



PJS6830

20V Dual N-Channel Enhancement Mode MOSFET – ESD Protected

Voltage

20 V

Current

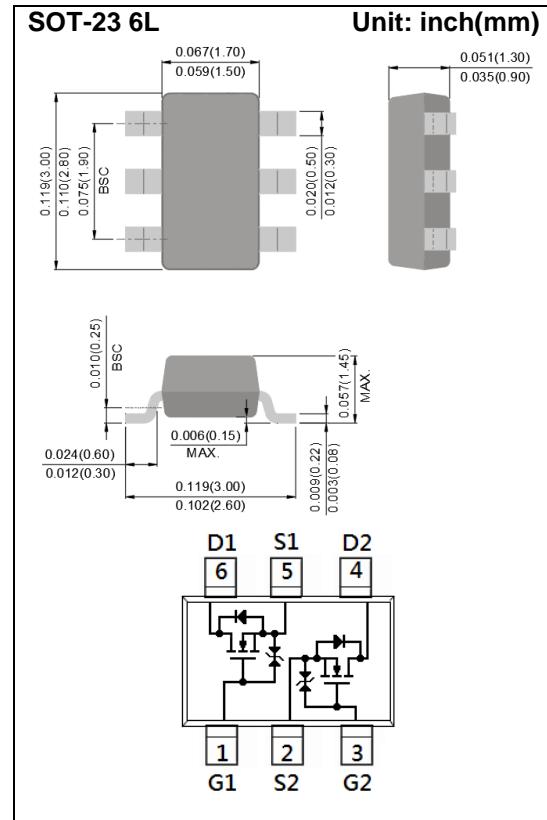
2 A

Features

- RDS(ON) , VGS@4.5V, ID@2.0A<150mΩ
- RDS(ON) , VGS@2.5V, ID@1.5A<215mΩ
- RDS(ON) , VGS@1.8V, ID@0.5A<400mΩ
- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc.
- ESD Protected 2KV HBM
- 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, 0.0141 grams



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

PARAMETER	SYMBOL	LIMIT	UNITS
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current ^(Note 4)	I_{DM}	8	A
Power Dissipation	$T_a=25^\circ\text{C}$	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



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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$\text{V}_{\text{GS}}=0\text{V}, \text{I}_D=250\mu\text{A}$	20	-	-	V
Gate Threshold Voltage	$\text{V}_{\text{GS(th)}}$	$\text{V}_{\text{DS}}=\text{V}_{\text{GS}}, \text{I}_D=250\mu\text{A}$	0.5	0.8	1.0	V
Drain-Source On-State Resistance	$\text{R}_{\text{DS(on)}}$	$\text{V}_{\text{GS}}=4.5\text{V}, \text{I}_D=2.0\text{A}$	-	105	150	$\text{m}\Omega$
		$\text{V}_{\text{GS}}=2.5\text{V}, \text{I}_D=1.5\text{A}$	-	150	215	
		$\text{V}_{\text{GS}}=1.8\text{V}, \text{I}_D=0.5\text{A}$	-	250	400	
Zero Gate Voltage Drain Current	I_{DSS}	$\text{V}_{\text{DS}}=20\text{V}, \text{V}_{\text{GS}}=0\text{V}$	-	0.01	1	μA
Gate-Source Leakage Current	I_{GSS}	$\text{V}_{\text{GS}}=\pm 8\text{V}, \text{V}_{\text{DS}}=0\text{V}$	-	± 2	± 10	μA
Dynamic ^(Note 5)						
Total Gate Charge	Q_g	$\text{V}_{\text{DS}}=10\text{V}, \text{I}_D=2\text{A}, \text{V}_{\text{GS}}=4.5\text{V}^{(\text{Note 1,2})}$	-	1.8	-	nC
Gate-Source Charge	Q_{gs}		-	0.4	-	
Gate-Drain Charge	Q_{gd}		-	0.45	-	
Input Capacitance	C_{iss}	$\text{V}_{\text{DS}}=10\text{V}, \text{V}_{\text{GS}}=0\text{V}, \text{f}=1.0\text{MHZ}$	-	92	-	pF
Output Capacitance	C_{oss}		-	25	-	
Reverse Transfer Capacitance	Crss		-	9.1	-	
Turn-On Delay Time	$\text{t}_{\text{d(on)}}$	$\text{V}_{\text{DD}}=10\text{V}, \text{I}_D=2\text{A}, \text{V}_{\text{GS}}=4.5\text{V}, \text{R}_G=6\Omega^{(\text{Note 1,2})}$	-	6.5	-	ns
Turn-On Rise Time	tr		-	26.5	-	
Turn-Off Delay Time	$\text{t}_{\text{d(off)}}$		-	43	-	
Turn-Off Fall Time	tf		-	34	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_{s}	---	-	-	1.6	A
Diode Forward Voltage	V_{SD}	$\text{I}_{\text{s}}=1.6\text{A}, \text{V}_{\text{GS}}=0\text{V}$	-	0.9	1.2	V

