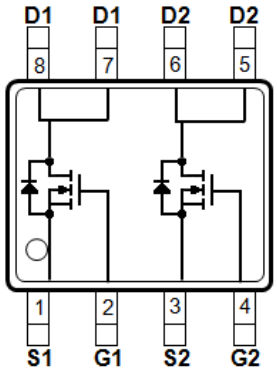
PJL9830A

60V Dual N-Channel Enhancement Mode MOSFET

Voltage	60 V	Current	4.8 A

SOP-8



Features

- $R_{DS(ON)}$, V_{GS}@10V,I_D@4.8A<50mΩ
- $R_{DS(ON)}$, V_{GS}@4.5V,I_D@2.4A<60mΩ
- 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

Maximum Ratings and Thermal Characteristics (T_A=25°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 - Junction to Ambient, t≦10s (Note 6)		$R_{\theta JA}$	50	°C/W

PJL9830A

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	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	Ciss	V_{DS}=15V, V_{GS}=0V, f=1.0MHZ	-	815	-	pF
Output Capacitance	Coss		-	379	-	
Reverse Transfer Capacitance	Crss		-	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≤300us, Duty cycle≤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 TJ(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°C.
5. The test condition is L=0.1mH, 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 $inch^2$ with 2oz.square pad of copper.
7. Guaranteed by design, not subject to production testing.

