



PJL9452A

100V N-Channel Enhancement Mode MOSFET

Voltage	100 V	Current	3.3 A
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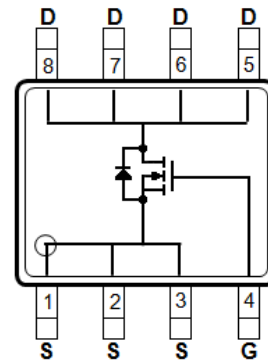
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@3.3A < 115m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_D@1.5A < 120m\Omega$
- 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
- Marking: L9452A

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	$T_A=25^\circ C$	I_D	3.3	A
	$T_A=70^\circ C$		2.6	
Pulsed Drain Current ^(Note 1)		I_{DM}	13.2	A
Power Dissipation	$T_A=25^\circ C$	P_D	2.5	W
	$T_A=70^\circ C$		1.6	
Single Pulse Avalanche Energy ^(Note 5)		E_{AS}	3.2	mJ
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ C$
Typical Thermal resistance		$R_{\theta JA}$	50	$^\circ C/W$
- Junction to Ambient, $t \leq 10s$ ^(Note 5)				



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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	100	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.76	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3.3A	-	92	115	mΩ
		V _{GS} =4.5V, I _D =1.5A	-	95	120	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V	-	-	1.0	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Dynamic (Note 6)						
Total Gate Charge	Q _g	V _{DS} =50V, I _D =2A, V _{GS} =10V (Note 1,2)	-	20	-	nC
Gate-Source Charge	Q _{gs}		-	3.2	-	
Gate-Drain Charge	Q _{gd}		-	3.6	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1.0MHZ	-	1413	-	pF
Output Capacitance	C _{oss}		-	60	-	
Reverse Transfer Capacitance	C _{rss}		-	34	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} =50V, I _D =1A, V _{GS} =10V, R _G =3.3Ω (Note 1,2)	-	18	-	ns
Turn-On Rise Time	t _r		-	4.3	-	
Turn-Off Delay Time	t _{d(off)}		-	41	-	
Turn-Off Fall Time	t _f		-	4.2	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	3.3	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. Repetitive rating, pulse width limited by junction temperature T_J(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J=25°C.
4. The maximum current rating is package limited.
5. The test condition is L=0.1mH, I_{AS}=8A, V_{DD}=25V, V_{GS}=10V
6. R_{θJA} 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