NOTES :

1. Pulse width $\leq 300\text{us}$, Duty cycle $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics.
3. R_{QJA} 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

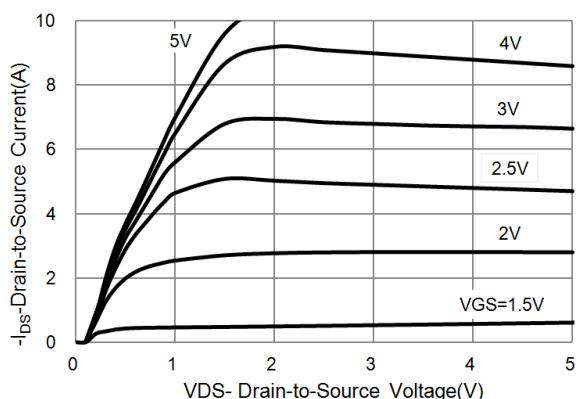


Fig.1 On-Region Characteristics

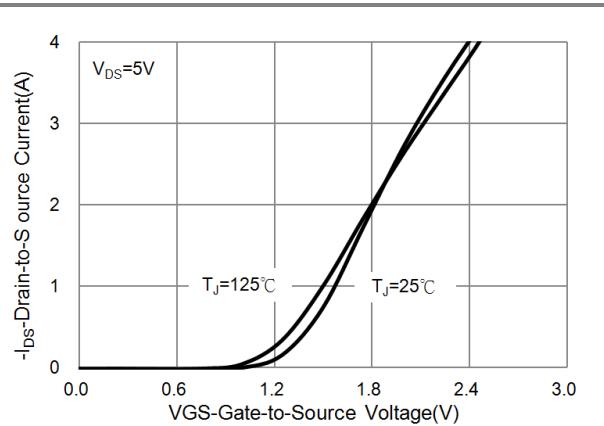


Fig.2 Transfer Characteristics

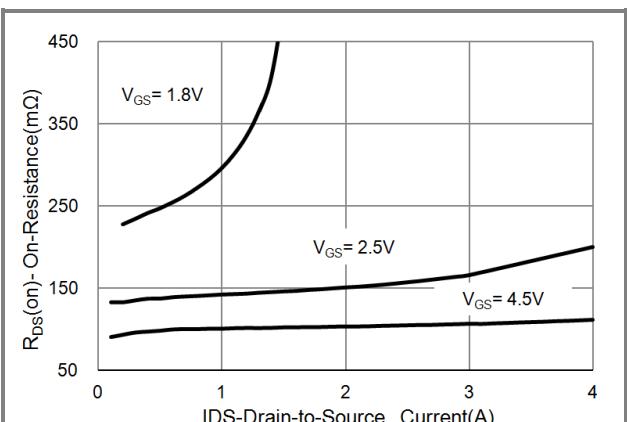


