

PJL9450A

100V N-Channel Enhancement Mode MOSFET

Voltage	100 V	Current	2.7 A
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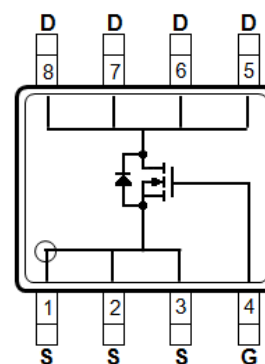
Features

- $R_{DS(ON)}, V_{GS}@10V, I_D@2.7A < 152m\Omega$
- $R_{DS(ON)}, V_{GS}@4.5V, I_D@2.5A < 158m\Omega$
- 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: L9454A

SOP-8



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	100	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _A =25°C	I _D	2.7	A
	T _A =70°C		2.1	
Pulsed Drain Current ^(Note 1)		I _{DM}	10.8	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}	1.3	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	100	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.72	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =2.7A	-	130	152	mΩ
		V _{GS} =4.5V, I _D =2.5A	-	135	158	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =80V, V _{GS} =0V	-	-	1	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} =60V, I _D =2.7A, V _{GS} =10V ^(Note 2,3)	-	19	-	nC
Gate-Source Charge	Q _{gs}		-	2.9	-	
Gate-Drain Charge	Q _{gd}		-	3.2	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1.0MHZ	-	1021	-	pF
Output Capacitance	C _{oss}		-	38	-	
Reverse Transfer Capacitance	C _{rss}		-	17	-	
Turn-On Delay Time	td _(on)	V _{DS} =50V, RL=18.5Ω, V _{GS} =10V, R _G =6Ω ^(Note 2,3)	-	6.1	-	ns
Turn-On Rise Time	tr		-	27	-	
Turn-Off Delay Time	td _(off)		-	28	-	
Turn-Off Fall Time	tf		-	11	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	2.7	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V	-	0.74	1.2	V

NOTES :

- Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
- Essentially independent of operating temperature typical characteristics.
- 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 $T_J=25^{\circ}\text{C}$.
- The maximum current rating is package limited.
- The test condition is $L=0.1\text{mH}$, $I_{AS}=5A$, $V_{DD}=50V$, $V_{GS}=10V$
- $R_{\theta JA}$ 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.
- Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

