



# PJL9480

## 150V N-Channel Enhancement Mode MOSFET

<b>Voltage</b>	<b>150 V</b>	<b>Current</b>	<b>4 A</b>
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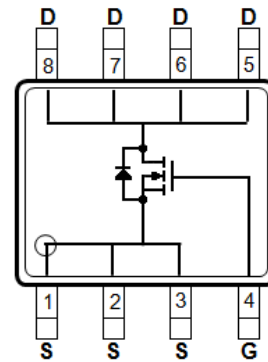
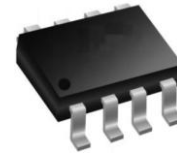
### Features

- RDS(ON), VGS@10V, ID@4A<65mΩ
- RDS(ON), VGS@6V, ID@2A<85mΩ
- 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

SOP-8



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V <sub>DS</sub>	150	V
Gate-Source Voltage		V <sub>GS</sub>	±25	V
Continuous Drain Current	T <sub>A</sub> =25°C	I <sub>D</sub>	4.0	A
	T <sub>A</sub> =70°C		3.2	
Pulsed Drain Current <sup>(Note 1)</sup>		I <sub>DM</sub>	16	A
Power Dissipation	T <sub>A</sub> =25°C	P <sub>D</sub>	2.5	W
	T <sub>A</sub> =70°C		1.6	
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C
Typical Thermal Resistance		R <sub>θJA</sub>	50	°C/W
- Junction to Ambient, t ≤ 10s <sup>(Note 6)</sup>				

- Limited only By Maximum Junction Temperature



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## Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>Static</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	150	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	2.7	4.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=4A$	-	52	65	m $\Omega$
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=6V, I_D=2A$	-	60	85	m $\Omega$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=150V, V_{GS}=0V$	-	-	1.0	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 25V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>Dynamic</b> (Note 7)						
Total Gate Charge	$Q_g$	$V_{DS}=75V, I_D=4A,$ $V_{GS}=10V$ (Note 1,2)	-	29.5	-	nC
Gate-Source Charge	$Q_{gs}$		-	9.2	-	
Gate-Drain Charge	$Q_{gd}$		-	8.0	-	
Input Capacitance	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V,$ $f=1.0\text{MHz}$	-	1764	-	pF
Output Capacitance	$C_{oss}$		-	148	-	
Reverse Transfer Capacitance	$C_{rss}$		-	62	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=30V, I_D=1A,$ $V_{GS}=10V, R_G=6\Omega$ (Note 1,2)	-	14	-	ns
Turn-On Rise Time	$t_r$		-	21	-	
Turn-Off Delay Time	$t_{d(off)}$		-	32	-	
Turn-Off Fall Time	$t_f$		-	23	-	
<b>Drain-Source Diode</b>						
Maximum Continuous Drain-Source Diode Forward Current	$I_S$	---	-	-	4.0	A
Diode Forward Voltage	$V_{SD}$	$I_S=1A, V_{GS}=0V$	-	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.  $R_{\theta JA}$  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 inch<sup>2</sup> with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.



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## TYPICAL CHARACTERISTIC CURVES

