SEMICONDUCTOR

JH3401A

P-Channel Enhancement MOSFET

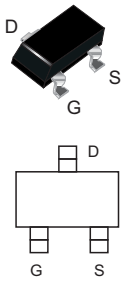
FEATURES

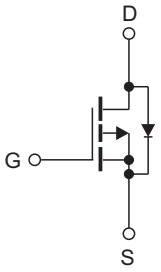
- RDS(ON)<50mΩ@VGS=-10V
- RDS(ON)<65mΩ@VGS=-4.5V
- RDS(ON)<120mΩ@VGS=-2.5V

Pb-Free
RoHS COMPLIANT

Product Summary			
V_{DS}	$R_{DS(on)}$ (mΩ) Typ	I_D (A)	Qg (Typ)
-30V	42 @ -10V	-4.2	9.4nc
	53 @ -4.5V	-4	

SOT-23





P-channel MOSFET

MECHANICAL DATA

- Case:SOT-23(TO-236)
- Terminals:Plated solderable per MIL-STD-750,method 2026
- Mounting Position: Any

Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Parameters		Symbol	Value	Unit
Drain-Source voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current (T_J=150℃)	T_A=25℃	I_D	-4.2	A
	T_A=70℃		-3.5	
Pulsed Drain Current [1]		I_{DM}	-30	A
Maximum Power Dissipation @T_A=25℃		P_D	1.4	W
Junction and Storge Temperature Range		T_J,T_{STG}	-55 to +150	℃

Thermal Resistance Ratings

Parameters	Symbol	Typ	Max	Unit
Junction to Ambient，Steady State [2]	$R_{\theta JA}$	-	104	℃/W

SEMICONDUCTOR

JH3401A

P-Channel Enhancement MOSFET

Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameters	Symbol	Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=-250μA	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V,V_{GS}=0V,T_C=25℃	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}= 12V, V_{DS}=0V	-	-	100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250μA	-0.4	-1	-1.3	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}= -10V, I_D=-4.2A	-	42	50	mΩ
		V_{GS}= -4.5V, I_D=-4A	-	53	65	
		V_{GS}= -2.5V, I_D=-1A	-	80	120	
Dynamic						
Input Capacitance	C_{iss}	V_{DS}=-15V,V_{GS}=0V,f=1MHz	-	954	-	pF
Output Capacitance	C_{oss}		-	115	-	
Reverse Transfer Capacitance	C_{rss}		-	77	-	
Total Gate Charge	Qg	V_{DS}=-15V,V_{GS}=-4.5V,I_D=-4A	-	9.4	-	nc
Gate-Source Charge	QGS		-	2	-	
Gate-Drain Charge	QGD		-	3	-	
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-10V,V_{DS}=-15V, R_L=3.6Ω, R_{GEN}=6Ω	-	6.3	-	ns
Turn-On Rise Time	t_r		-	3.2	-	
Turn-off Delay Time	$t_{D(off)}$		-	38.3	-	
Turn-Off Fall Time	t_f		-	12	-	
Drain-Source Body Diode Characteristics						
Maximum Body-Diode Continuous Current	I_S		-	-	-2.2	A
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V	-	-0.75	-1	V

Notes: 1. Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.
2.Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Characteristics

