



PJL9804

30V Dual N-Channel Enhancement Mode MOSFET

Voltage	30 V	Current	6 A
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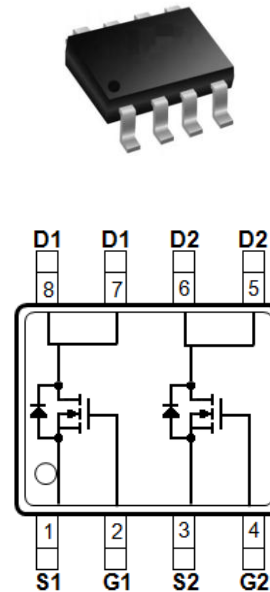
Features

- $R_{DS(ON)}, V_{GS}@10V, I_D@6A < 28m\Omega$
- $R_{DS(ON)}, V_{GS}@4.5V, I_D@4A < 43m\Omega$
- High switching speed
- Improved dv/dt capability
- Low Gate Charge
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/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

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}	± 20	V
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	6.0	A
	$T_A=70^\circ\text{C}$		4.8	
Pulsed Drain Current ^(Note 1)		I_{DM}	15.4	A
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	1.25	W
	$T_A=70^\circ\text{C}$		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ\text{C}$
Typical Thermal Resistance - Junction to Ambient ^(Note 5)		$R_{\theta JA}$	100	$^\circ\text{C/W}$



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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	30	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.3	2.1	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =6A	-	23	28	mΩ
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =4A	-	36	43	mΩ
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, 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} =15V, I _D =6A, V _{GS} =10V (Note 3)	-	7.8	-	nC
Gate-Source Charge	Q _{gs}		-	1.2	-	
Gate-Drain Charge	Q _{gd}		-	1.5	-	
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHZ	-	343	-	pF
Output Capacitance	C _{oss}		-	48	-	
Reverse Transfer Capacitance	C _{rss}		-	34	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} =15V, I _D =6A, V _{GS} =10V, R _G =3Ω (Note 3)	-	3	-	ns
Turn-On Rise Time	t _r		-	40	-	
Turn-Off Delay Time	t _{d(off)}		-	38	-	
Turn-Off Fall Time	t _f		-	39	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	6.0	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V	-	0.78	1.2	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 T_{J(MAX)}=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J = 25°C.
5. 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.
6. Guaranteed by design, not subject to production testing.



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TYPICAL CHARACTERISTIC CURVES