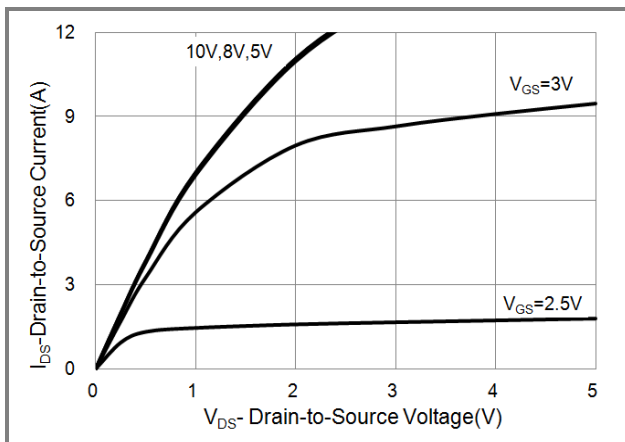


Fig.1 On-Region Characteristics

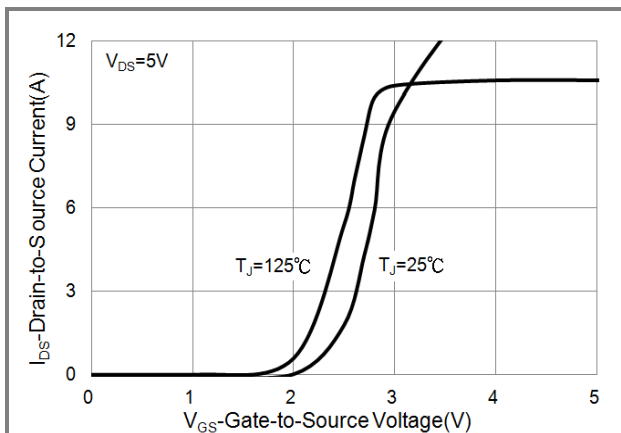


Fig.2 Transfer Characteristics

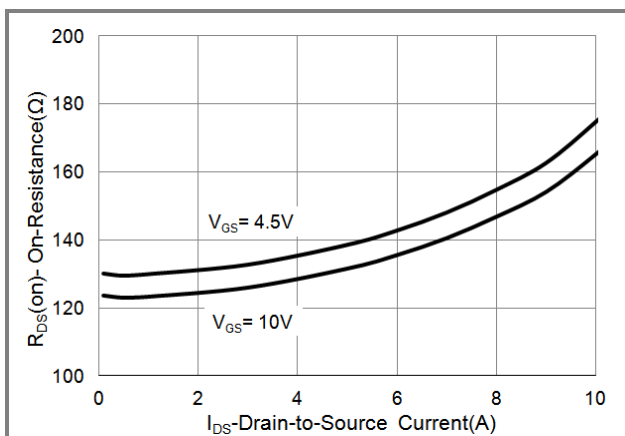


Fig.3 On-Resistance vs. Drain Current

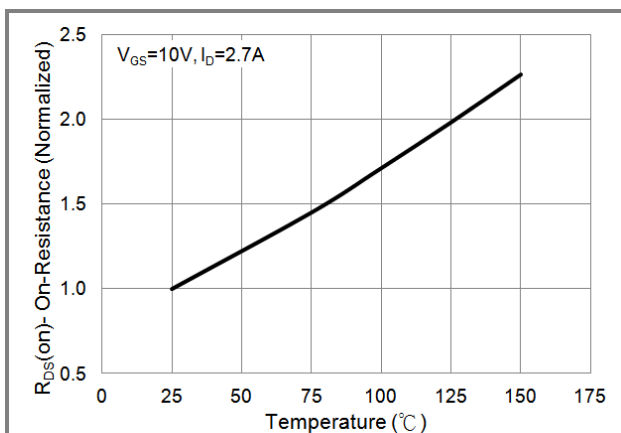


Fig.4 On-Resistance vs. Junction temperature

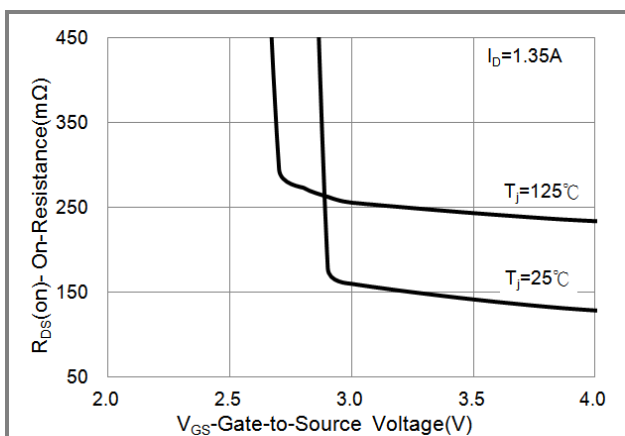


Fig.5 On-Resistance Variation with VGS.

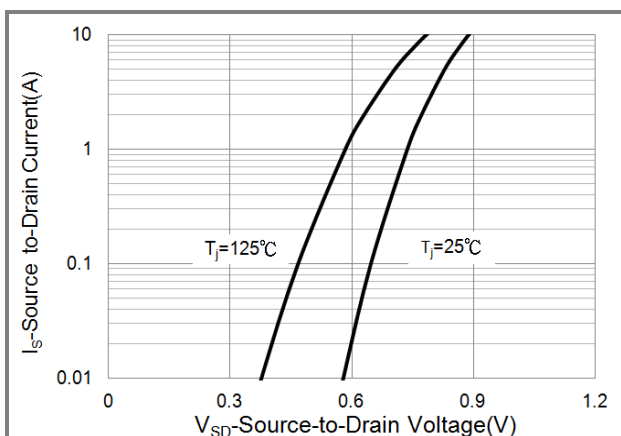


Fig.6 Body Diode Characteristics

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TYPICAL CHARACTERISTIC CURVES

