

PJL9436A

60V N-Channel Enhancement Mode MOSFET

Voltage	60 V	Current	7.5 A
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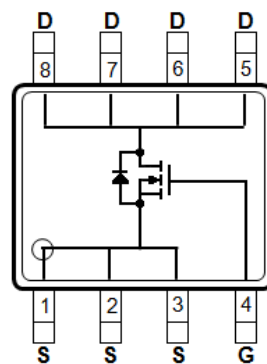
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@7.5A < 21m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_D@4.0A < 24m\Omega$
- Advanced Trench Process Technology
- High density cell design for ultra low on-resistance
- 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: L9436A

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	7.5	A
	T _A =70°C		6.0	
Pulsed Drain Current ^(Note 1)		I _{DM}	30	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}	31.3	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)

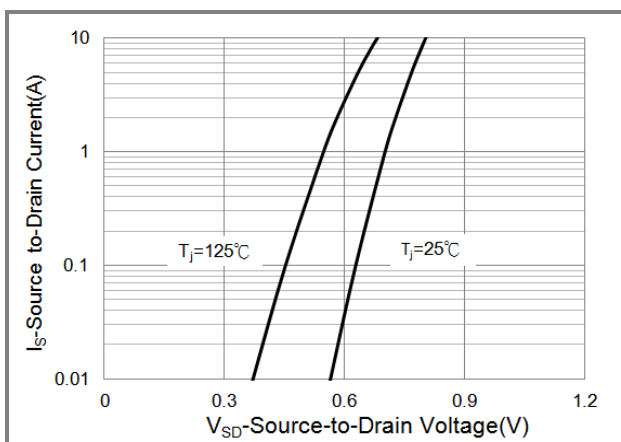
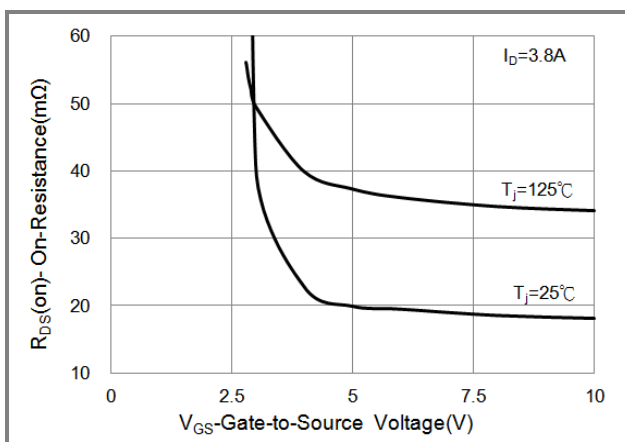
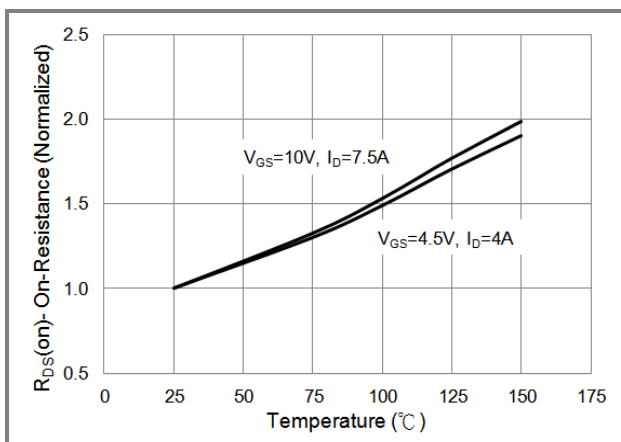
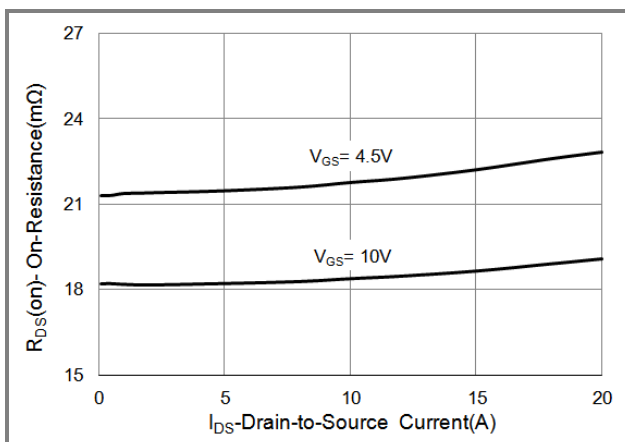
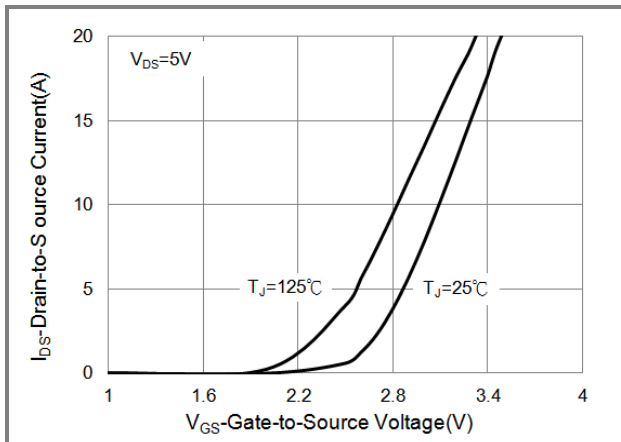
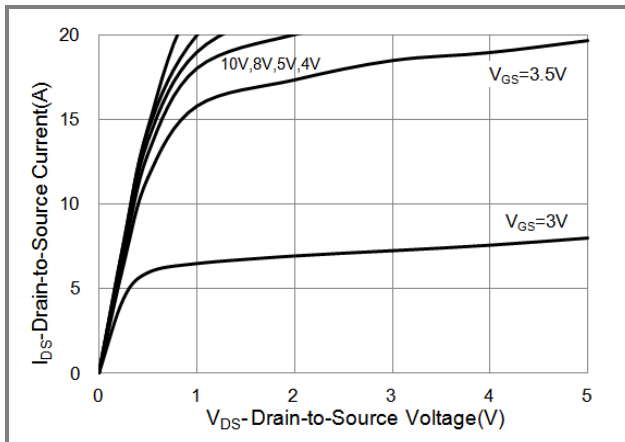
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	60	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.73	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =7.5A	-	18	21	mΩ
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =4.0A	-	21	24	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 =7.5A, V _{GS} =10V ^(Note 1,2)	-	28	-	nC
Gate-Source Charge	Q _{gs}		-	3.5	-	
Gate-Drain Charge	Q _{gd}		-	6.5	-	
Input Capacitance	C _{iss}	V _{DS} =20V, V _{GS} =0V, f=1.0MHZ	-	1680	-	pF
Output Capacitance	C _{oss}		-	115	-	
Reverse Transfer Capacitance	C _{rss}		-	85	-	
Turn-On Delay Time	td _(on)	V _{DD} =30V, I _D =1A, V _{GS} =10V, R _G =6Ω ^(Note 1,2)	-	7.2	-	ns
Turn-On Rise Time	tr		-	38	-	
Turn-Off Delay Time	td _(off)		-	34	-	
Turn-Off Fall Time	tf		-	8.2	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	7.5	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V	-	0.7	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 $L=0.1\text{mH}$, $I_{AS}=25A$, $V_{DD}=25V$, $V_{GS}=10V$
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.