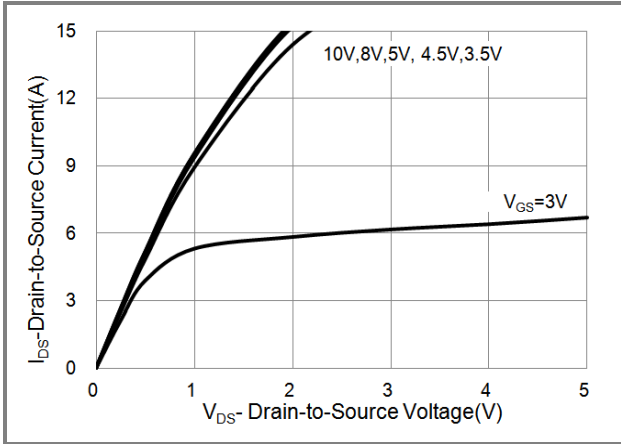


Fig.1 On-Region Characteristics

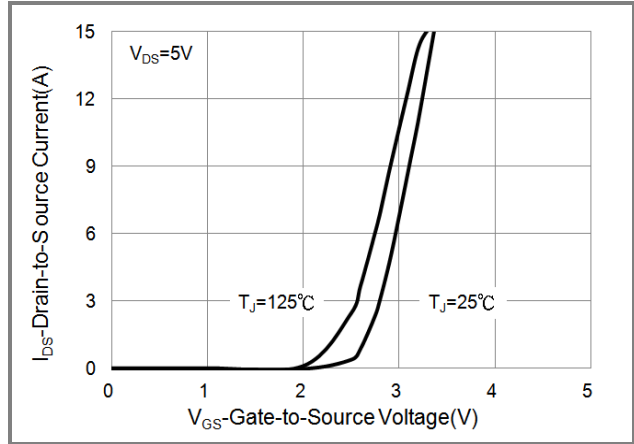


Fig.2 Transfer Characteristics

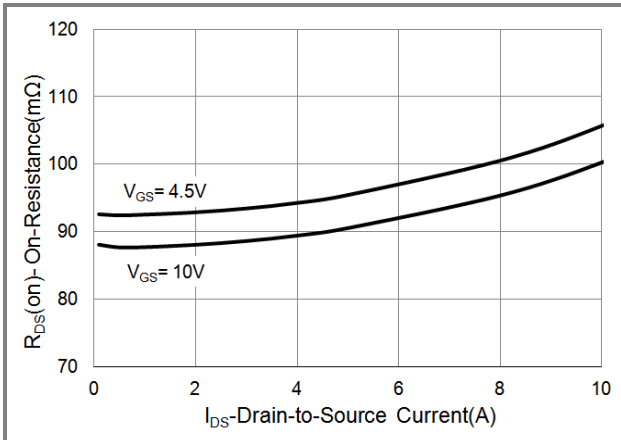


Fig.3 On-Resistance vs. Drain Current

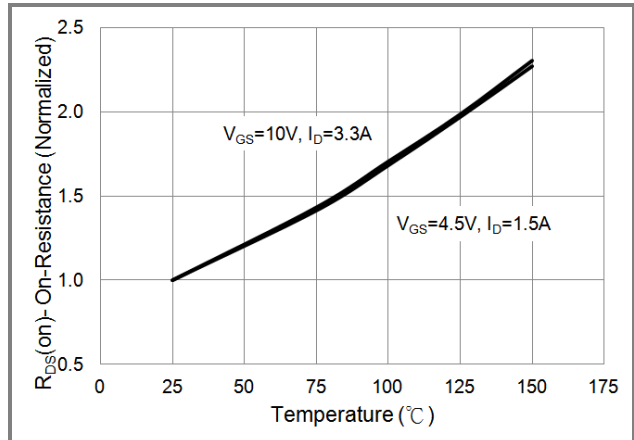


Fig.4 On-Resistance vs. Junction temperature

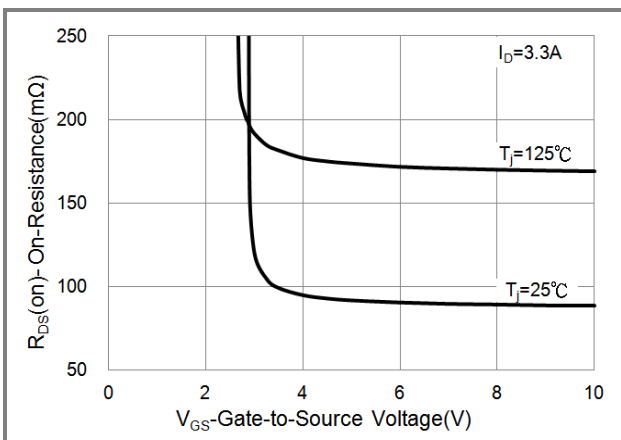


Fig.5 On-Resistance Variation with VGS.