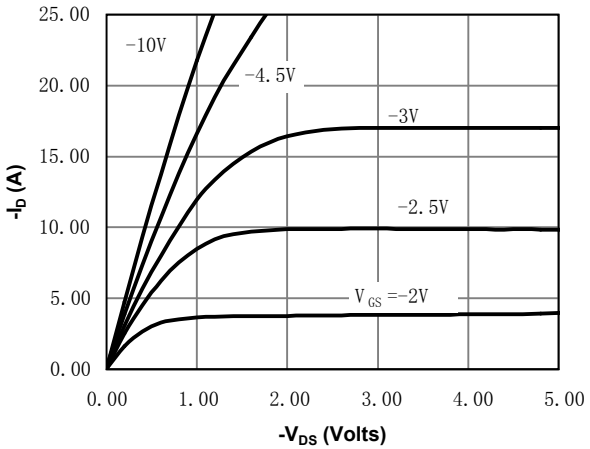


Fig 1: On-Region Characteristics

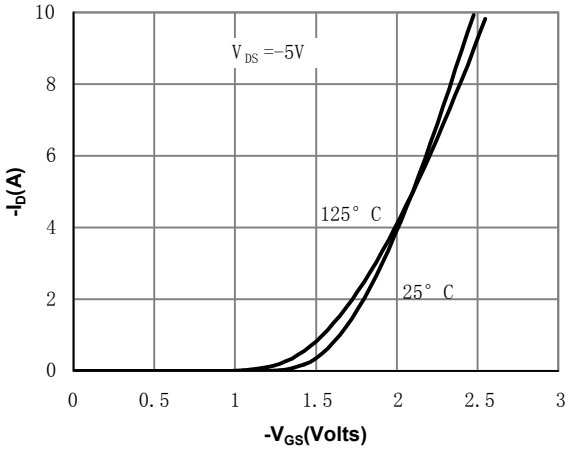


Figure 2: Transfer Characteristics

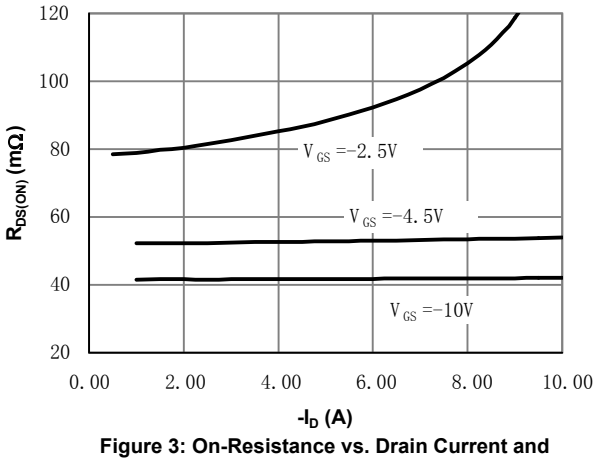


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

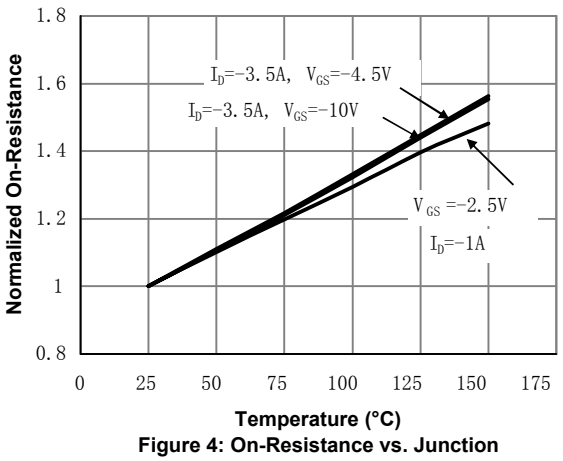


Figure 4: On-Resistance vs. Junction Temperature

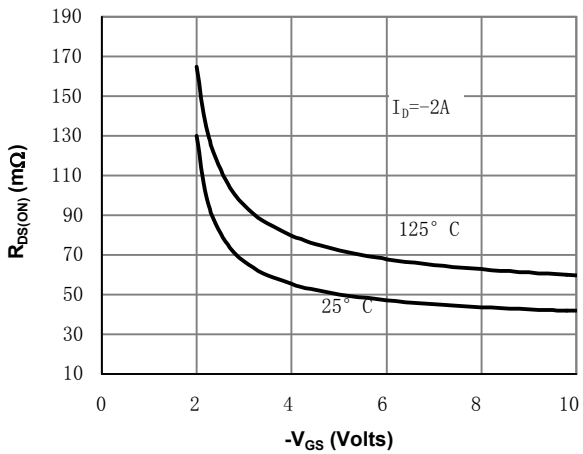


Figure 5: On-Resistance vs. Gate-Source Voltage

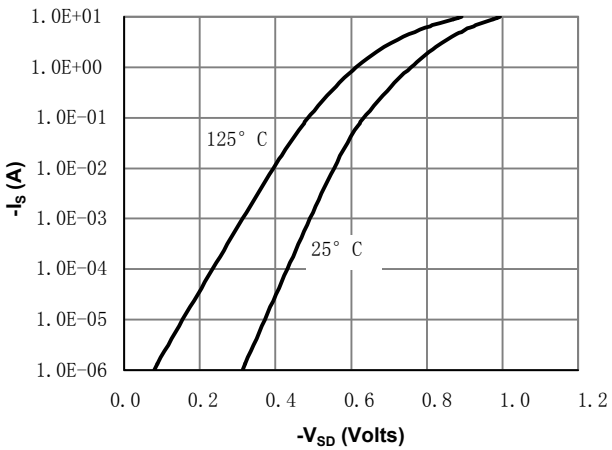


Figure 6: Body-Diode Characteristics

Typical Characteristics

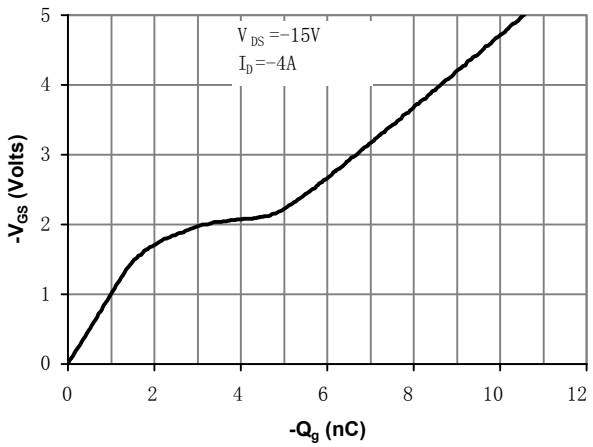


Figure 7: Gate-Charge Characteristics