PJL9830A

TYPICAL CHARACTERISTIC CURVES

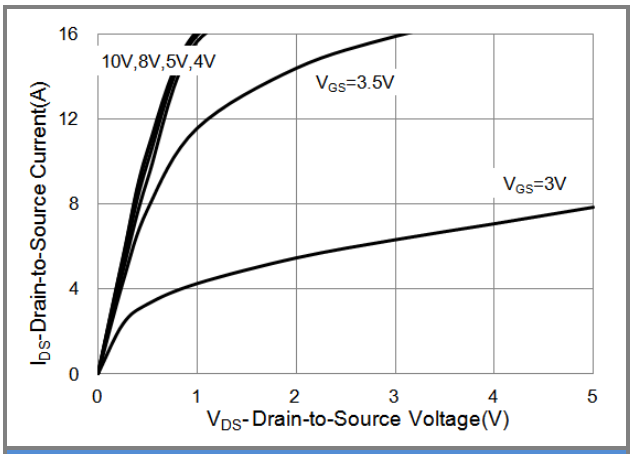


Fig.1 On-Region Characteristics

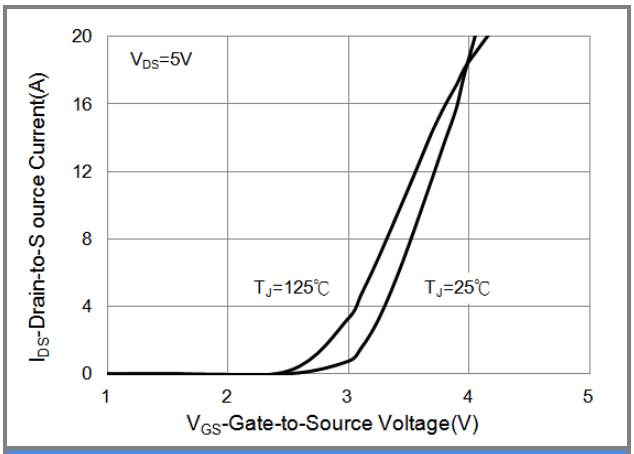


Fig.2 Transfer Characteristics

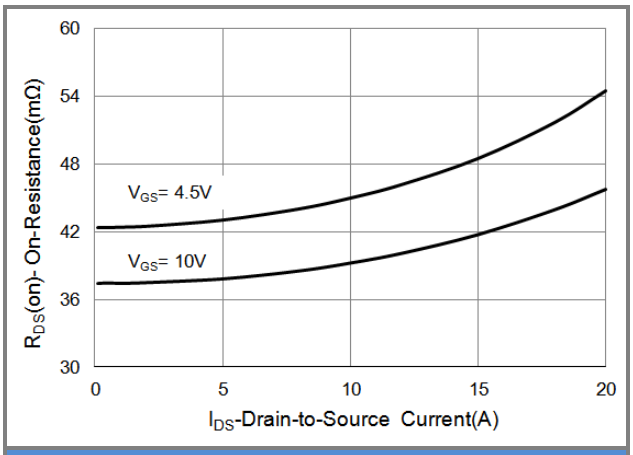


Fig.3 On-Resistance vs. Drain Current

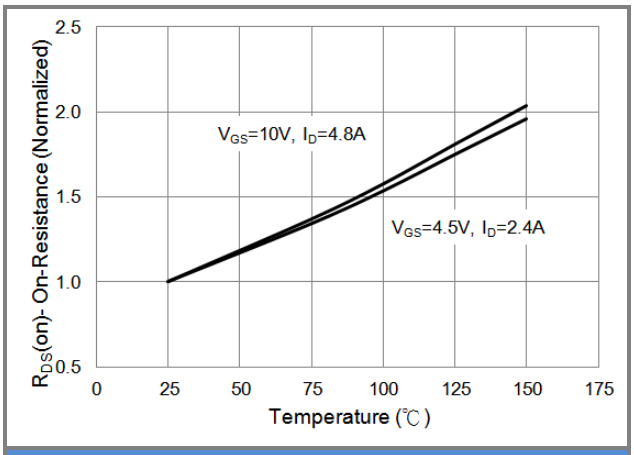


Fig.4 On-Resistance vs. Junction temperature

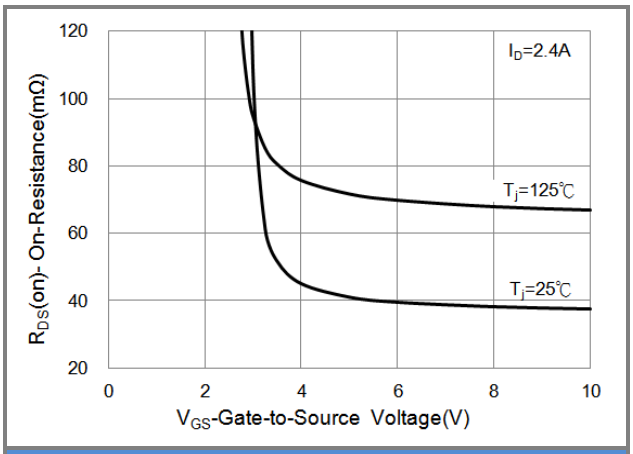


Fig.5 On-Resistance Variation with VGS.

