

PJL9830A

60V Dual N-Channel Enhancement Mode MOSFET

Voltage	60 V	Current	4.8 A
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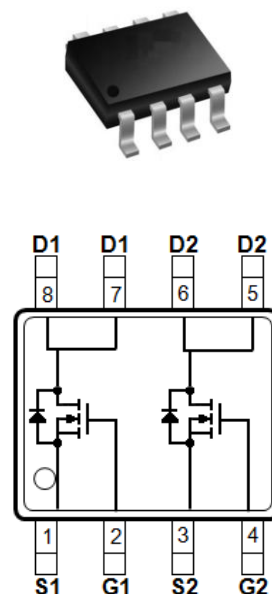
Features

- $R_{DS(ON)}$, $V_{GS}@10V, I_D@4.8A < 50m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V, I_D@2.4A < 60m\Omega$
- High switching speed
- Improved dv/dt capability
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std. (Halogen Free)

Mechanical Data

- Case: SOP-8 package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0029 ounces, 0.083 grams
- Marking: L9830A

SOP-8



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	60	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _A =25°C	I _D	4.8	A
	T _A =70°C		3.8	
Pulsed Drain Current ^(Note 1)		I _{DM}	19.2	A
Power Dissipation	T _A =25°C	P _D	2.5	W
	T _A =70°C		1.6	
Single Pulse Avalanche Energy ^(Note 5)		E _{AS}	11	mJ
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55~150	°C
Typical Thermal resistance		R _{θJA}	50	°C/W
- Junction to Ambient, t ≤ 10s ^(Note 6)				



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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}	V _{GS} =0V, I _D =250uA	60	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.77	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =4.8A	-	37	50	mΩ
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =2.4A	-	42	60	mΩ
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	-	-	1.0	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Dynamic ^(Note 7)						
Total Gate Charge	Q _g	V _{DS} =30V, I _D =4A, V _{GS} =10V ^(Note 1,2)	-	14	-	nC
Gate-Source Charge	Q _{gs}		-	2.9	-	
Gate-Drain Charge	Q _{gd}		-	2.3	-	
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHZ	-	815	-	pF
Output Capacitance	C _{oss}		-	379	-	
Reverse Transfer Capacitance	C _{rss}		-	110	-	
Turn-On Delay Time	td _(on)	V _{DD} =30V, I _D =1A, V _{GS} =10V, R _G =3.3Ω ^(Note 1,2)	-	3.9	-	ns
Turn-On Rise Time	tr		-	13	-	
Turn-Off Delay Time	td _(off)		-	23	-	
Turn-Off Fall Time	tf		-	6.7	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	4.8	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V	-	0.73	1.0	V

NOTES :

1. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics.
3. The maximum current rating is package limited.
4. Repetitive rating, pulse width limited by junction temperature $T_J(\text{MAX})=150^{\circ}\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^{\circ}\text{C}$.
5. The test condition is $L=0.1\text{mH}$, $I_{AS}=15A$, $V_{DD}=25V$, $V_{GS}=10V$
6. $R_{\theta JA}$ 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 inch² with 2oz.square pad of copper.
7. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