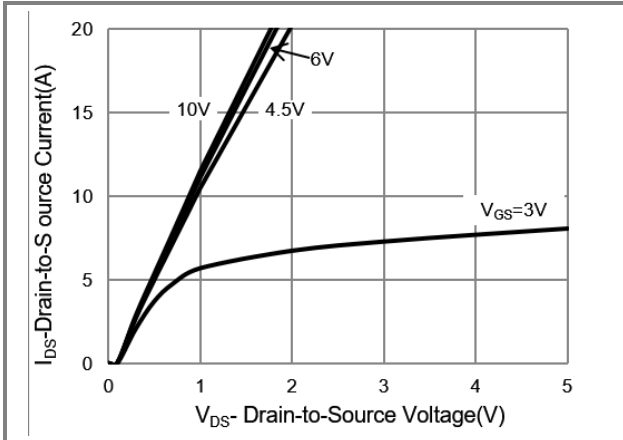


Fig.1 On-Region Characteristics

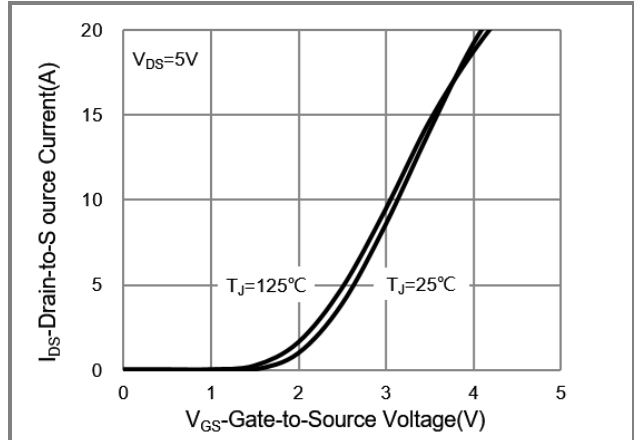


Fig.2 Transfer Characteristics

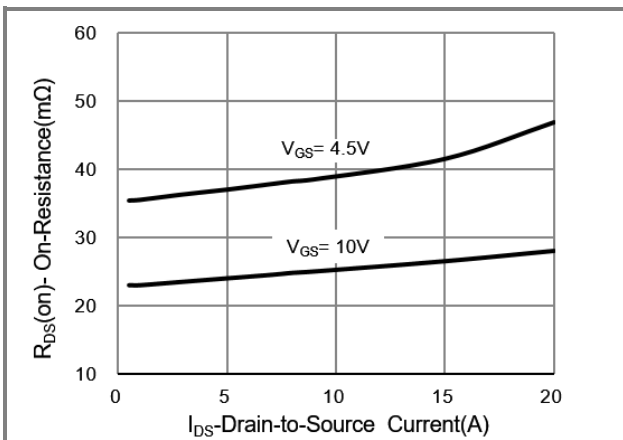


Fig.3 On-Resistance vs. Drain Current

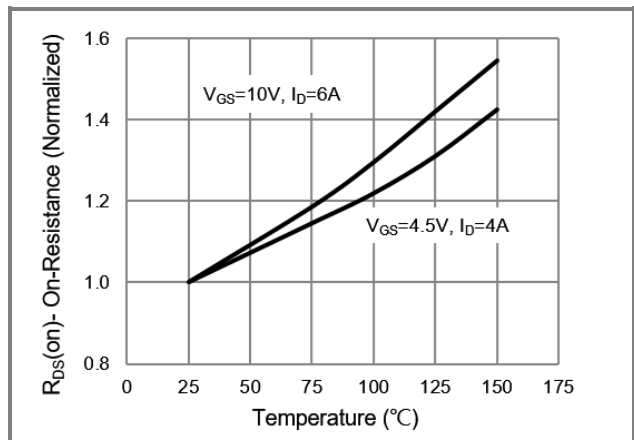


Fig.4 On-Resistance vs. Junction temperature

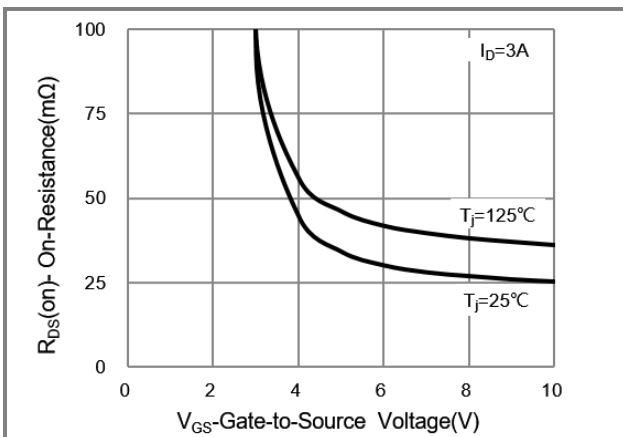


Fig.5 On-Resistance Variation with VGS.

