



PJL9812

30V Dual N-Channel Enhancement Mode MOSFET

Voltage	30 V	Current	6 A
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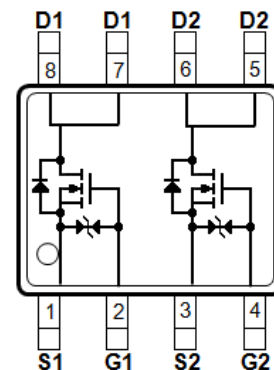
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_{D}@6A < 35m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_{D}@4A < 40m\Omega$
- $R_{DS(ON)}$, $V_{GS}@2.5V$, $I_{D}@2A < 54m\Omega$
- Advanced Trench Process Technology
- ESD Protected 2KV HBM
- High density cell design for ultra low on-resistance
- 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: L9812

SOP-8



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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	6	A
	$T_A=70^\circ\text{C}$		4.8	
Pulsed Drain Current ^(Note 1)		I_{DM}	24	A
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	2	W
	$T_A=70^\circ\text{C}$		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ\text{C}$
Typical Thermal resistance		$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
- Junction to Ambient, $t \leq 10s$ ^(Note 5)				



PJL9812

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}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.8	1.3	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=6.0A$	-	30	35	m Ω
		$V_{GS}=4.5V, I_D=4.0A$	-	33	40	
		$V_{GS}=2.5V, I_D=2.0A$	-	41	54	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	± 10	μA
Dynamic (Note 6)						
Total Gate Charge	Q_g	$V_{DS}=15V, I_D=6.0A,$ $V_{GS}=4.5V$ (Note 1,2)	-	5.1	-	nC
Gate-Source Charge	Q_{gs}		-	0.8	-	
Gate-Drain Charge	Q_{gd}		-	1.4	-	
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V,$ $f=200KHZ$	-	421	-	pF
Output Capacitance	C_{oss}		-	43	-	
Reverse Transfer Capacitance	C_{rss}		-	35	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=15V, I_D=1.0A,$ $V_{GS}=10V,$ $R_G=3\Omega$ (Note 1,2)	-	3.3	-	ns
Turn-On Rise Time	t_r		-	24	-	
Turn-Off Delay Time	$t_{d(off)}$		-	19	-	
Turn-Off Fall Time	t_f		-	16	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	6	A
Diode Forward Voltage	V_{SD}	$I_S=6.0A, V_{GS}=0V$	-	0.86	1.2	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 $T_J(MAX)=150^{\circ}\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J = 25^{\circ}\text{C}$.
5. $R_{\theta JA}$ 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.
6. Guaranteed by design, not subject to production testing.



