

PJS6415A-AU

20V P-Channel Enhancement Mode MOSFET

Voltage

-20 V

Current

-5.2A

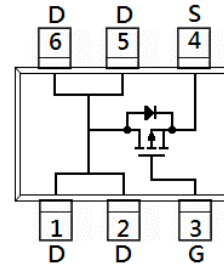
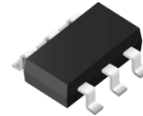
Features

- $R_{DS(ON)}$, $V_{GS}@-4.5V$, $I_D@-5.2A < 48m\Omega$
- $R_{DS(ON)}$, $V_{GS}@-2.5V$, $I_D@-3.0A < 60m\Omega$
- $R_{DS(ON)}$, $V_{GS}@-1.8V$, $I_D@-1.5A < 88m\Omega$
- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOT-23 6L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0005 ounces, 0.0142 grams

SOT-23 6L



Maximum Ratings and Thermal Characteristics ($T_A=25^\circ C$ unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current ^(Note 4)		I_D	-5.2	A
Pulsed Drain Current ^(Note 1)		I_{DM}	-20.8	
Power Dissipation	$T_a=25^\circ C$	P_D	2	W
	Derate above $25^\circ C$		16	mW/ $^\circ C$
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ C$
Typical Thermal Resistance		$R_{\theta JA}$	62.5	$^\circ C/W$
- Junction to Ambient ^(Note 3,4)				

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

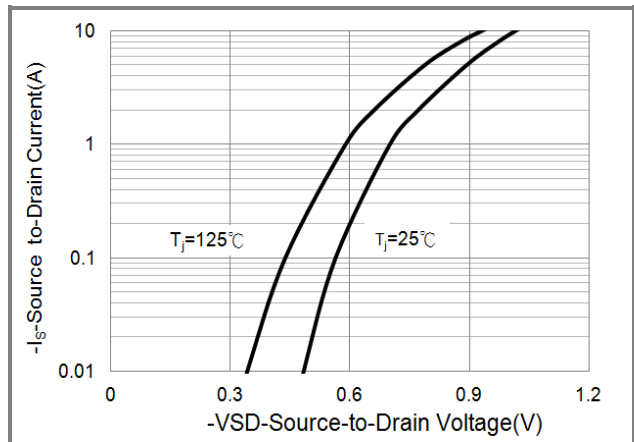
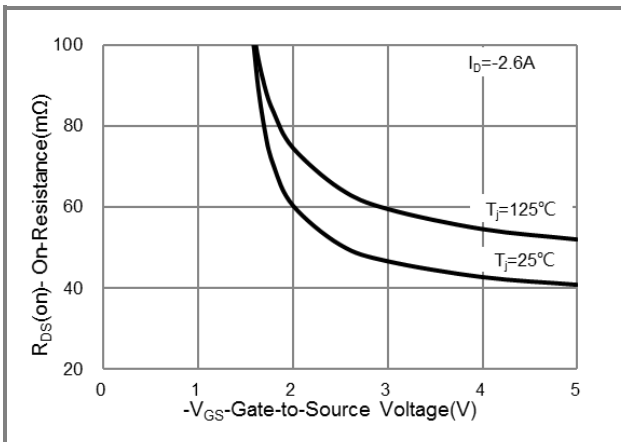
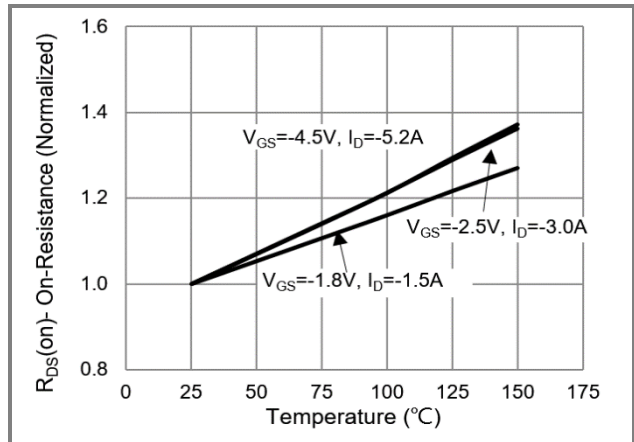
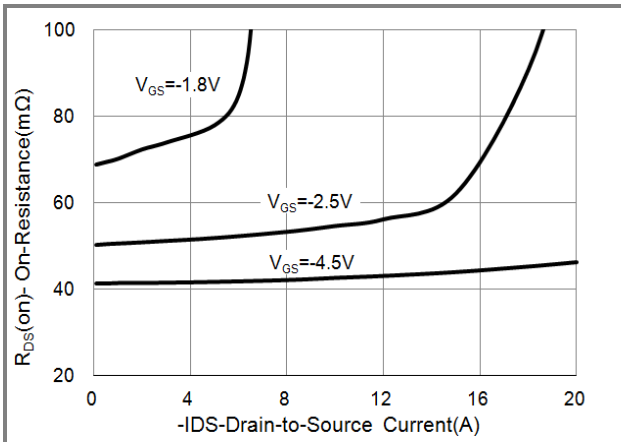