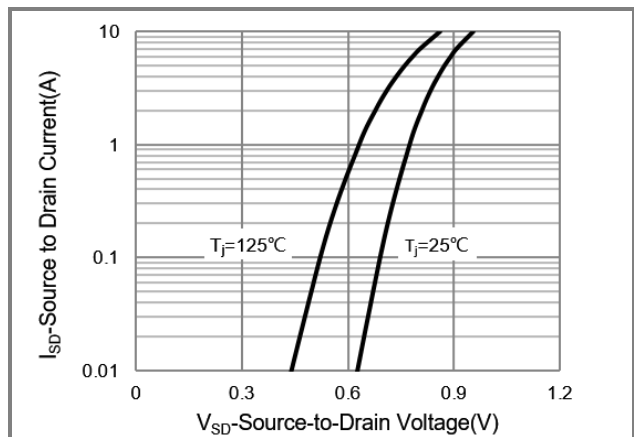


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES

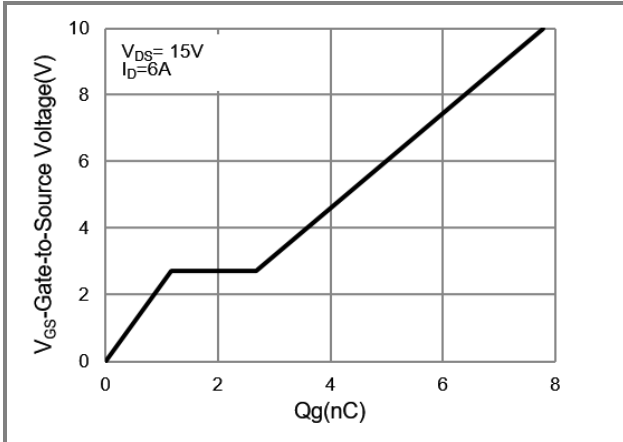


Fig.7 Gate-Charge Characteristics

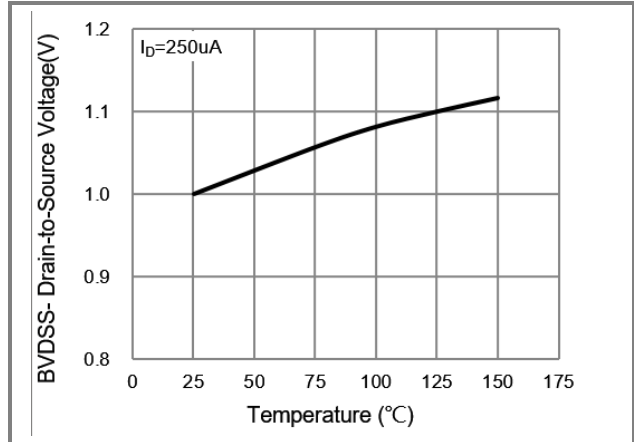


Fig.8 Breakdown Voltage Variation vs. Temperature

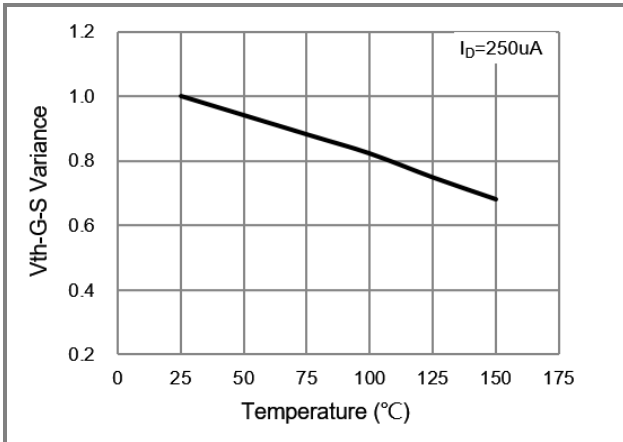


Fig.9 Threshold Voltage Variation with Temperature.

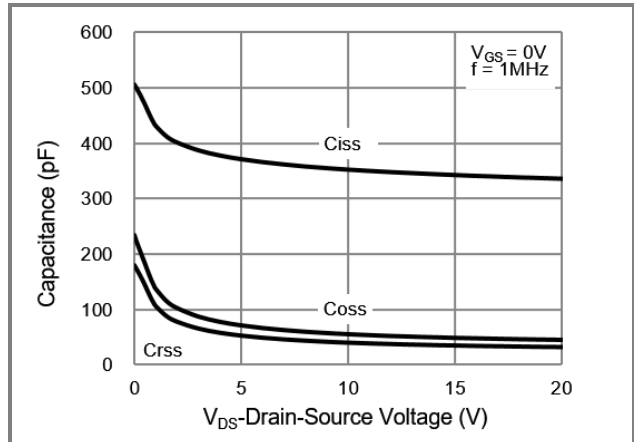


Fig.10 Capacitance vs. Drain-Source Voltage.