PJL9812

TYPICAL CHARACTERISTIC CURVES

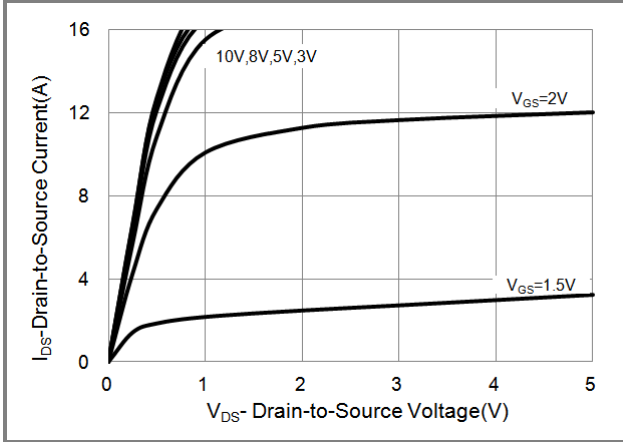


Fig.1 On-Region Characteristics

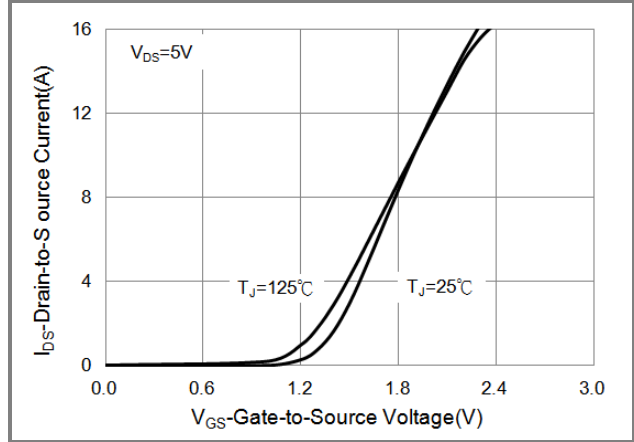


Fig.2 Transfer Characteristics

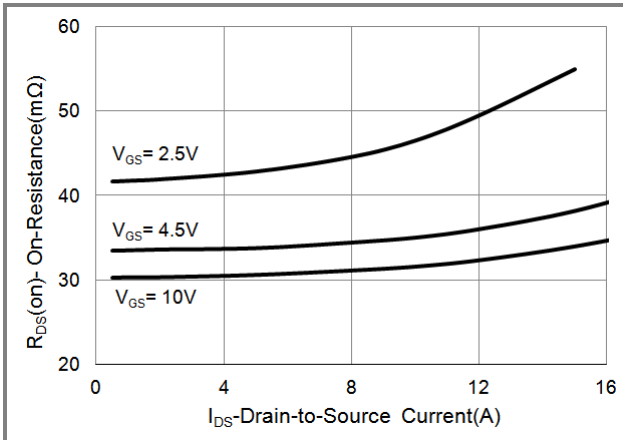


Fig.3 On-Resistance vs. Drain Current

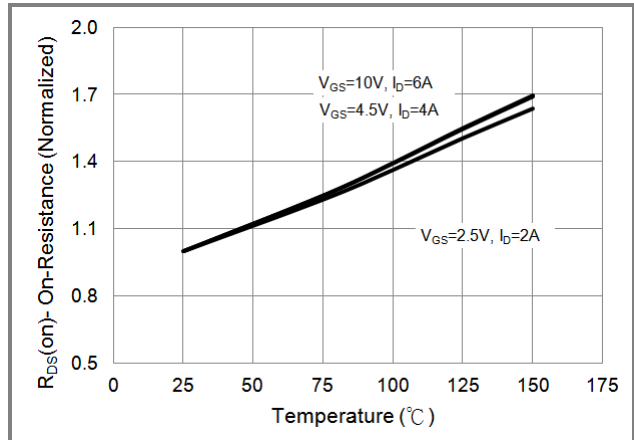


Fig.4 On-Resistance vs. Junction temperature

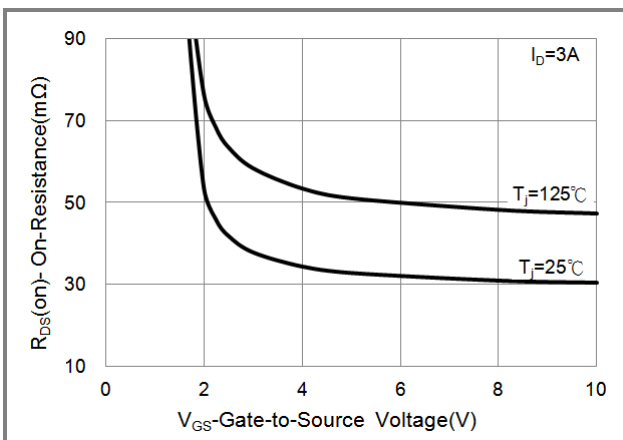


Fig.5 On-Resistance Variation with VGS.