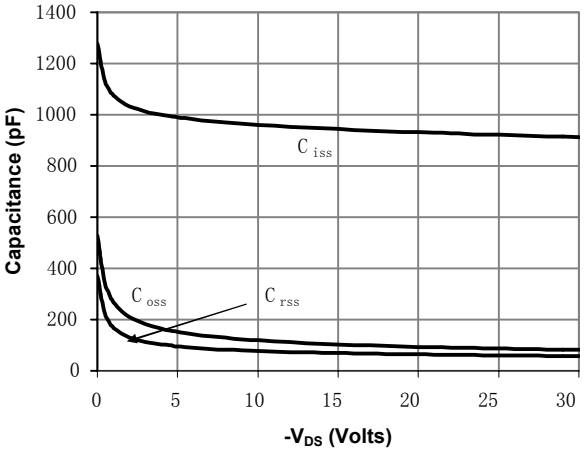


Figure 8: Capacitance Characteristics

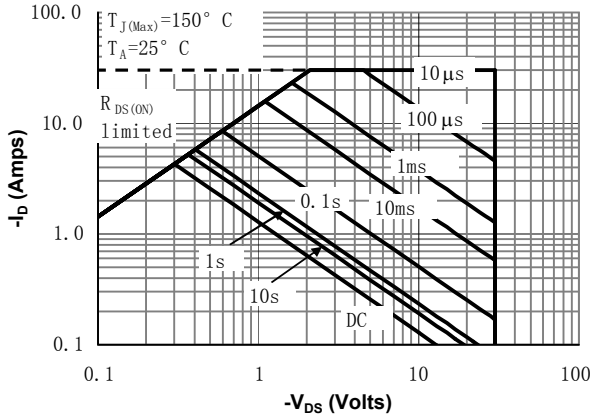


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

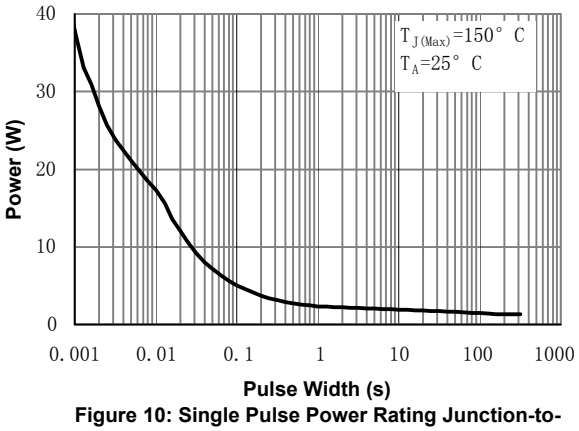


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

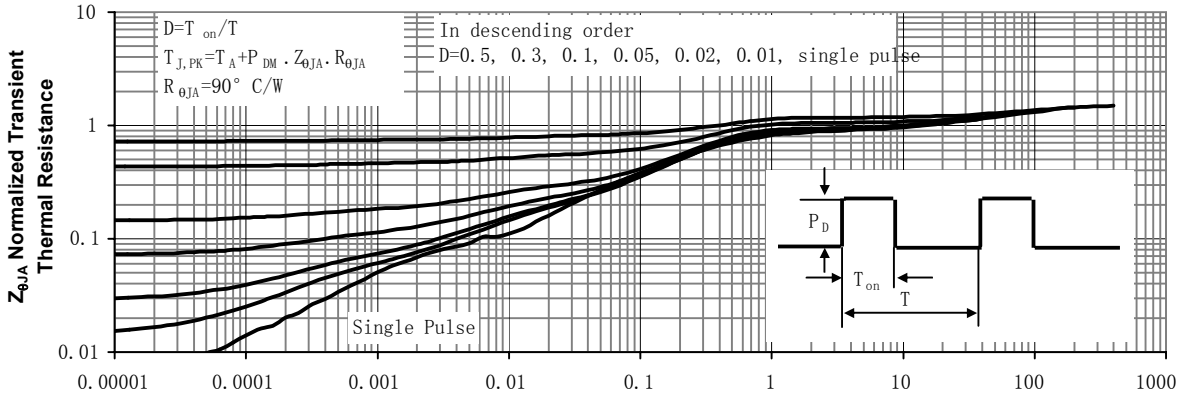
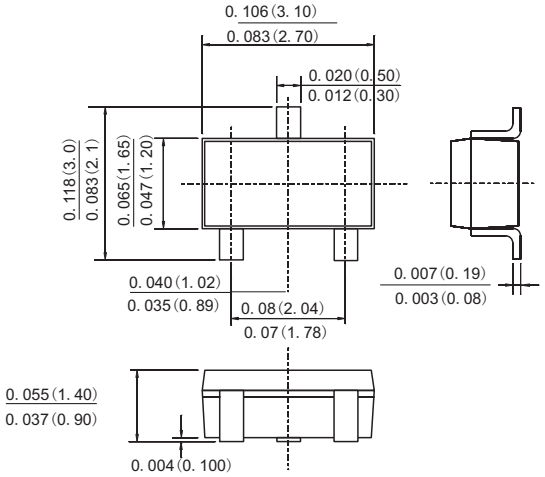


Figure 11: Normalized Maximum Transient Thermal Impedance

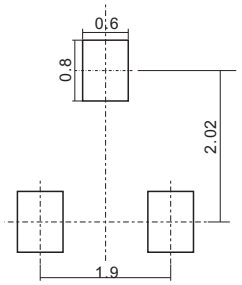
PACKAGE OUTLINE DIMENSIONS

SOT-23



Dimensions in inches and (millimetrers)

Suggested Pad Layout



Dimensions in millimetrers

Friendship Reminder

■ JiNan JingHeng（hereinafter referred to as JH） reserves the right to make changes to this document and its products and specifications at anytime without notice.

■ Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

■ JH makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does JH assume any liability for application assistance or customer product design.

■ JH does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

■ No license is granted by implication or otherwise under any intellectual property rights of JH.

■ JH's products are not authorized for use as critical components in life support devices or systems without express written approval of JH.