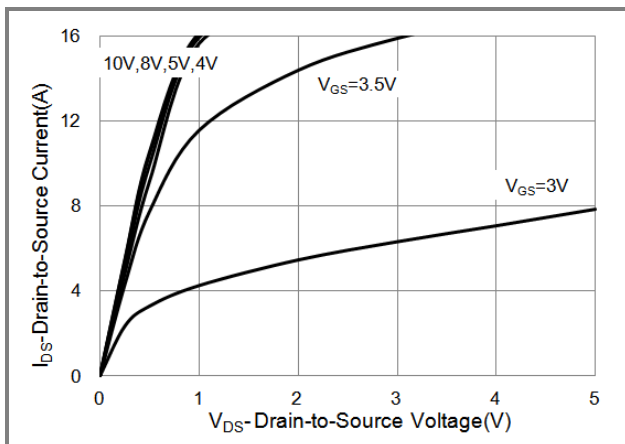


Fig.1 On-Region Characteristics

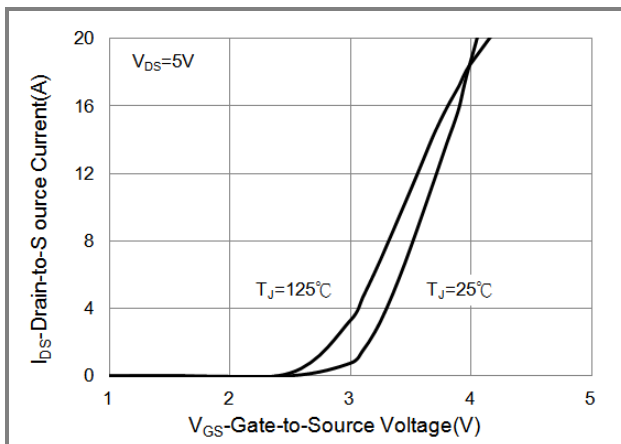


Fig.2 Transfer Characteristics

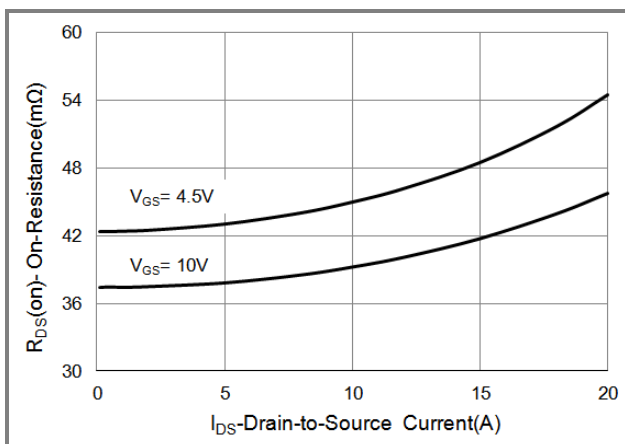


Fig.3 On-Resistance vs. Drain Current

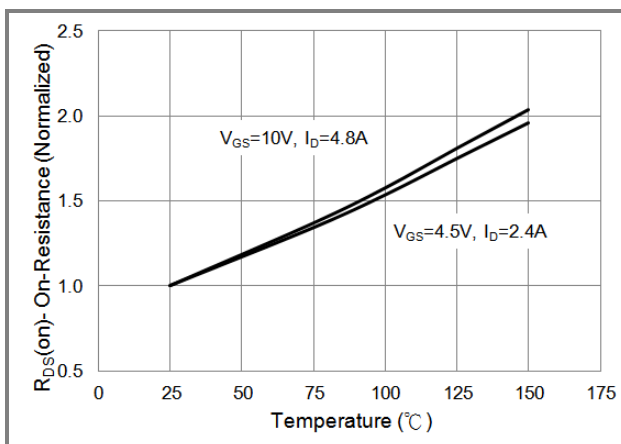


Fig.4 On-Resistance vs. Junction temperature

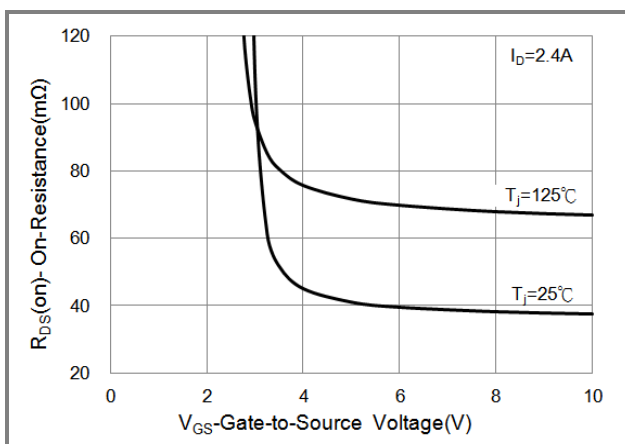


Fig.5 On-Resistance Variation with V_GS.

