PANJ SEMI CONDUCTOR

Voltage

Features

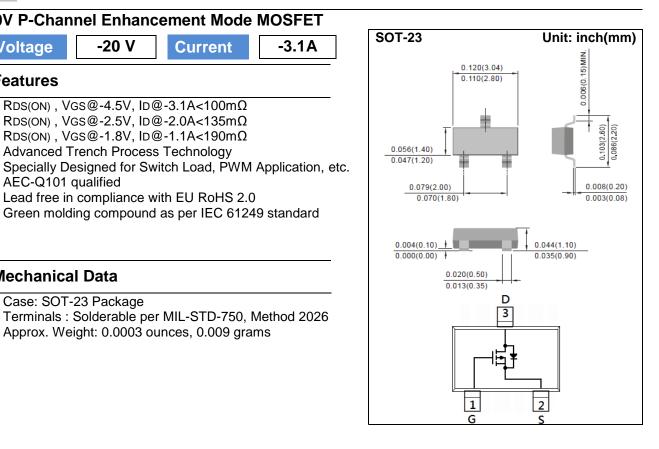
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PJA3411-AU



20V P-Channel Enhancement Mode MOSFET

Current

-3.1A

-20 V

• RDS(ON), VGS@-4.5V, ID@-3.1A<100mΩ RDS(ON), VGS@-2.5V, ID@-2.0A<135mΩ

Advanced Trench Process Technology

RDS(ON), VGS@-1.8V, ID@-1.1A<190mΩ

Lead free in compliance with EU RoHS 2.0

Mechanical Data

AEC-Q101 qualified

- Case: SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026

• Green molding compound as per IEC 61249 standard

• Approx. Weight: 0.0003 ounces, 0.009 grams

Maximum Ratings and Thermal Characteristics (T_A=25[°]C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	-20	V
Gate-Source Voltage		V _{GS}	<u>+</u> 12	V
Continuous Drain Current		I _D	-3.1	А
Pulsed Drain Current		I _{DM}	-12.4	А
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 _{eja}	100	°C/W



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Electrical Characteristics ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static	••••••					
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_{D}=-250$ uA	-0.4	-0.71	-1.2	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-3.1A	-	84	100	mΩ
		V _{GS} =-2.5V, I _D =-2.0A	-	104	135	
		V _{GS} =-1.8V, I _D =-1.1A	-	134	190	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V	-	-0.01	-1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = <u>+</u> 12V, V _{DS} =0V	-	<u>+</u> 10	<u>+</u> 100	nA
Dynamic						
Total Gate Charge	Qg	V_{DS} =-10V, I _D =-3.1A, V_{GS} =-4.5V ^(Note 1,2)	-	5.4	-	nC
Gate-Source Charge	Q_gs		-	0.7	-	
Gate-Drain Charge	Q_gd		-	1.3	-	
Input Capacitance	Ciss	V _{DS} =-10V, V _{GS} =0V,	-	416	-	pF
Output Capacitance	Coss		-	43	-	
Reverse Transfer Capacitance	Crss	f=1.0MHZ	-	32	-	
Switching						
Turn-On Delay Time	td _(on)		-	4	-	ns
Turn-On Rise Time	tr	V_{DD} =-10V, I_{D} =-3.1A, V_{GS} =-4.5V, R_{G} =6 Ω ^(Note 1,2)	-	27	-	
Turn-Off Delay Time	td _(off)		-	78	-	
Turn-Off Fall Time	tf	K _G =012	-	45	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S		-	-	-1.5	A
Diode Forward Voltage	V_{SD}	I _S =-1.0A, V _{GS} =0V	-	0.8	-1.2	V

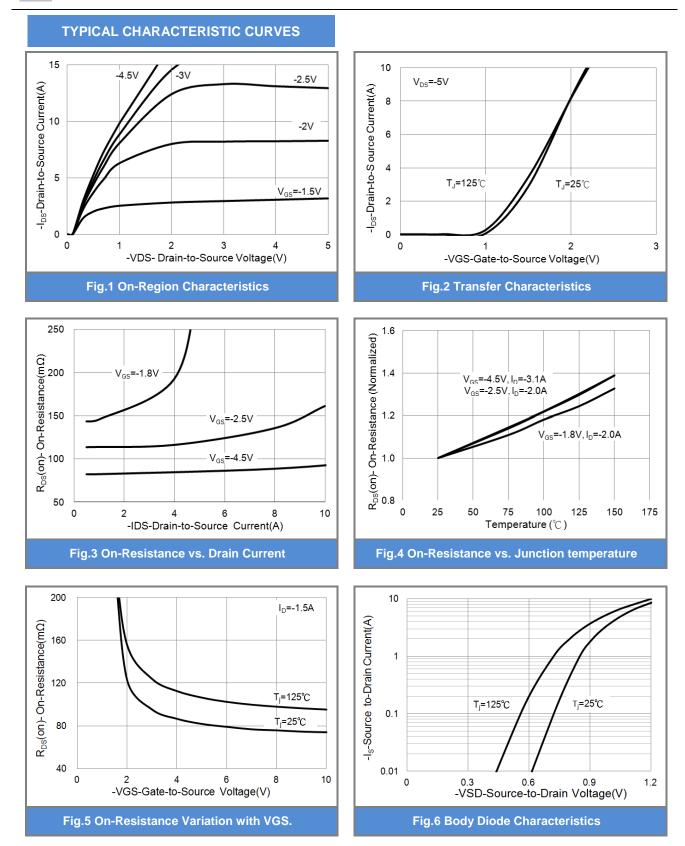
NOTES :

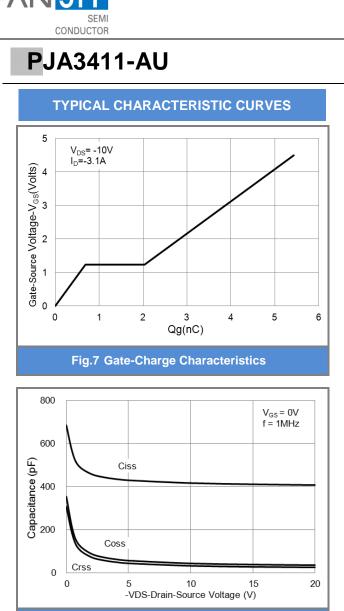
- 1. Pulse width</br>
- 2. Essentially independent of operating temperature typical characteristics.
- 3. R_{0JA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper
- 4. The maximum current rating is package limited



SEMI CONDUCTOR

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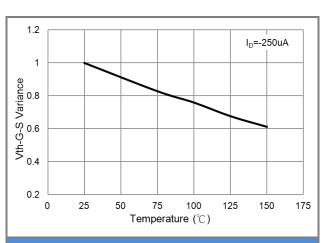


Fig.8 Threshold Voltage Variation with Temperature.







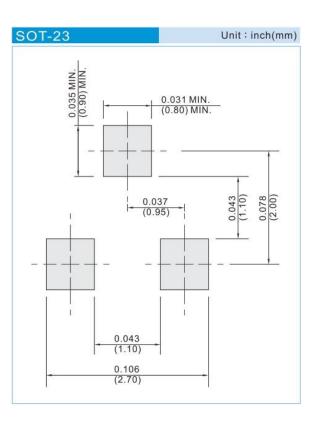


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PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJA3411-AU_R1_000A1	SOT-23	3K pcs / 7" reel	A11	Halogen free
PJA3411-AU_R2_000A1	SOT-23	12K pcs / 13" reel	A11	Halogen free

MOUNTING PAD LAYOUT





PJA3411-AU

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