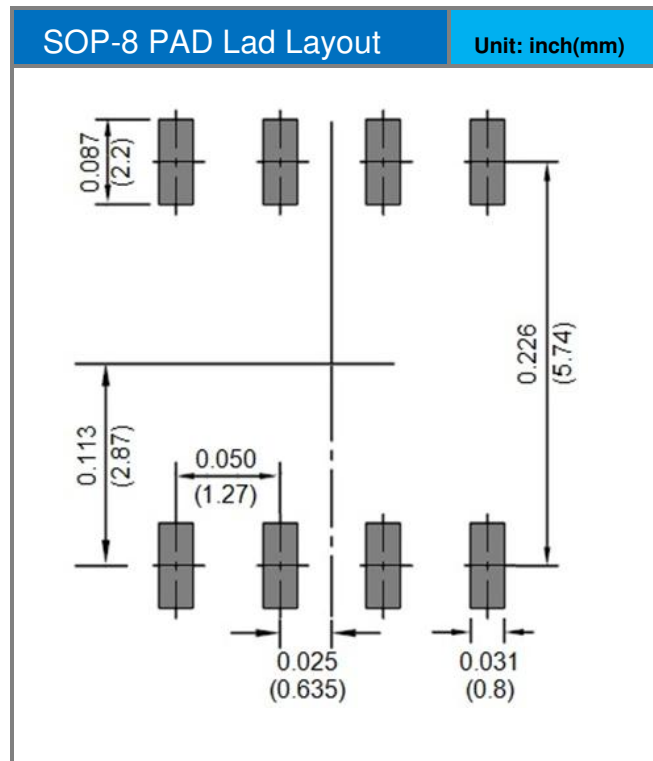
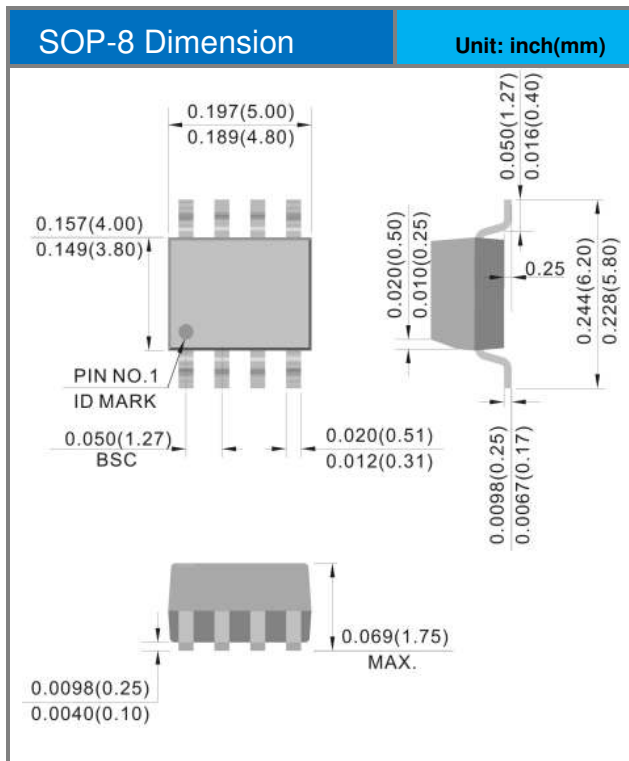


PJL9804

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJL9804_R2_00001	SOP-8	2.5K pcs / 13" reel	L9804	Halogen free

Packaging Information & Mounting Pad Layout





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