PJL9436A

TYPICAL CHARACTERISTIC CURVES



PJL9436A

TYPICAL CHARACTERISTIC CURVES

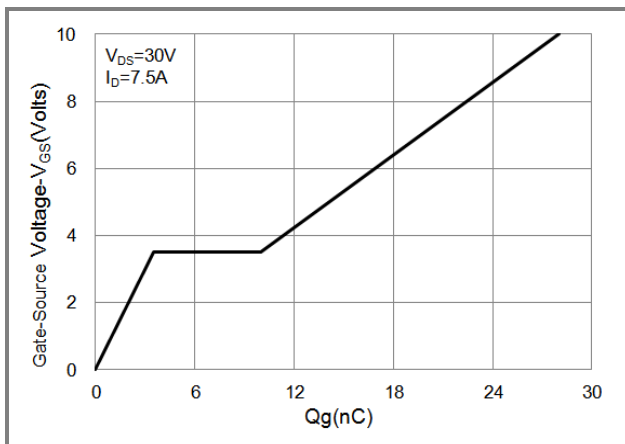


Fig.7 Gate-Charge Characteristics

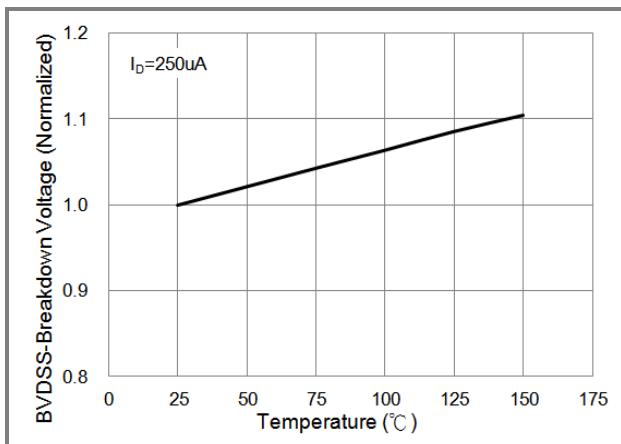


Fig.8 Breakdown Voltage Variation vs. Temperature

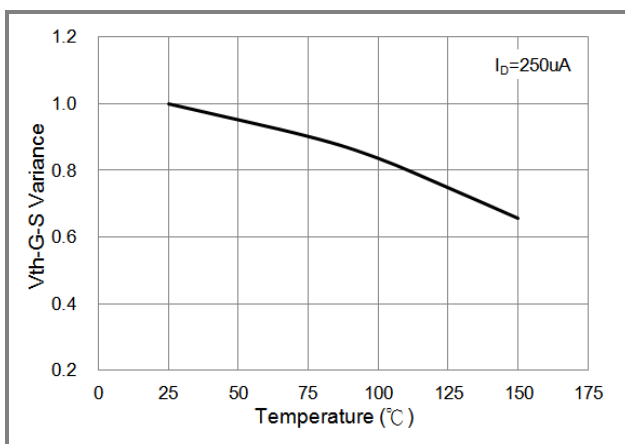


Fig.9 Threshold Voltage Variation with Temperature.

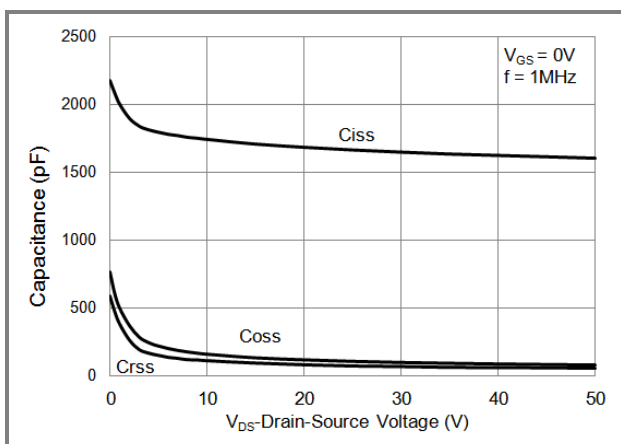


Fig.10 Capacitance vs. Drain-Source Voltage.