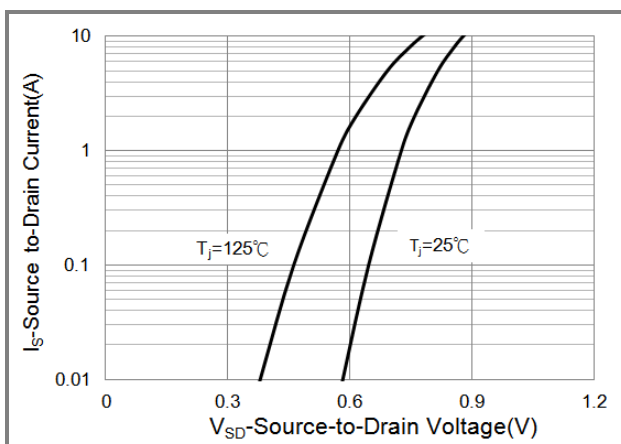


Fig.6 Body Diode Characteristics

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TYPICAL CHARACTERISTIC CURVES

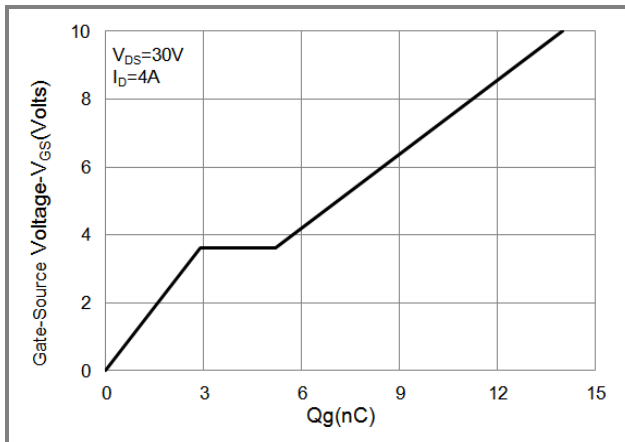


Fig.7 Gate-Charge Characteristics

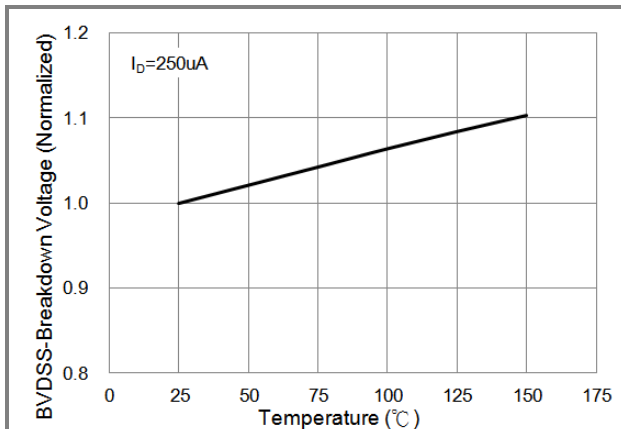


Fig.8 Breakdown Voltage Variation vs. Temperature

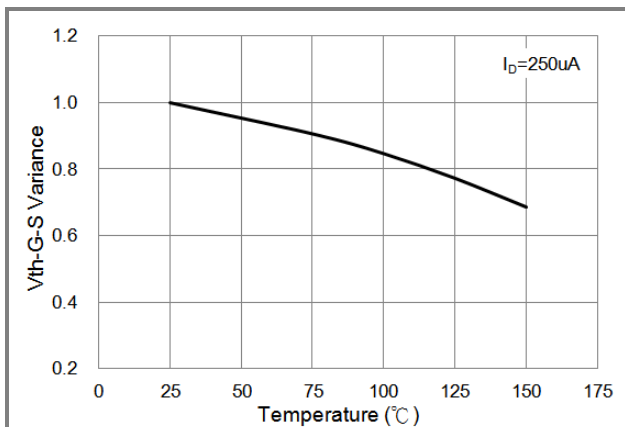


Fig.9 Threshold Voltage Variation with Temperature.