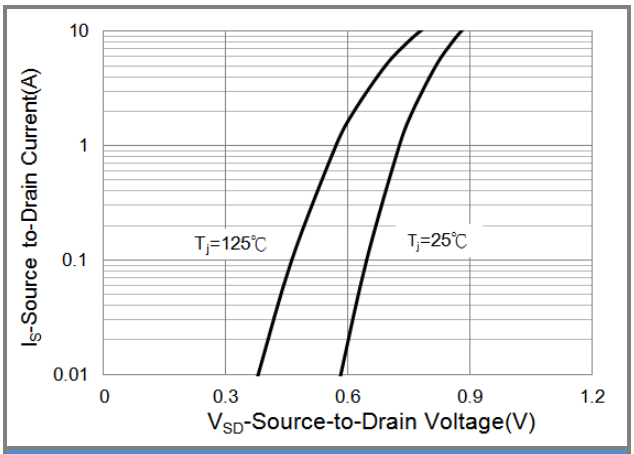


Fig.6 Body Diode Characteristics

PJL9830A

TYPICAL CHARACTERISTIC CURVES

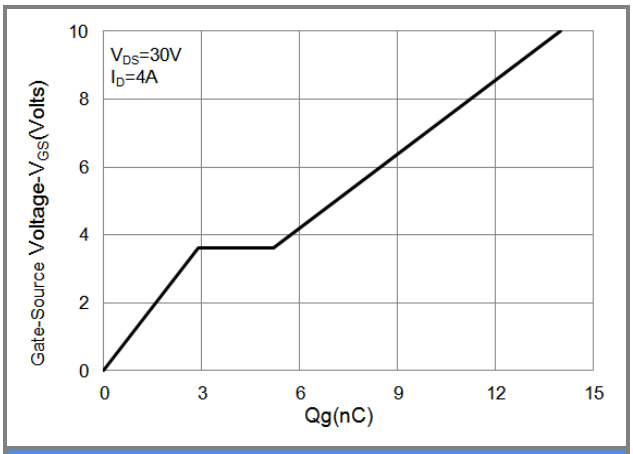


Fig.7 Gate-Charge Characteristics

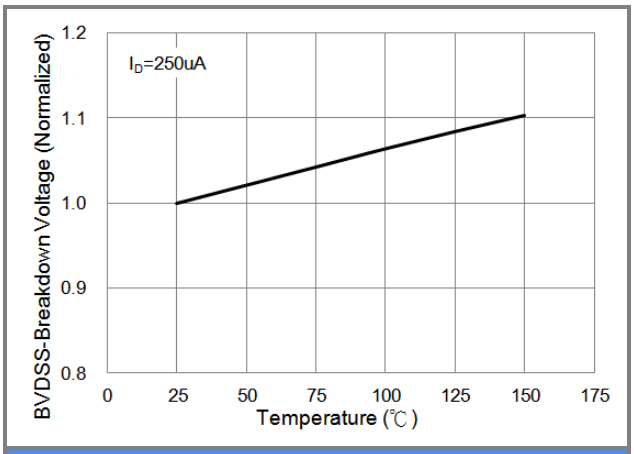


Fig.8 Breakdown Voltage Variation vs. Temperature

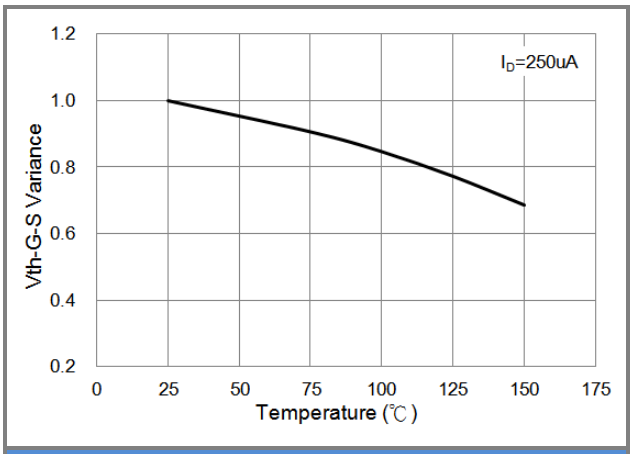


Fig.9 Threshold Voltage Variation with Temperature.

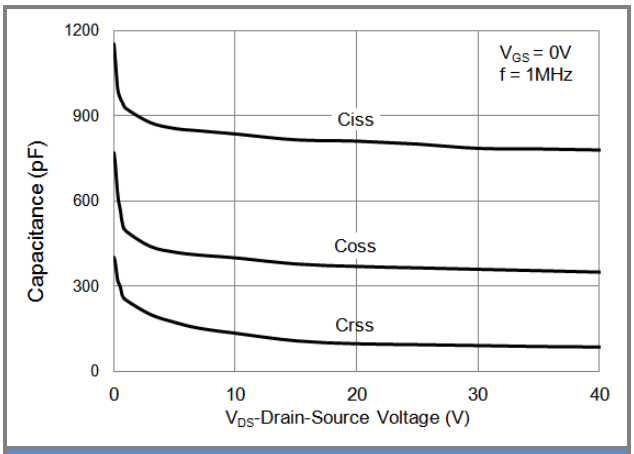


Fig.10 Capacitance vs. Drain-Source Voltage.