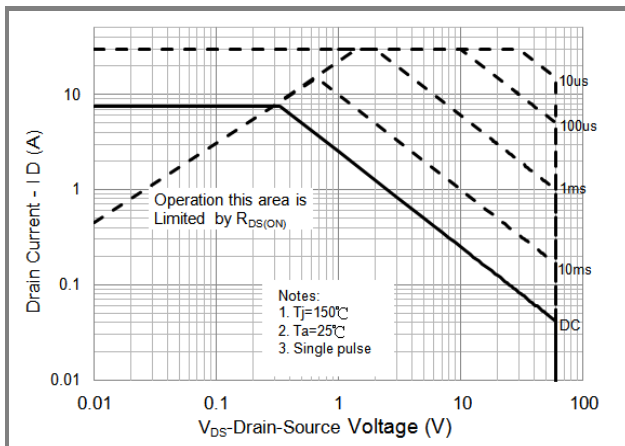


Fig.11 Maximum Safe Operating Area



PJL9436A

TYPICAL CHARACTERISTIC CURVES

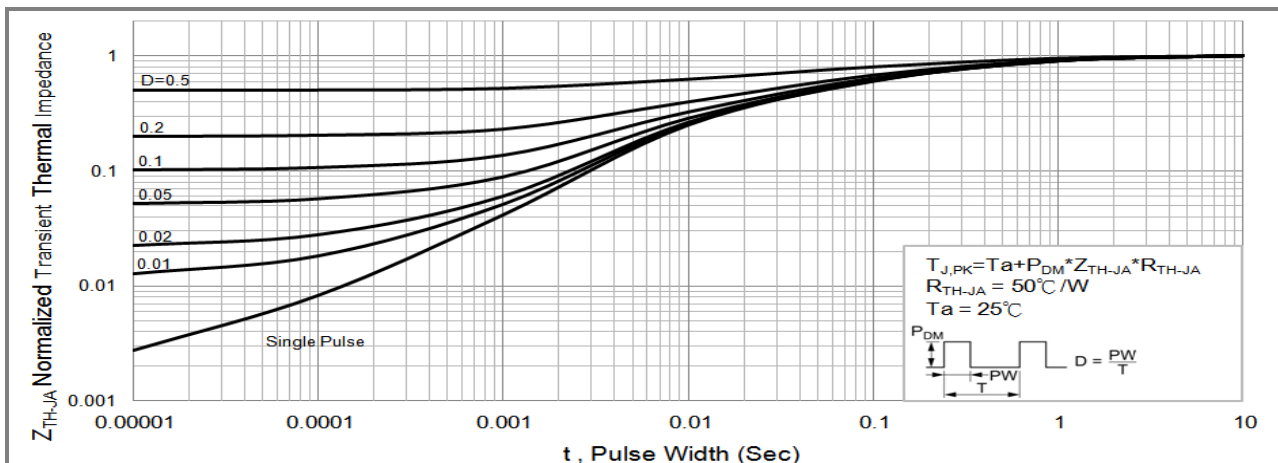


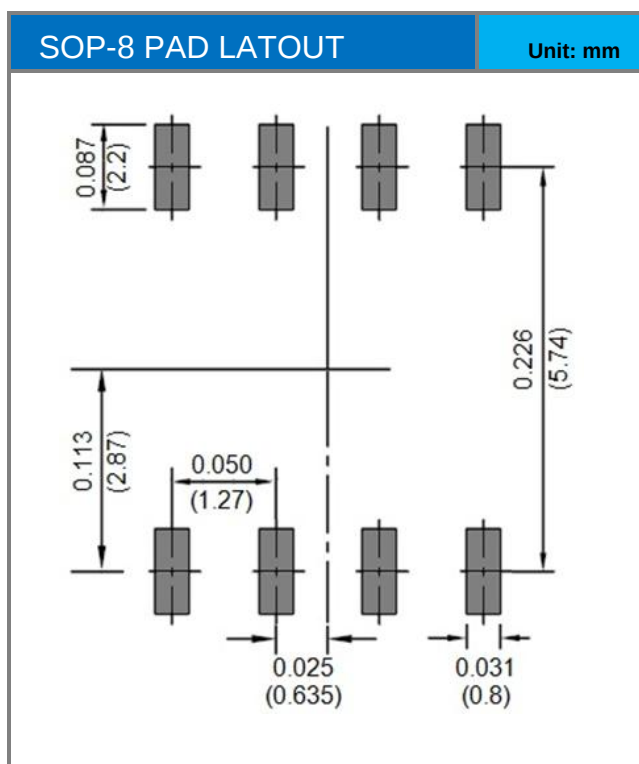
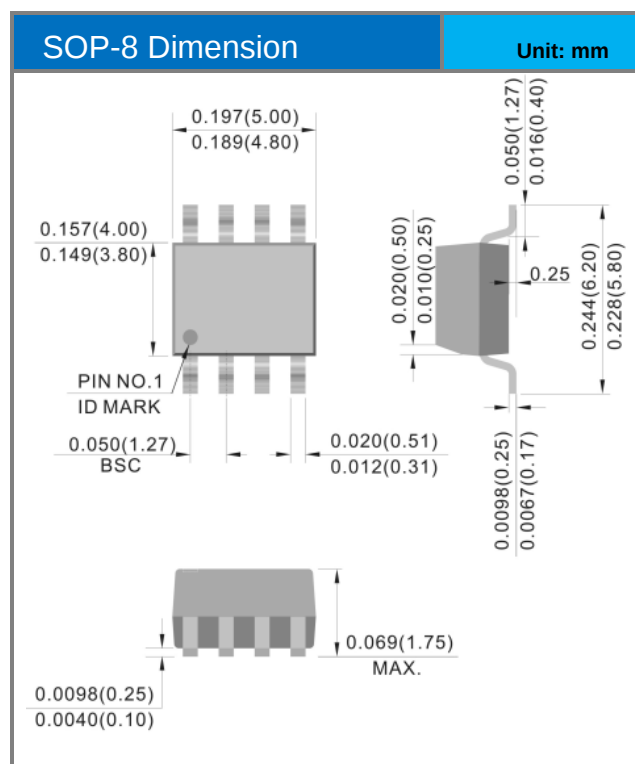
Fig.12 Normalized Transient Thermal Impedance vs. Pulse Width

PJL9436A

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJL9436A_R2_00001	SOP-8	2.5K pcs / 13" reel	L9436A	Halogen free

Packaging Information & Mounting Pad Layout





PJL9436A

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