _{θJC}	Thermal Resistance Junction-Case ¹	---	3.7	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-100	---	---	V
ΔBV _{DSS} /ΔT _J	BV _{DSS} Temperature Coefficient	Reference to 25°C, I _D =1mA	---	---	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-2A	---	220	260	mΩ
		V _{GS} =-4.5V, I _D =-1A	---	250	280	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-1	---	-2.5	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	---	---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-200V, V _{GS} =0V, T _J =25°C	---	---	-1	uA
		V _{DS} =-200V, V _{GS} =0V, T _J =125°C	---	---	-100	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-5V, I _D =-10A	---	10	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	5.2	---	Ω
Q _g	Total Gate Charge	V _{DS} =-50V, V _{GS} =-10V, I _D =-1.4A	---	19.6	---	nC
Q _{gs}	Gate-Source Charge		---	6	---	
Q _{gd}	Gate-Drain Charge		---	4.2	---	
T _{d(on)}	Turn-On Delay Time	V _{GS} =-10V, V _{DS} =-50V, R _L =16Ω, R _{GEN} =3Ω	---	13.5	---	ns
T _r	Rise Time		---	3.8	---	
T _{d(off)}	Turn-Off Delay Time		---	42	---	
T _f	Fall Time		---	6.4	---	
C _{iss}	Input Capacitance	V _{DS} =-50V, V _{GS} =0V, f=1MHz	---	1199	---	pF
C _{oss}	Output Capacitance		---	33.8	---	
C _{rss}	Reverse Transfer Capacitance		---	28.2	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	-3	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =-1.4A, T _J =25°C	---	---	-1.2	V
t _{rr}	Reverse Recovery Time	I _F =-1.4A, di/dt=100A/μs,	---	42.9	---	nS
Q _{rr}	Reverse Recovery Charge	T _J =25°C	---	83.7	---	nC

Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature.

Notes 2.E_{AS} condition: T_J=25°C, V_{DD}=50V, V_G=-10V, R_g=25Ω, L=0.5mH.

Notes 3.Repetitive Rating: Pulse width limited by maximum junction temperature.

Typical Electrical And Thermal Characteristics (Curves)