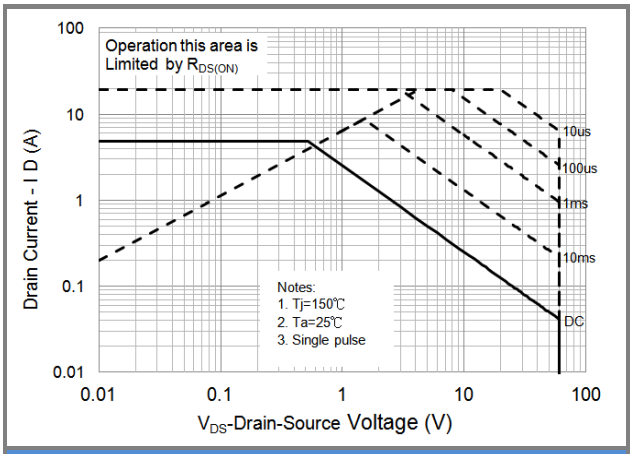


Fig.11 Maximum Safe Operating Area

PJL9830A

TYPICAL CHARACTERISTIC CURVES

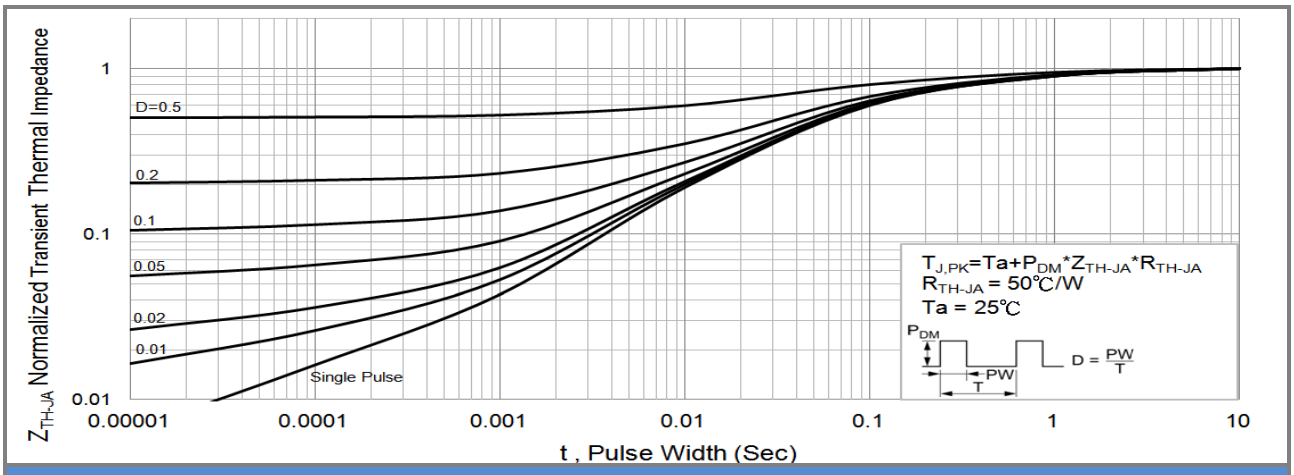


Fig.12 Normalized Transient Thermal Impedance vs. Pulse Width

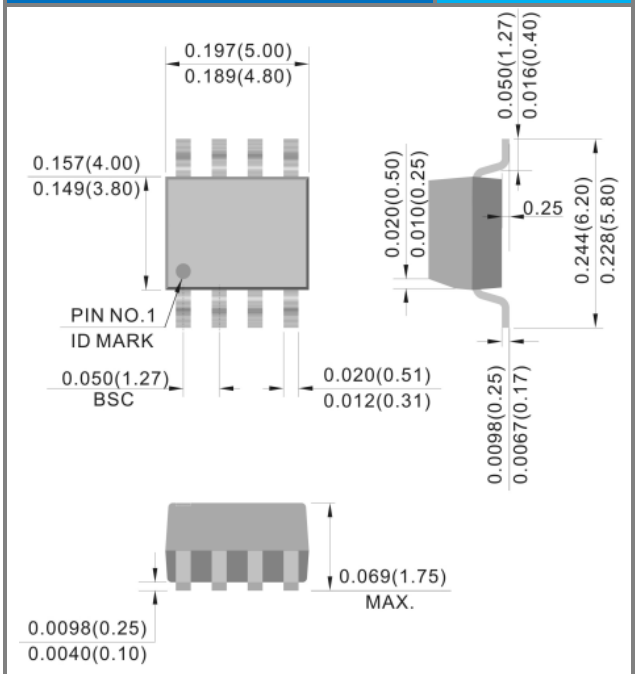
PJL9830A

PART NO PACKING CODE VERSION

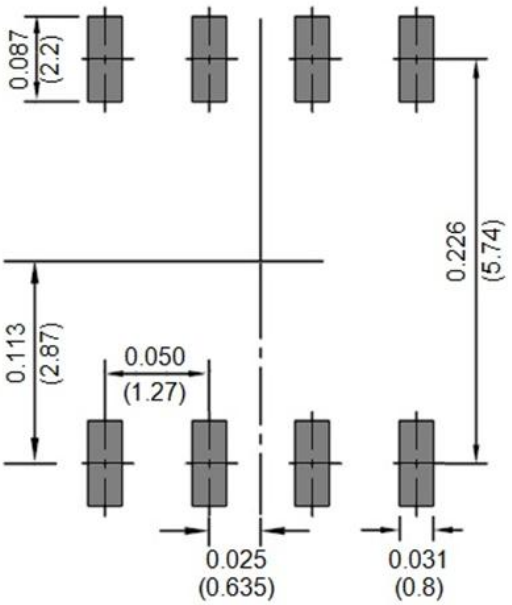
Part No Packing Code	Package Type	Packing type	Marking	Version
PJL9830A_R2_00001	SOP-8	2.5K pcs / 13” reel	L9830A	Halogen free

Packaging Information & Mounting Pad Layout

SOP-8 Dimension — Unit: mm



SOP-8 PAD LATOUT — Unit: mm



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