Fig.3 On-Resistance vs. Drain Current

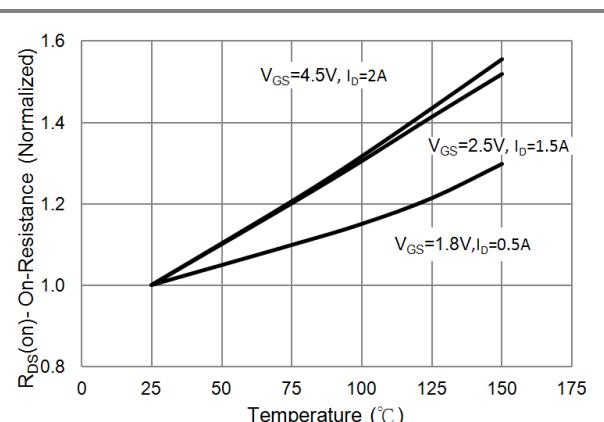


Fig.4 On-Resistance vs. Junction temperature

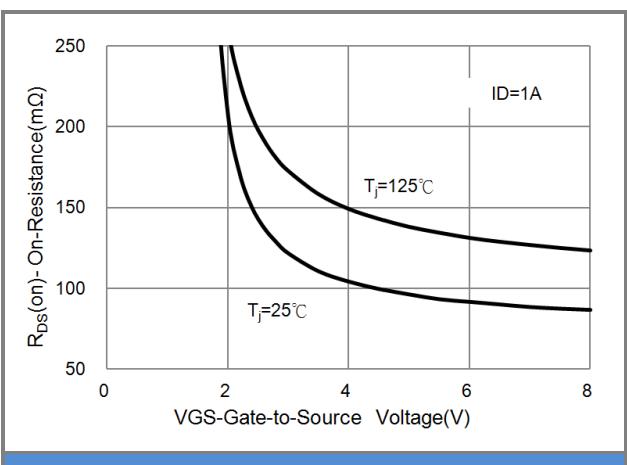


Fig.5 On-Resistance Variation with VGS.

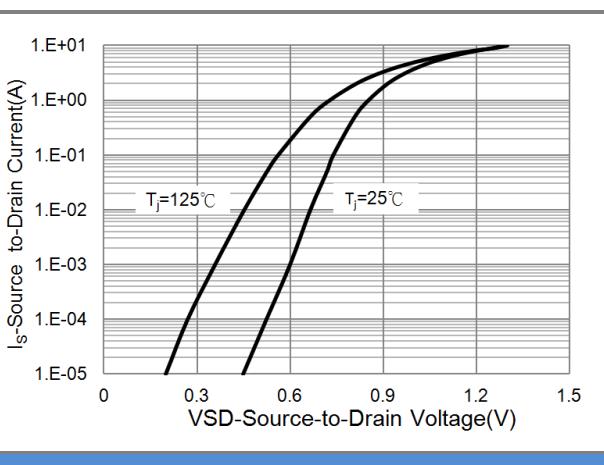
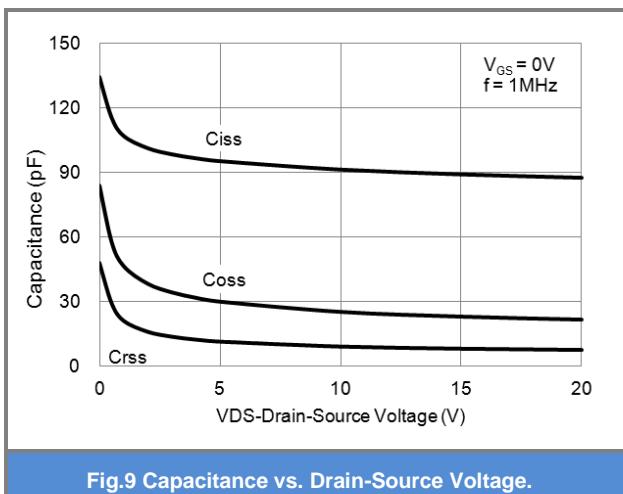
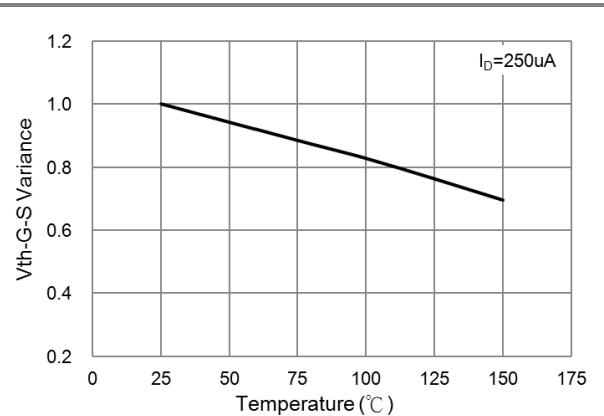
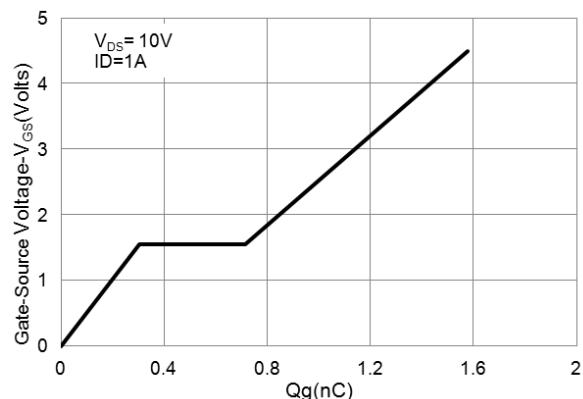


