



PRODUCT DATA SHEET



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Datasheet



Resources

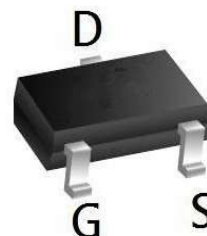


Samples

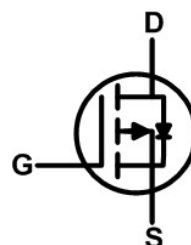
Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.jg-semi.cn. Please email any questions regarding the system integration to JINGAO_questions@jgsemi.com.

Product Summary

BVDSS	RDSON	ID
-20V	400mΩ	-0.65A


SOT723

- Super Low Gate Charge
- Low Threshold
- High-Side Switching
- Advanced high cell density Trench technology


Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	± 12	V
$I_D@T_A=25^{\circ}C$	Continuous Drain Current, V_{GS} @ -4.5V ₁	-0.65	A
I_{DM}	Pulsed Drain Current ₂	-1.2	A
$P_D@T_A=25^{\circ}C$	Total Power Dissipation ₃	0.15	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient ₁	---	830	$^{\circ}C/W$

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

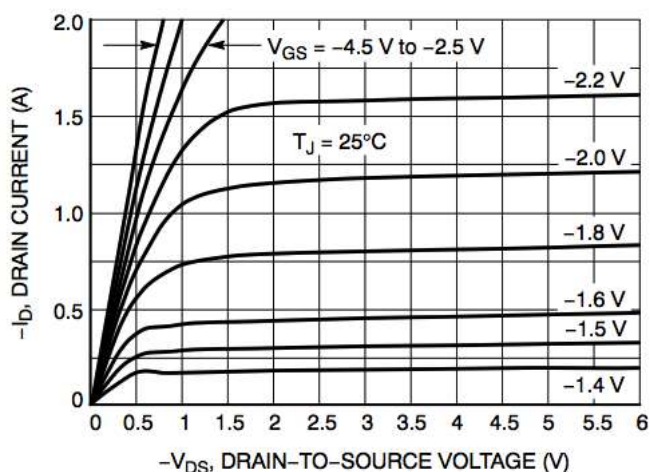
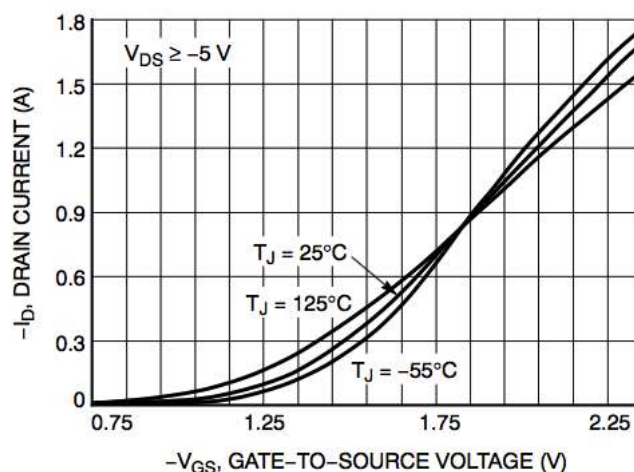
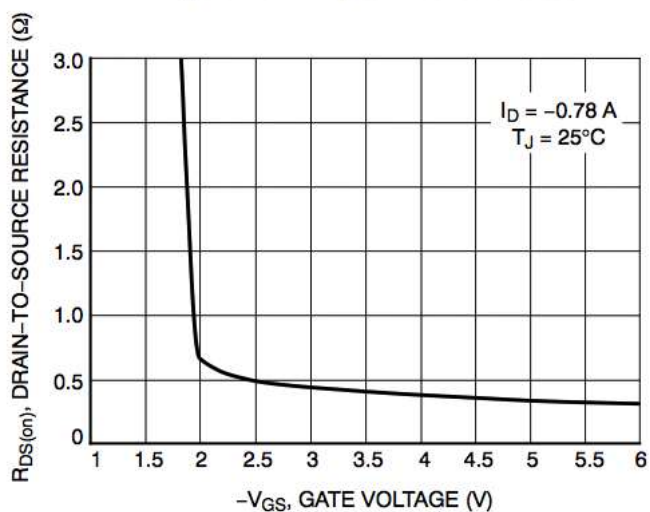
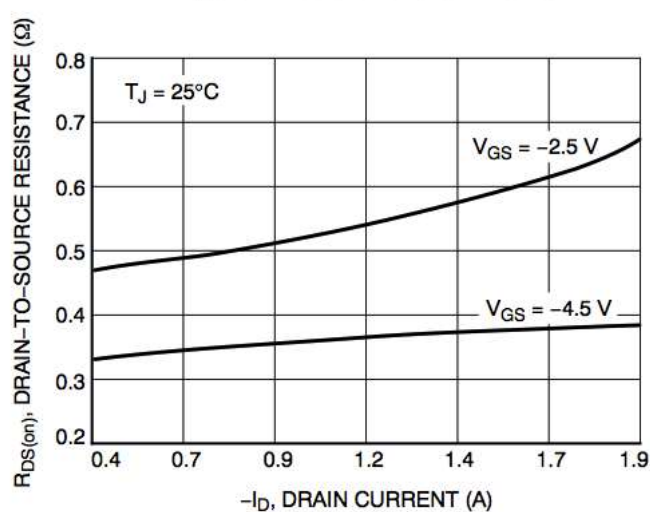
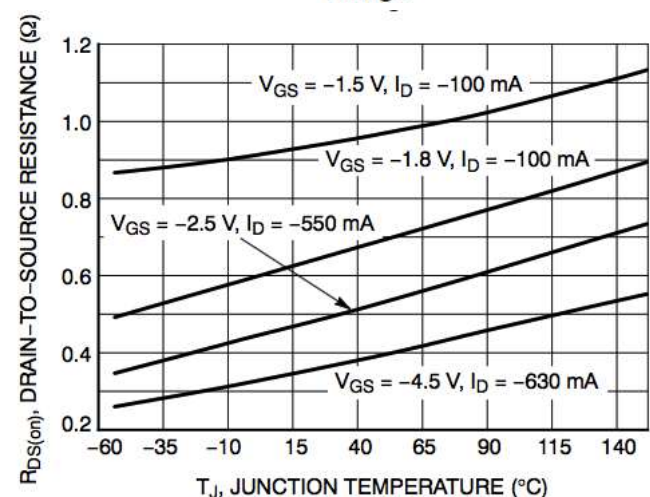
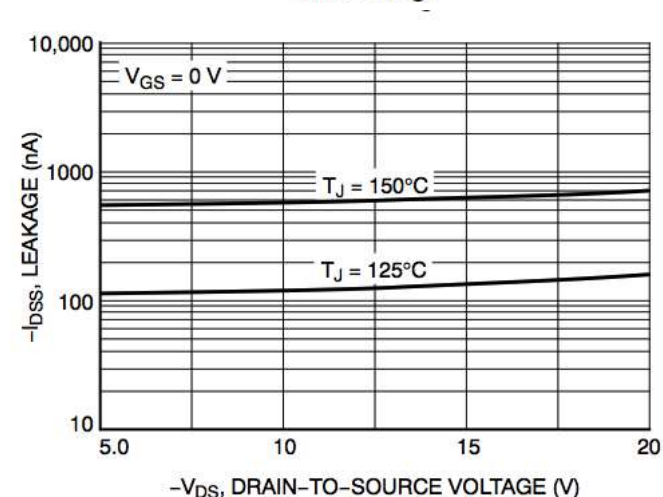
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =-250uA	-20	---	---	V
ΔBV _{DSS} /ΔT _J	BV _{DSS} Temperature Coefficient	Reference to 25°C , I _D =-1mA	---	-0.014	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-4.5V , I _D =-1A	---	400	500	mΩ