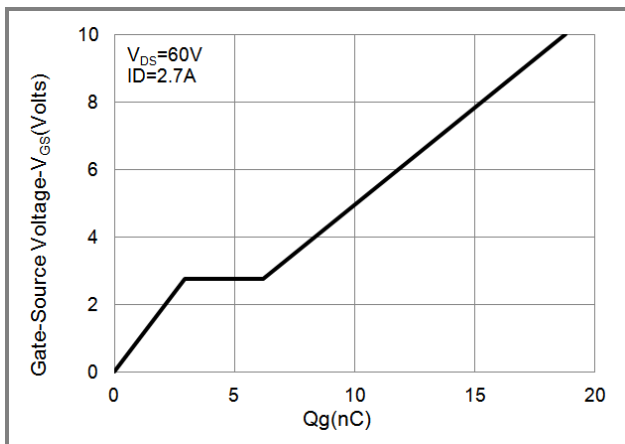


Fig.7 Gate-Charge Characteristics

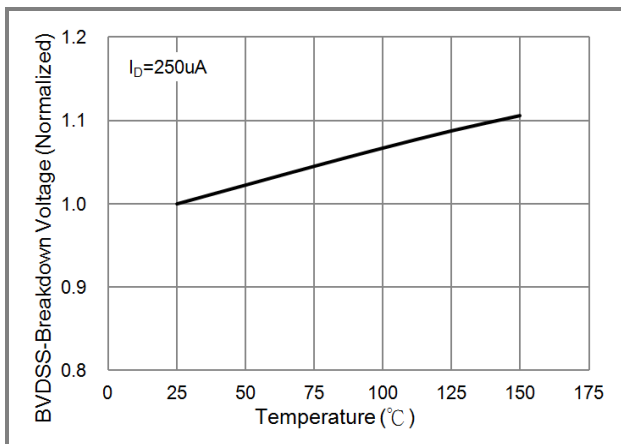


Fig.8 Breakdown Voltage Variation vs. Temperature

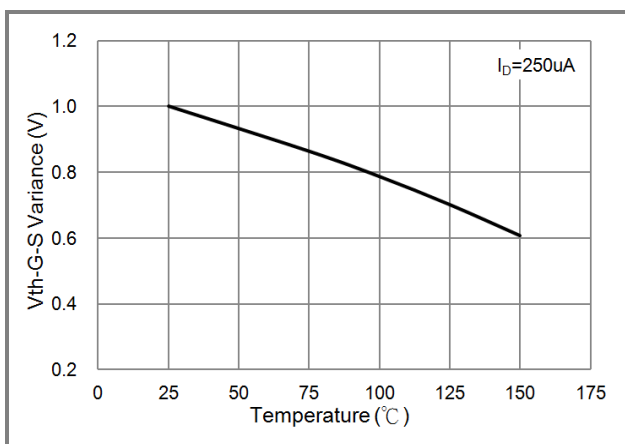


Fig.9 Threshold Voltage Variation with Temperature.

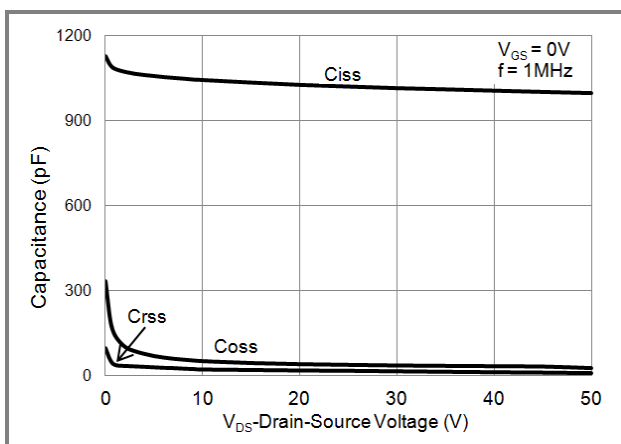


Fig.10 Capacitance vs. Drain-Source Voltage.

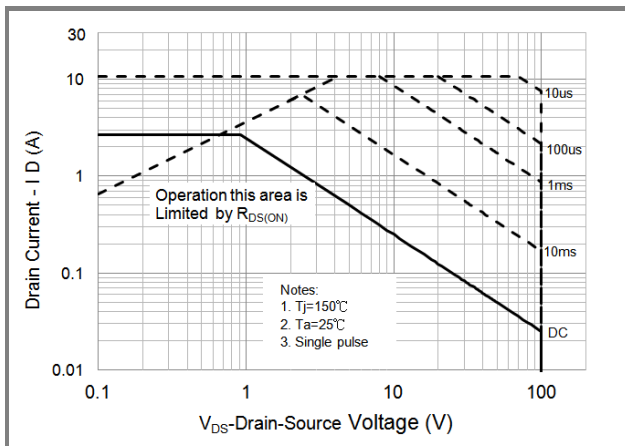


Fig.11 Maximum Safe Operating Area



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TYPICAL CHARACTERISTIC CURVES