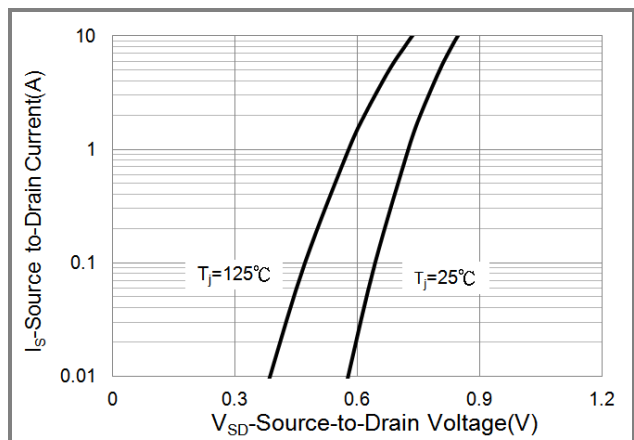


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES

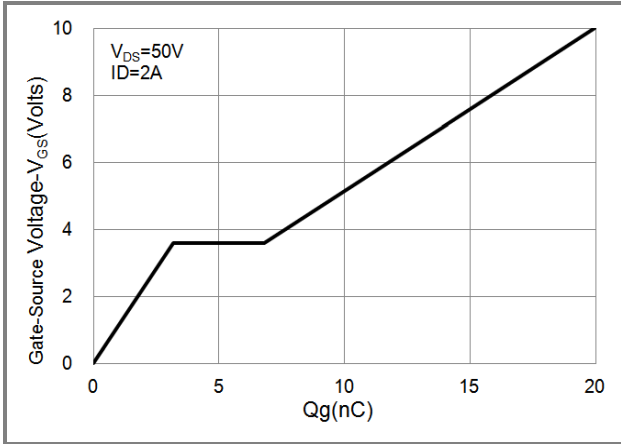


Fig.7 Gate-Charge Characteristics

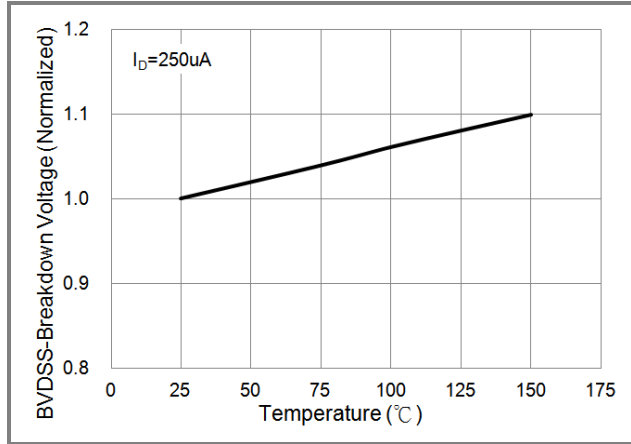


Fig.8 Breakdown Voltage Variation vs. Temperature

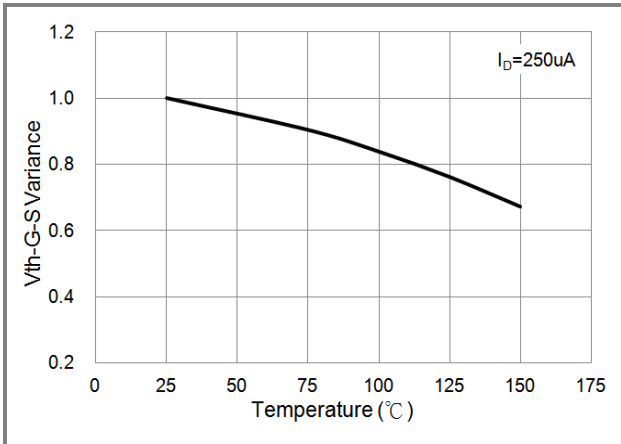


Fig.9 Threshold Voltage Variation with Temperature.

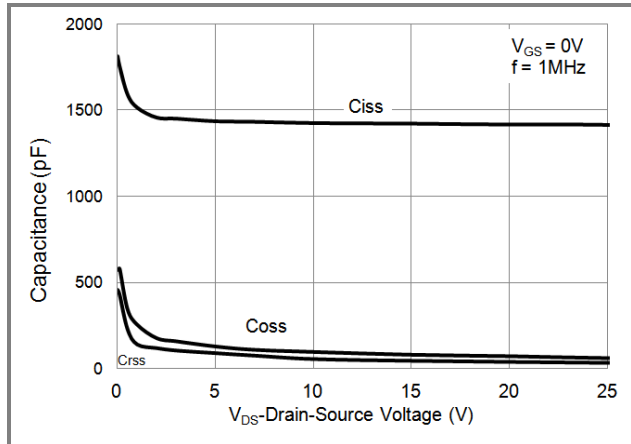


Fig.10 Capacitance vs. Drain-Source Voltage.

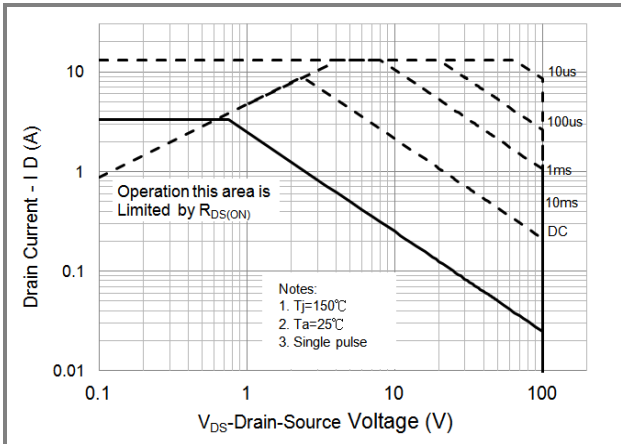


Fig.11 Maximum Safe Operating Area



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TYPICAL CHARACTERISTIC CURVES