		V _{GS} =-2.5V , I _D =-0.8A	---	600	700	
		V _{GS} =-1.8V , I _D =-0.5A	---	900	---	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-0.35	---	-1.1	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	3.95	---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-16V , V _{GS} =0V , T _J =25°C	---	---	-1	uA
		V _{DS} =-16V , V _{GS} =0V , T _J =55°C	---	---	-5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 10V , V _{DS} =0V	---	---	± 20	nA
g _{fs}	Forward Transconductance	V _{DS} =-10V , I _D =-0.5A	0.7	---	---	S
Q _g	Total Gate Charge (-4.5V)	V _{DS} =-10V , V _{GS} =-4.5V , I _D =-0.6A	---	1.2	---	nC
Q _{gs}	Gate-Source Charge		---	0.05	---	
Q _{gd}	Gate-Drain Charge		---	0.13	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =-10V , V _{GS} =-4.5V , R _G =10Ω, I _D =-0.2A	---	9	---	ns
T _r	Rise Time		---	6	---	
T _{d(off)}	Turn-Off Delay Time		---	30	---	
T _f	Fall Time		---	19	---	
C _{iss}	Input Capacitance	V _{DS} =-15V , V _{GS} =0V , f=1MHz	---	150	---	pF
C _{oss}	Output Capacitance		---	20	---	
C _{rss}	Reverse Transfer Capacitance		---	11	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V , I _S =-1A , T _J =25°C	---	---	-1.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The power dissipation is limited by 150°C junction temperature
- 4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.