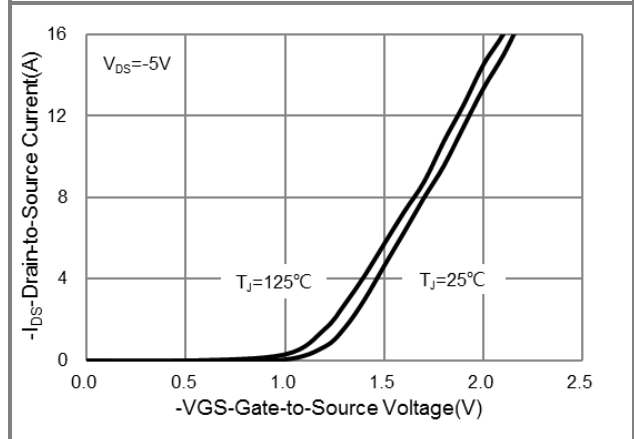
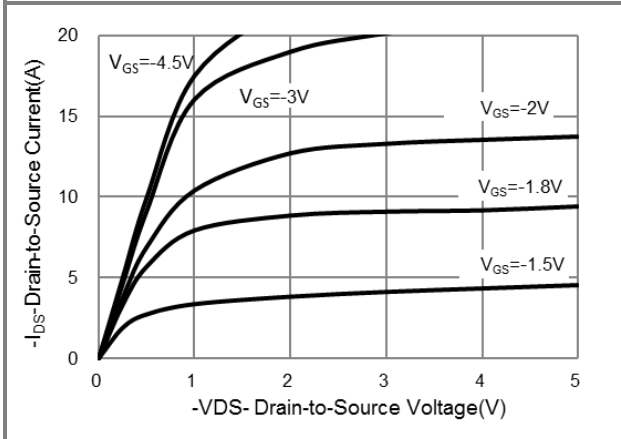
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-20	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-0.5	-0.74	-1.3	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-5.2A	-	40	48	mΩ
		V _{GS} =-2.5V, I _D =-3A	-	50	60	
		V _{GS} =-1.8V, I _D =-1.5A	-	75	88	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V	-	-	-1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
Dynamic (Note 5)						
Total Gate Charge	Q _g	V _{DS} =-10V, I _D =-5.2A, V _{GS} =-4.5V(Note 1,2)	-	10	-	nC
Gate-Source Charge	Q _{gs}		-	1.7	-	
Gate-Drain Charge	Q _{gd}		-	2.4	-	
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHZ	-	980	-	pF
Output Capacitance	C _{oss}		-	100	-	
Reverse Transfer Capacitance	C _{rss}		-	81	-	
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} =-10V, I _D =-5.2A, V _{GS} =-4.5V, R _G =6Ω(Note 1,2)	-	9.8	-	ns
Turn-On Rise Time	t _r		-	54	-	
Turn-Off Delay Time	t _{d(off)}		-	44	-	
Turn-Off Fall Time	t _f		-	31	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	-2	A
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V	-	-0.78	-1.2	V