Figure 1. Output Characteristics

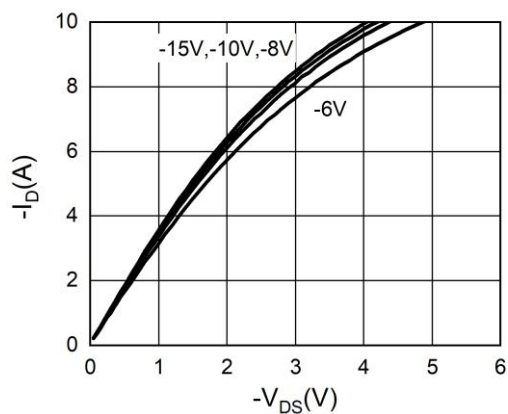


Figure 2. Transfer Characteristics

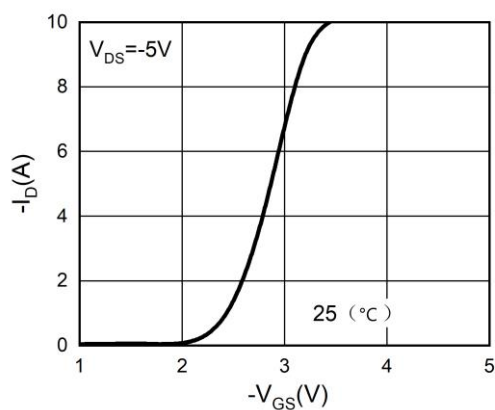


Figure 3. Power Dissipation

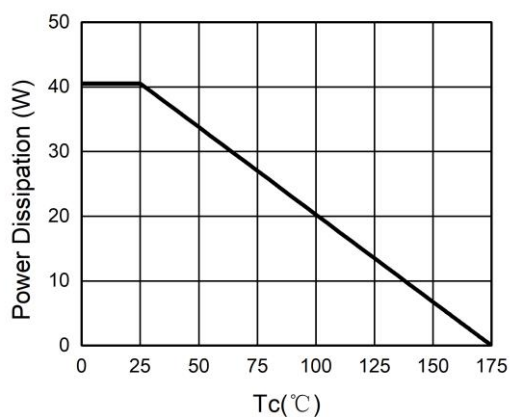


Figure 4. Drain Current

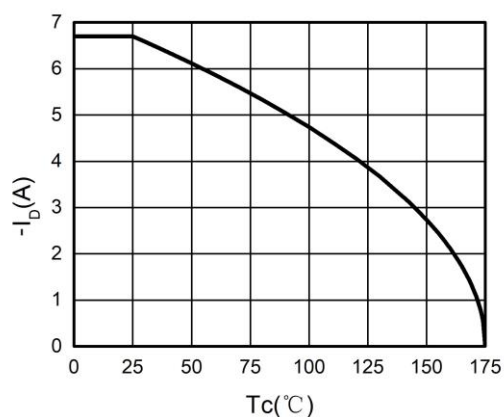


Figure 5. BV_{DSS} vs Junction Temperature

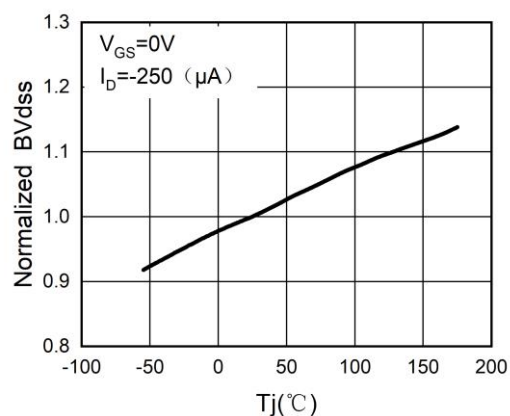
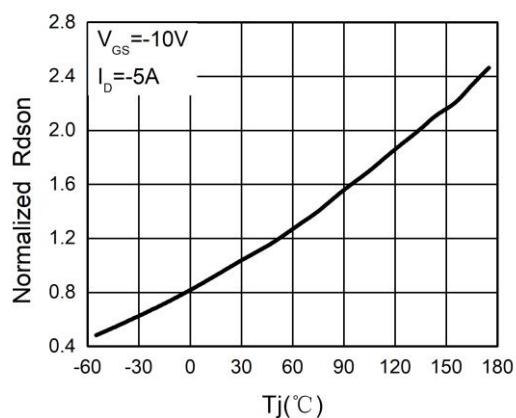


Figure 6. $R_{DS(ON)}$ vs Junction Temperature



Typical Electrical And Thermal Characteristics (Curves)

Figure 7. Gate Charge Waveforms

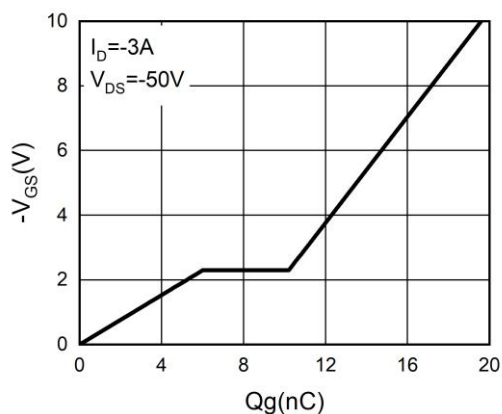


Figure 8. Capacitance

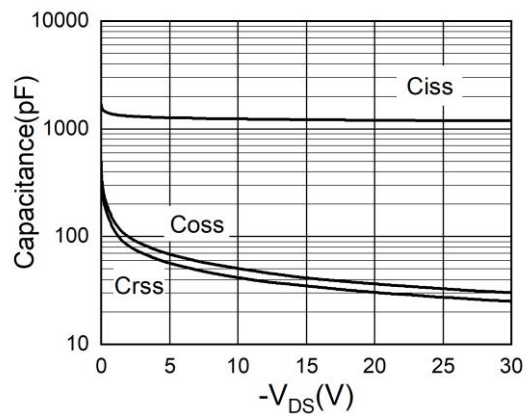


Figure 9. Body-Diode Characteristics

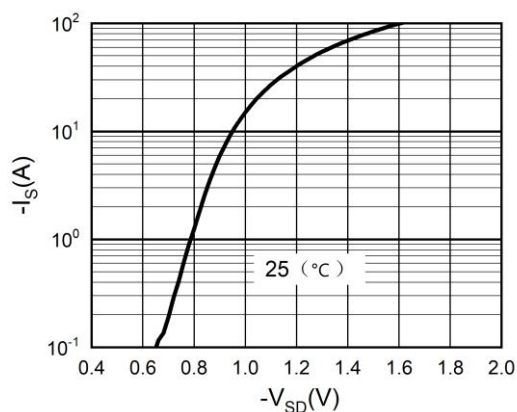
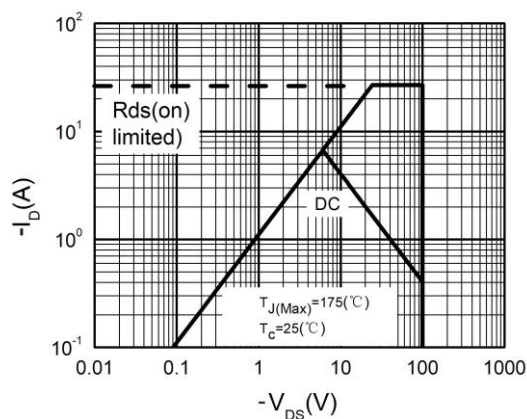
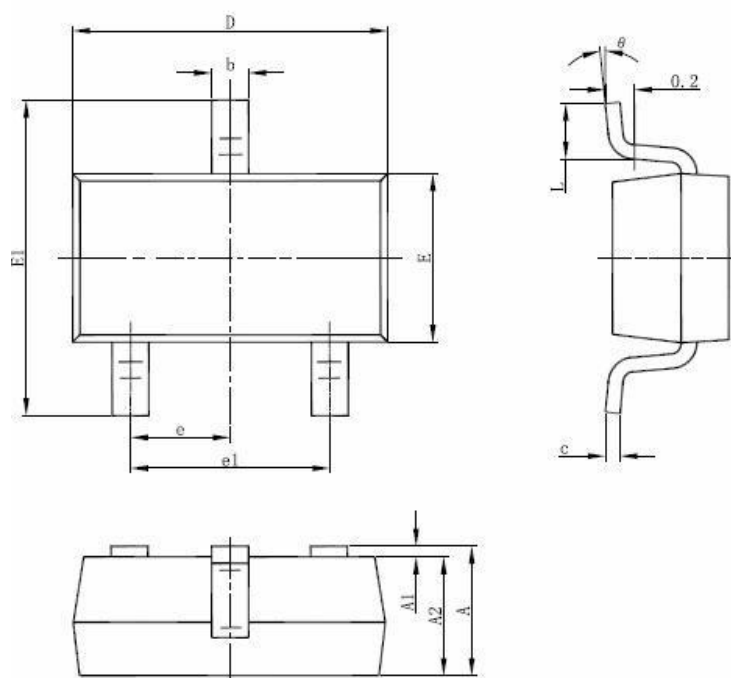


Figure 10. Maximum Safe Operating Area



SOT23-3L Package Information



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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