



40V P-Channel Enhancement Mode MOSFET

Voltage

-40 V

Current

-3.1A

Features

- RDS(ON), VGS@-10V, ID@-3.1A<88m Ω
- RDS(ON) , VGS@-4.5V, ID@-2.6A<108mΩ
- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. (Halogen Free)

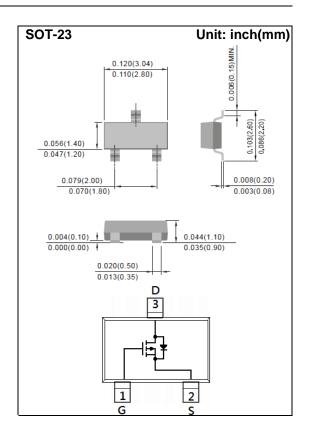
Mechanical Data

Case: SOT-23 Package

• Terminals : Solderable per MIL-STD-750, Method 2026

Approx. Weight: 0.0003 ounces, 0.0084 grams

Marking : A41



$\textbf{Maximum Ratings and Thermal Characteristics} \; (T_A = 25 ^{\circ} \text{C unless otherwise noted})$

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	-40	V
Gate-Source Voltage		V_{GS}	<u>+</u> 20	V
Continuous Drain Current		I _D	-3.1	Α
Pulsed Drain Current (Note 4)		I _{DM}	-12.4	Α
Power Dissipation	T _a =25°C	P_{D}	1.25	W
	Derate above 25°C		10	mW/°C
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Typical Thermal resistance				
- Junction to Ambient (Note 3)		$R_{\theta JA}$	100	°C/W





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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS		
Static								
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-40	-	-	V		
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_{D}=-250uA$	-1.0	-1.5	-2.5	V		
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-3.1A	-	74	88	mΩ		
		V_{GS} =-4.5V, I_{D} =-2.6A	-	88	108			
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V, V _{GS} =0V	-	-0.01	-1	uA		
Gate-Source Leakage Current	I _{GSS}	V _{GS} = <u>+</u> 20V, V _{DS} =0V	-	<u>+</u> 10	<u>+</u> 100	nA		
Dynamic (Note 5)								
Total Gate Charge	Q_g	V _{DS} =-20V, I _D =-3.1A, V _{GS} =-4.5V ^(Note 1,2)	-	6	-			
Gate-Source Charge	Q_gs		-	1.6	-	nC		
Gate-Drain Charge	Q_gd		-	2.3	-			
Input Capacitance	Ciss	V _{DS} =-20V, V _{GS} =0V, f=1.0MHZ	-	505	-	pF		
Output Capacitance	Coss		-	48	-			
Reverse Transfer Capacitance	Crss		-	33	-			
Turn-On Delay Time	td _(on)	V_{DD} =-20V, I_{D} =-2.5A, V_{GS} =-10V, R_{G} =1 Ω (Note 1,2)	-	6	-	ns		
Turn-On Rise Time	tr		-	35	-			
Turn-Off Delay Time	td _(off)		-	18	-			
Turn-Off Fall Time	tf		-	10	-			
Drain-Source Diode								
Maximum Continuous Drain-Source	ı				-1.0	А		
Diode Forward Current	I _S		-	-				
Diode Forward Voltage	V_{SD}	I _S =-1.0A, V _{GS} =0V	-	-0.82	-1.2	V		
Reverse Recovery Time	trr	V _{GS} =0V, I _S =-2.5A dI _F / dt=100A/us	-	13	-	ns		
Reverse Recovery Charge	Qrr		-	8.7	-	nC		

NOTES:

- 1. Pulse width<a>300us, Duty cycle<a>2%
- 2. Essentially independent of operating temperature typical characteristics.
- 3. Rejah is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper.
- 4. The maximum current rating is package limited.
- 5. Guaranteed by design, not subject to production testing.





TYPICAL CHARACTERISTIC CURVES

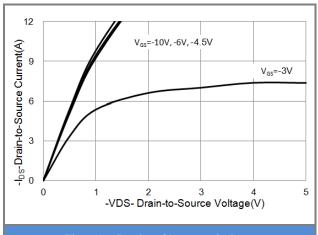


Fig.1 On-Region Characteristics

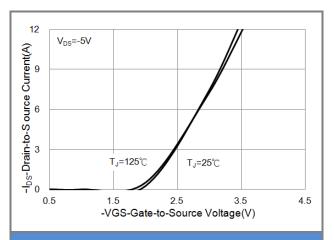


Fig.2 Transfer Characteristics

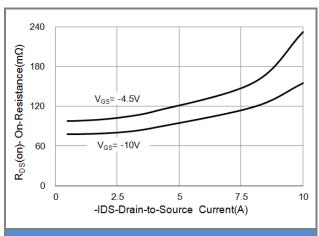


Fig.3 On-Resistance vs. Drain Current

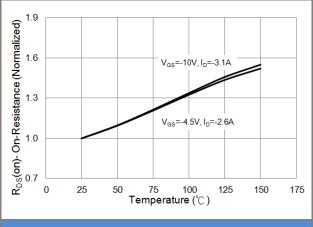


Fig.4 On-Resistance vs. Junction temperature

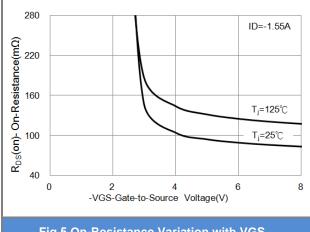


Fig.5 On-Resistance Variation with VGS.

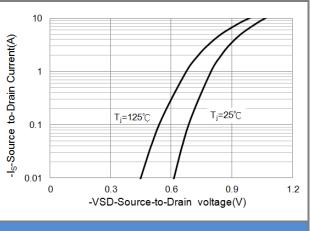


Fig.6 Body Diode Characteristics





TYPICAL CHARACTERISTIC CURVES

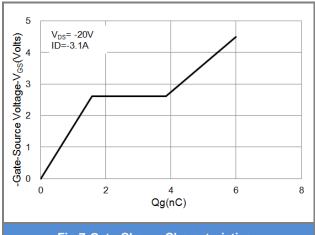


Fig.7 Gate-Charge Characteristics

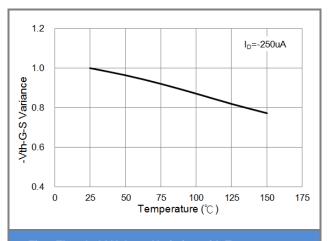


Fig.8 Threshold Voltage Variation with Temperature.

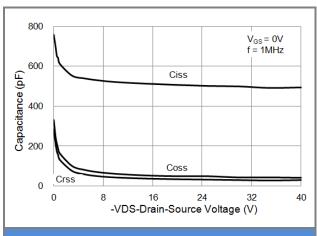


Fig.9 Capacitance vs. Drain-Source Voltage.

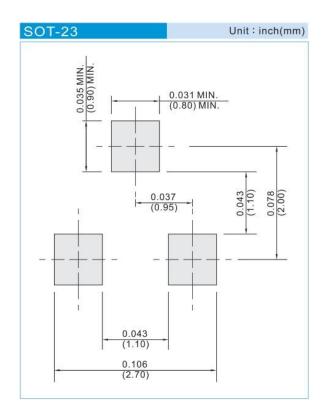




PART NO PACKING CODE VERSION

PART NO PACKING CODE	Package Type	Packing type	Marking	Version
PJA3441_R1_00001	SOT-23	3K pcs / 7" reel	A41	Halogen free
PJA3441_R2_00001	SOT-23	12K pcs / 13" reel	A41	Halogen free

MOUNTING PAD LAYOUT







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