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES



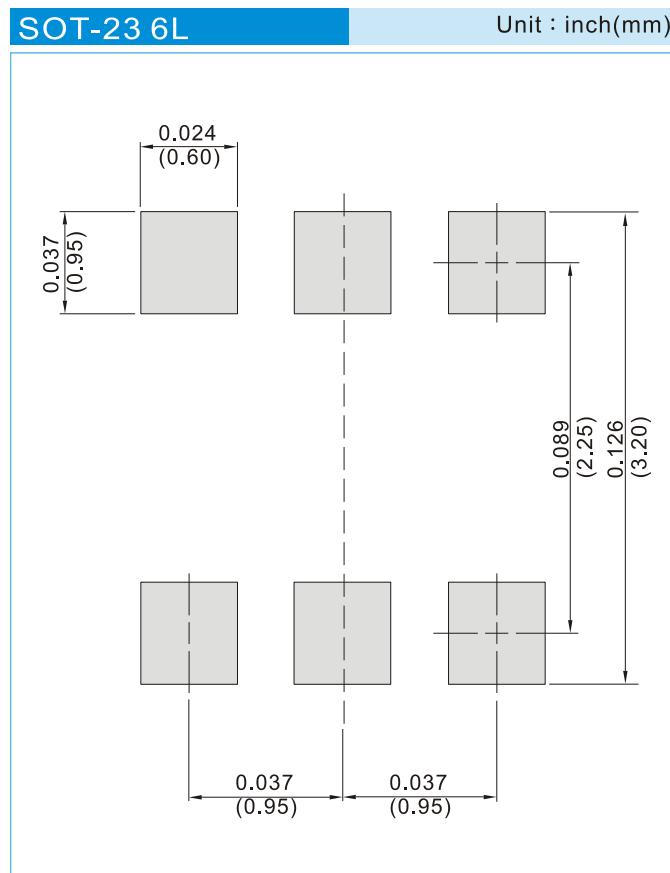


PJS6830

Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJS6830_S1_00001	SOT-23 6L	3K pcs / 7" reel	SG0	Halogen free RoHS compliant

Mounting Pad Layout





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