NOTES :

1. Pulse width≤300us, Duty cycle≤2%.
2. Essentially independent of operating temperature typical characteristics.
3. R_{θJA} 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.

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TYPICAL CHARACTERISTIC CURVES



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TYPICAL CHARACTERISTIC CURVES

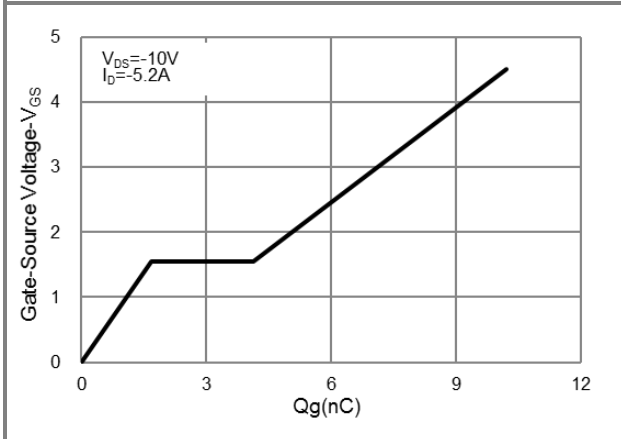


Fig.7 Gate-Charge Characteristics

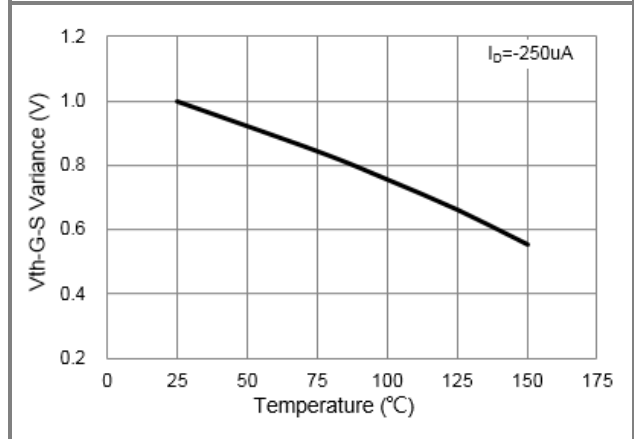


Fig.8 Threshold Voltage Variation with Temperature

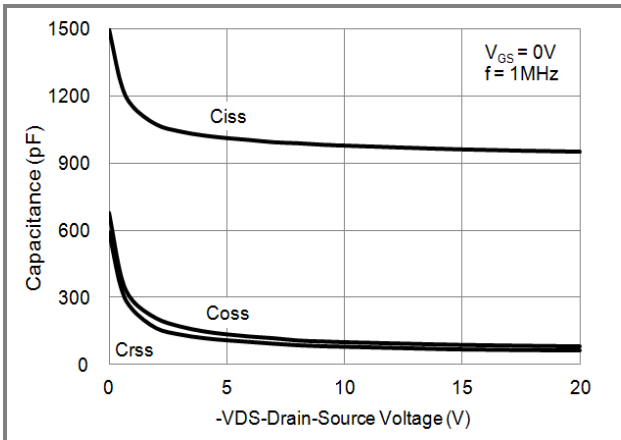


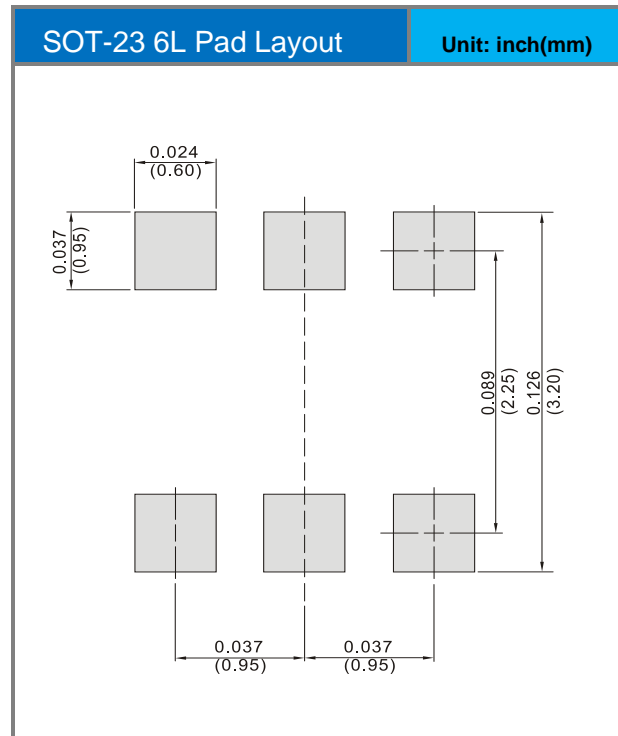
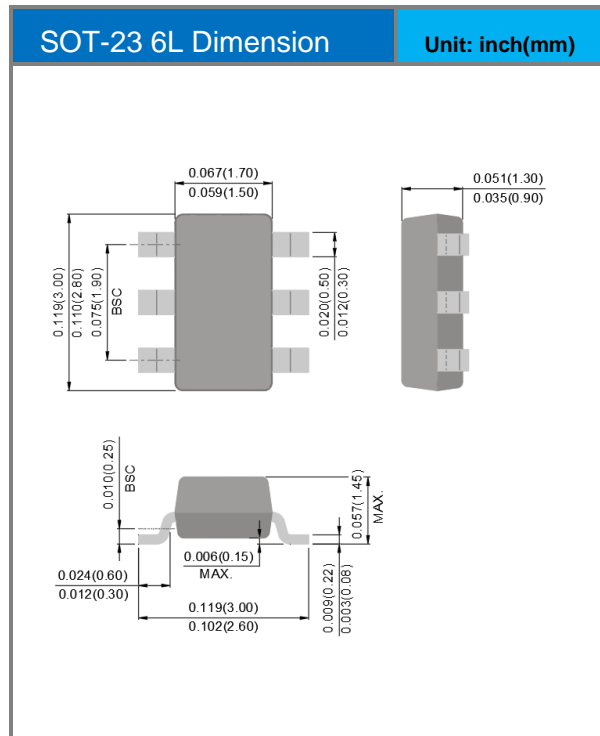
Fig.9 Capacitance vs. Drain-Source Voltage

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PJS6415A-AU	SOT-23 6L	3K pcs / 7" reel	S5A

Packaging Information & Mounting Pad Layout



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