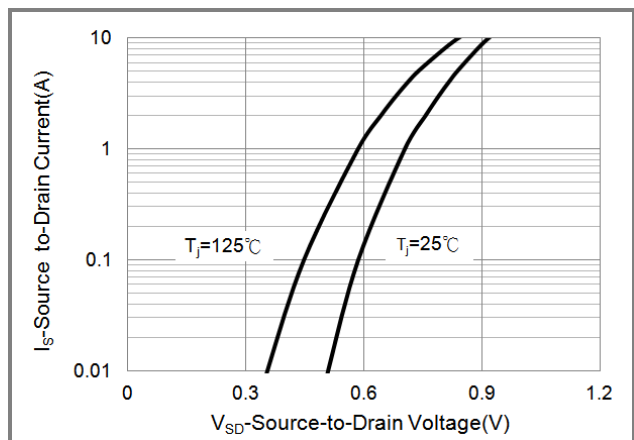


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES

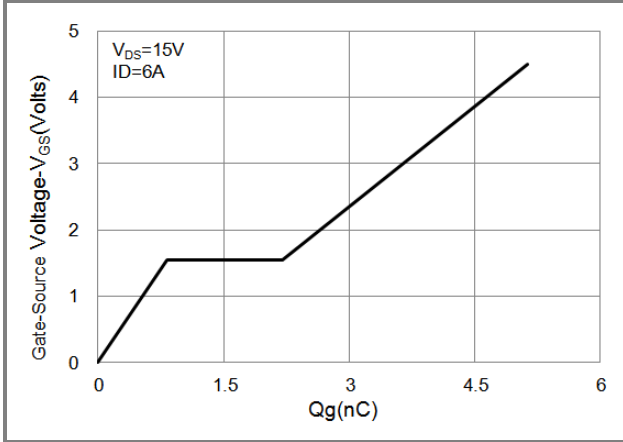


Fig.7 Gate-Charge Characteristics

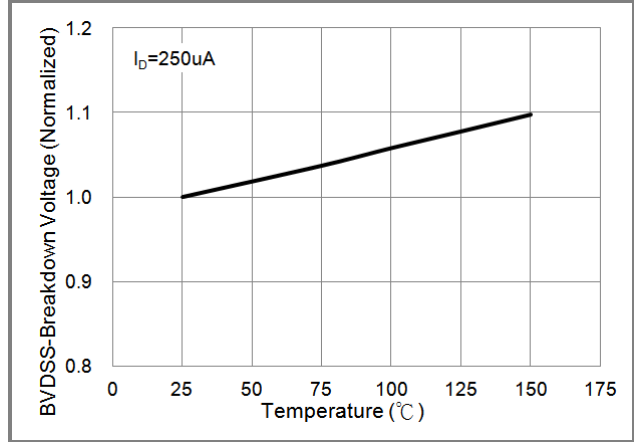


Fig.8 Breakdown Voltage Variation vs. Temperature

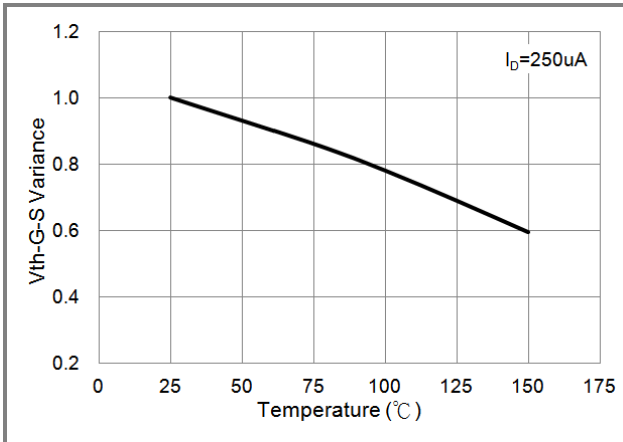


Fig.9 Threshold Voltage Variation with Temperature.