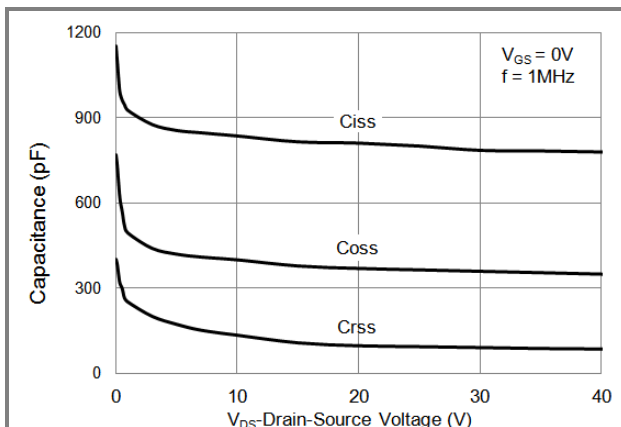


Fig.10 Capacitance vs. Drain-Source Voltage.

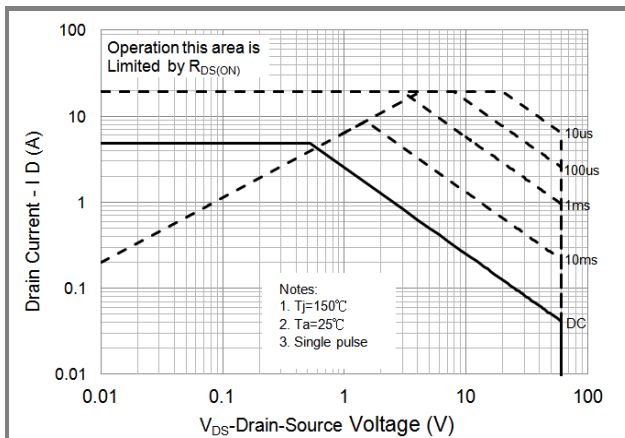
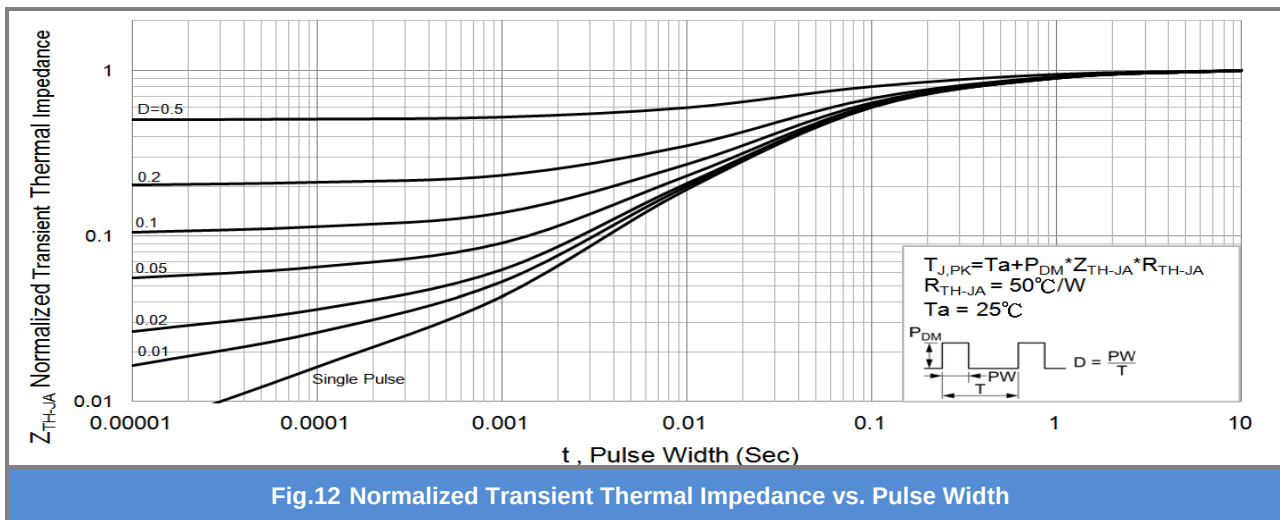