Figure 1. On-Region Characteristics

Figure 2. Transfer Characteristics

Figure 3. On-Resistance vs. Gate-to-Source Voltage

Figure 4. On-Resistance vs. Drain Current and Gate Voltage

Figure 5. On-Resistance Variation with Temperature

Figure 6. Drain-to-Source Leakage Current vs. Voltage

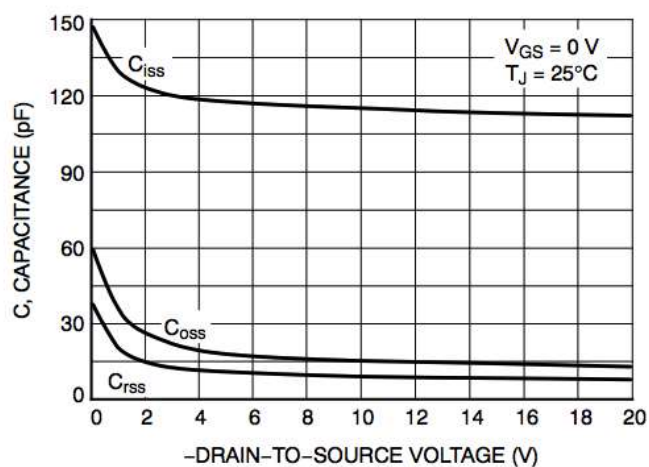


Figure 7. Capacitance Variation

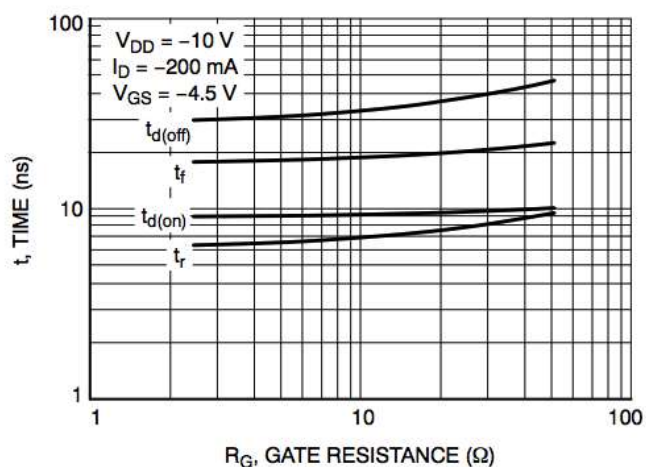


Figure 8. Resistive Switching Time Variation vs. Gate Resistance

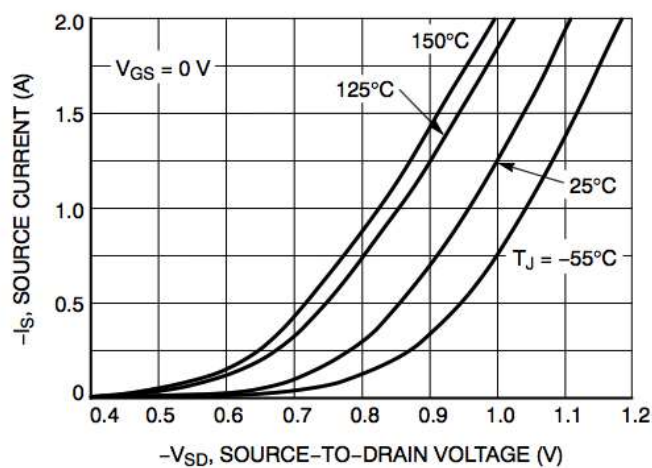
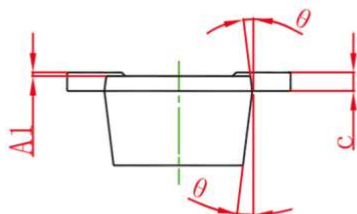
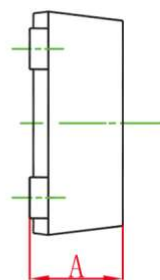
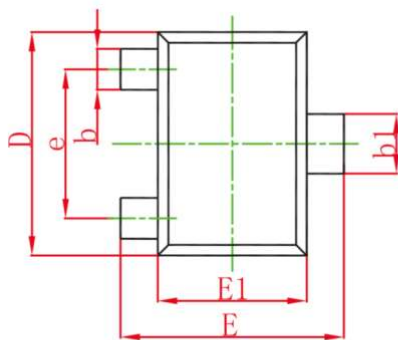


Figure 9. Diode Forward Voltage vs. Current

SOT723 Pin Configurations



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

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