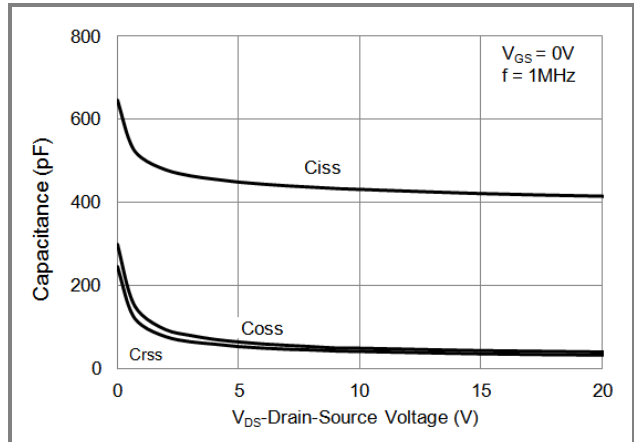


Fig.10 Capacitance vs. Drain-Source Voltage.

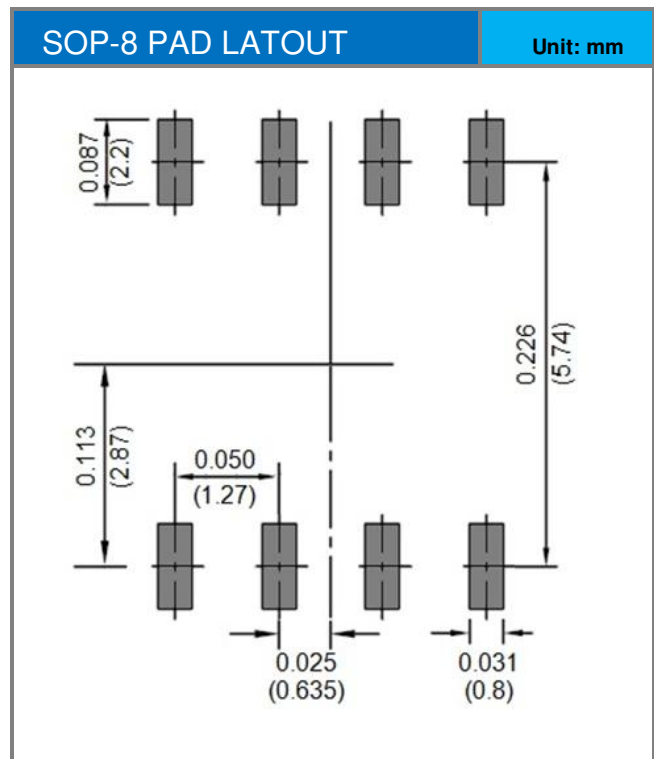
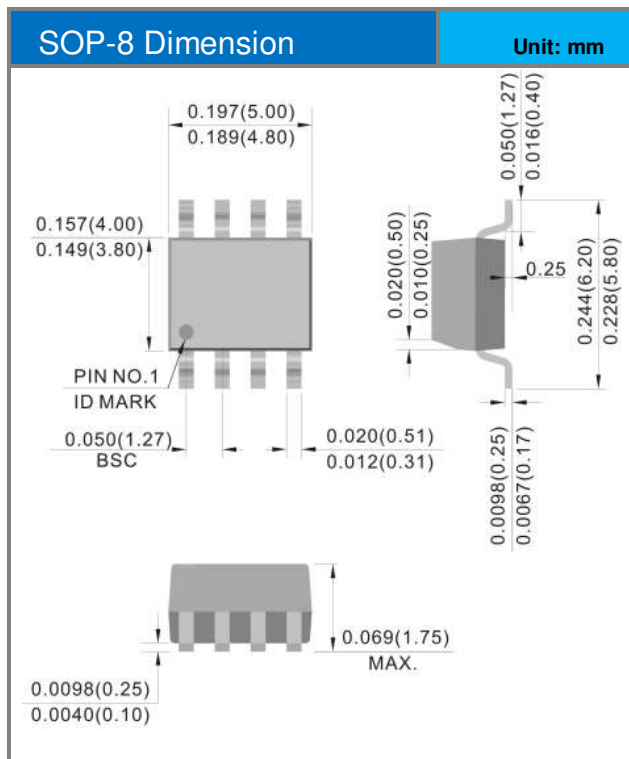


PJL9812

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJL9812_R2_00001	SOP-8	2.5K pcs / 13" reel	L9812	Halogen free

Packaging Information & Mounting Pad Layout





PJL9812

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