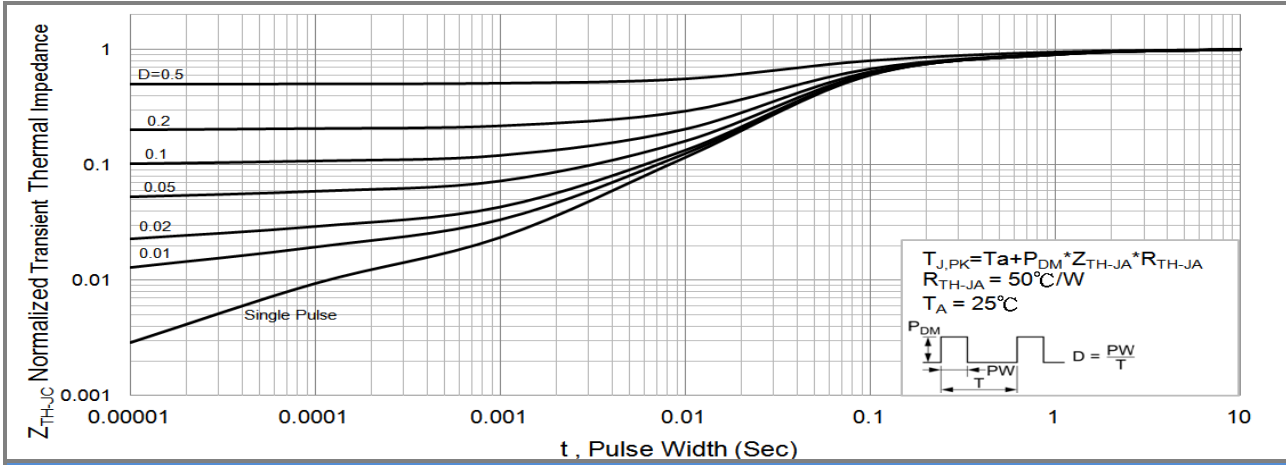


Fig.12 Normalized Transient Thermal Impedance vs. Pulse Width

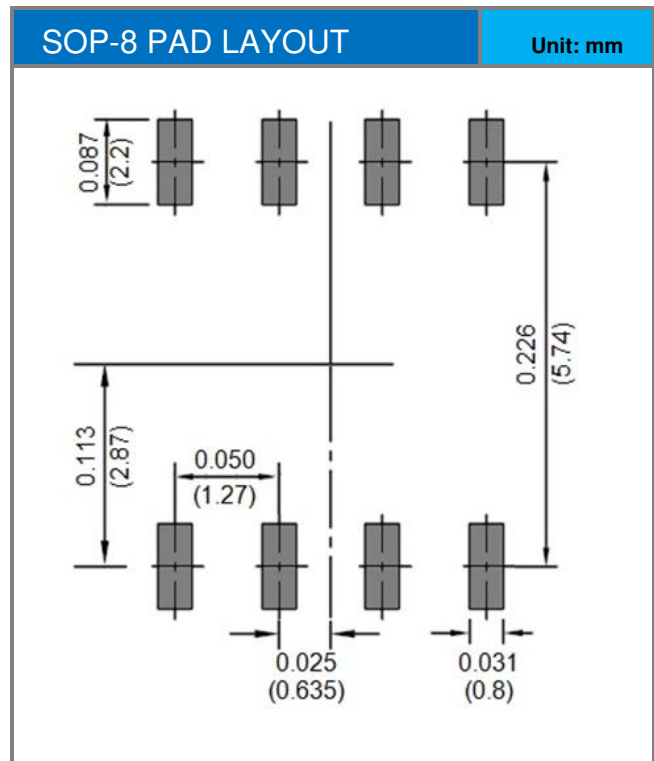
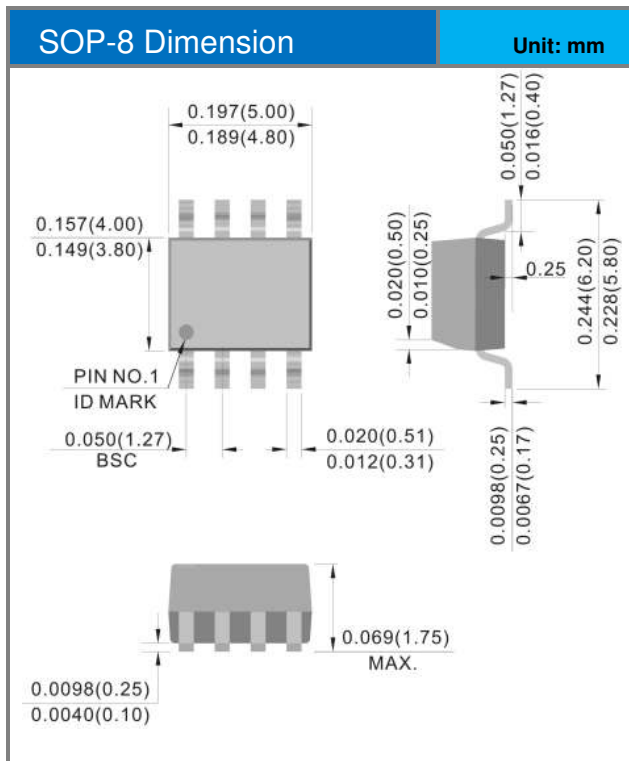


PJL9452A

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJL9452A_R2_00001	SOP-8	2.5K pcs / 13" reel	L9452A	Halogen free

Packaging Information & Mounting Pad Layout





PJL9452A

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