Fig.11 Maximum Safe Operating Area



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TYPICAL CHARACTERISTIC CURVES

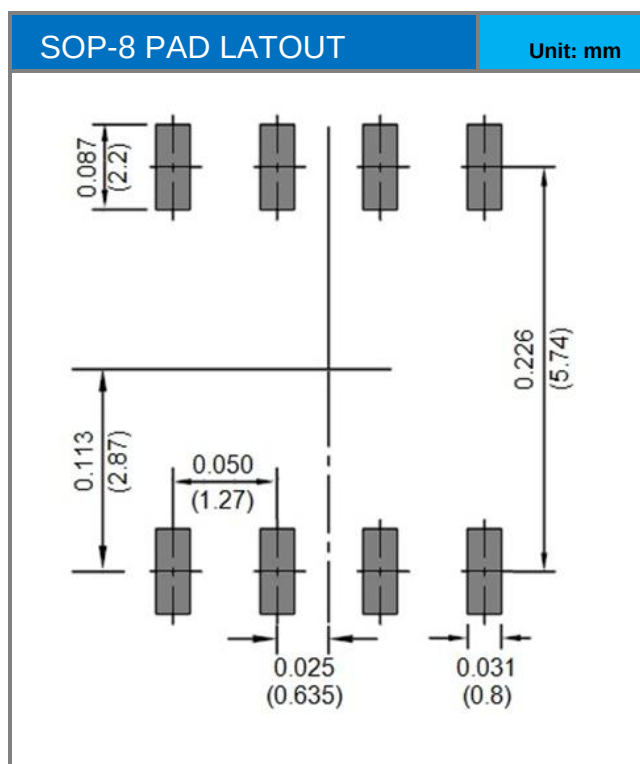
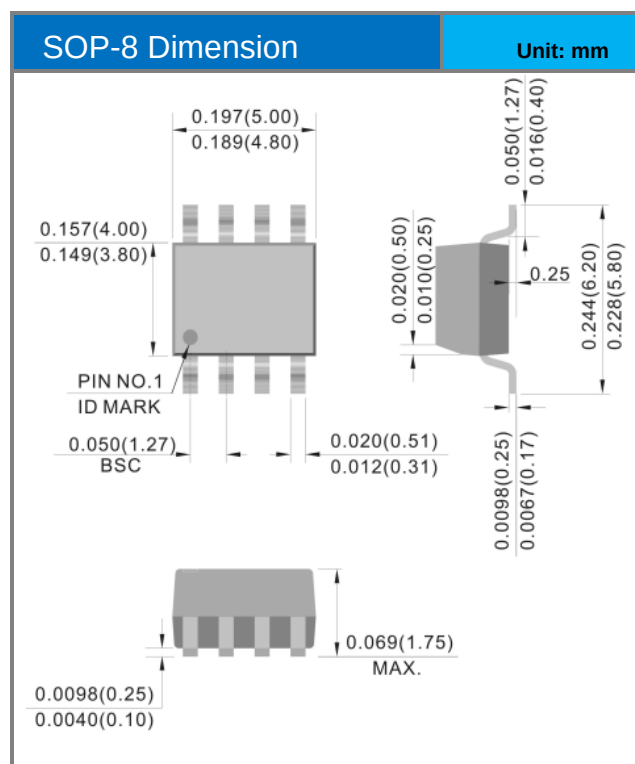


PJL9830A

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJL9830A_R2_00001	SOP-8	2.5K pcs / 13" reel	L9830A	Halogen free

Packaging Information & Mounting Pad Layout





PJL9830A

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