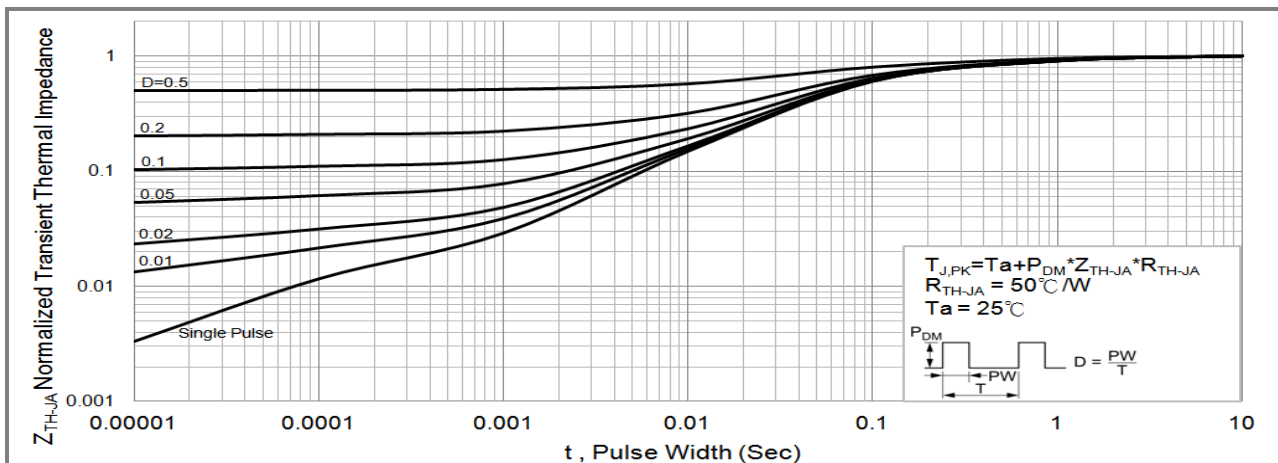


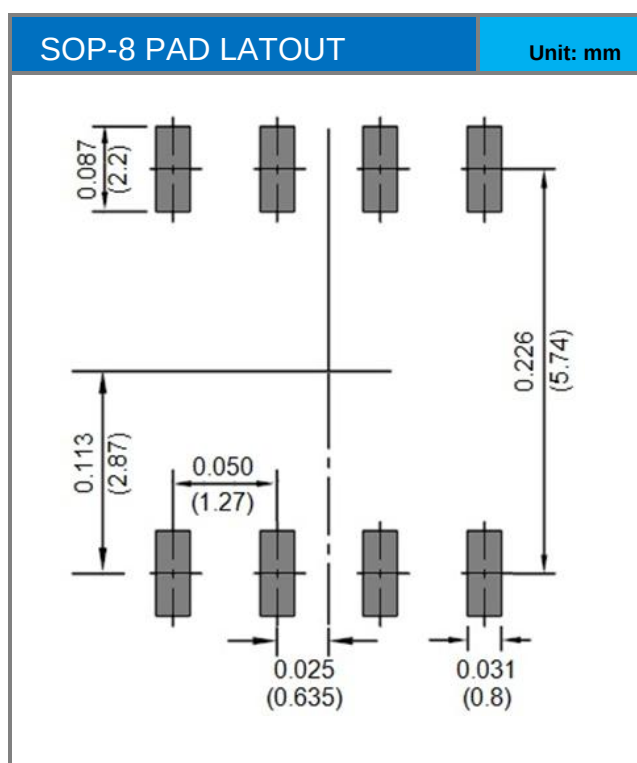
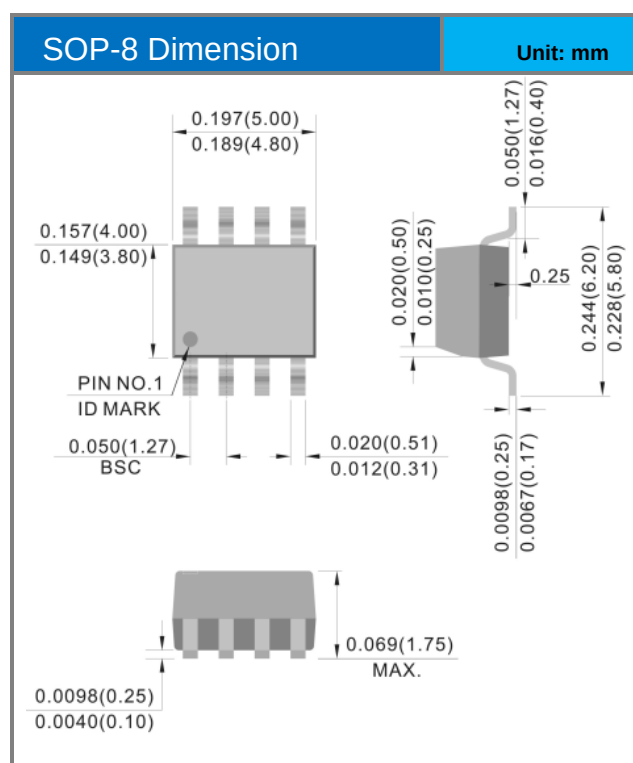
Fig.12 Normalized Transient Thermal Impedance vs. Pulse Width

PJL9450A

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJL9450A_R2_00001	SOP-8	2.5K pcs / 13" reel	L9450A	Halogen free

Packaging Information & Mounting Pad Layout





PJL9450A

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