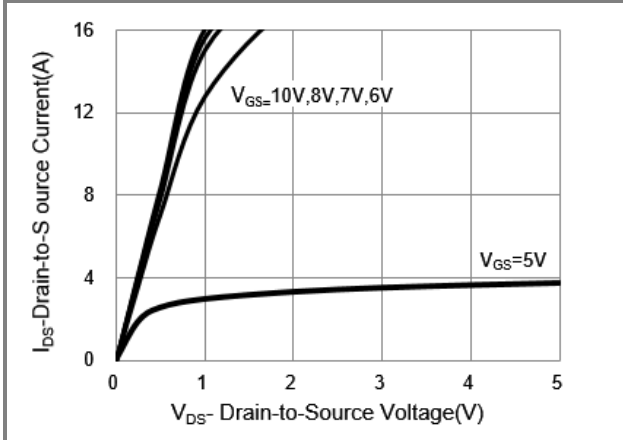


Fig.1 Output Characteristics

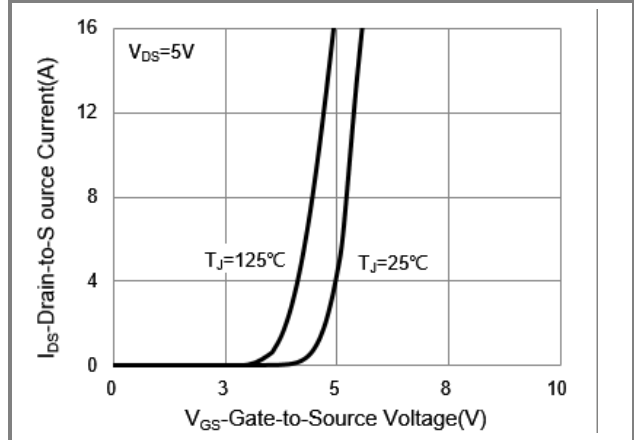


Fig.2 Transfer Characteristics

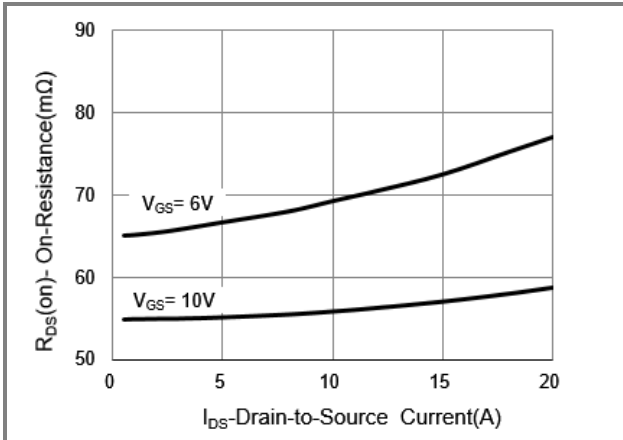


Fig.3 On-Resistance vs. Drain Current

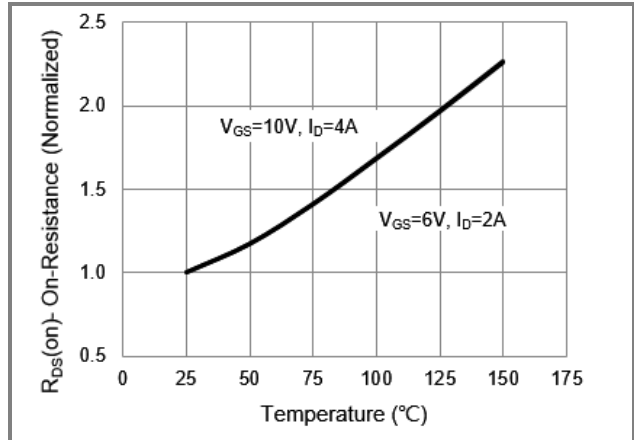


Fig.4 On-Resistance vs. Junction temperature

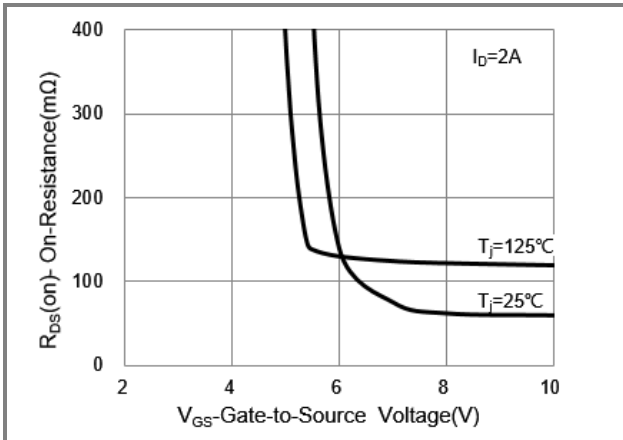


Fig.5 On-Resistance Variation with VGS.

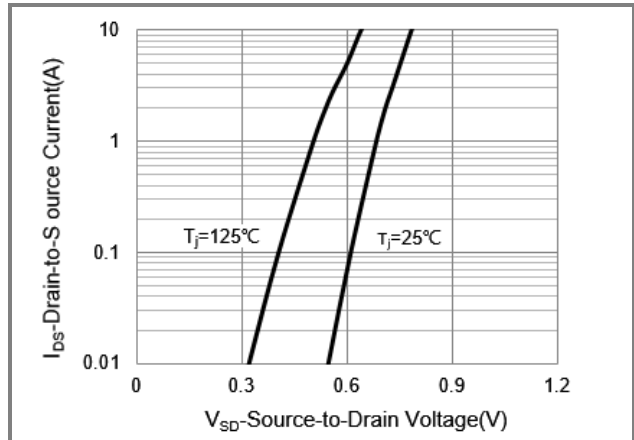


Fig.6 Source-Drain Diode Forward Voltage



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## TYPICAL CHARACTERISTIC CURVES

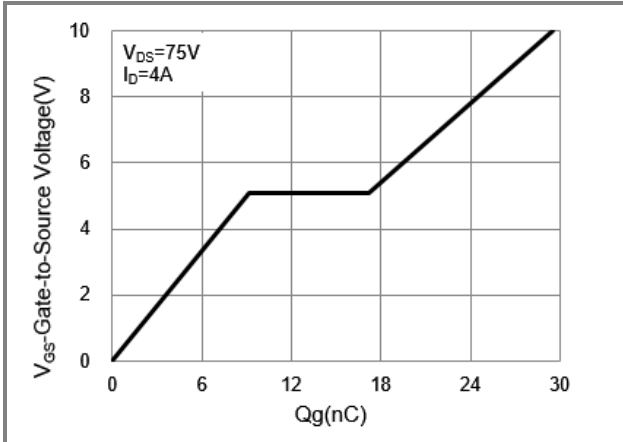


Fig.7 Gate-Charge Characteristics

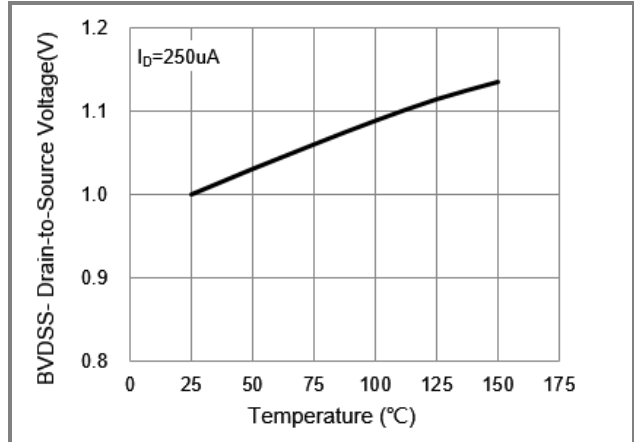


Fig.8 Breakdown Voltage Variation vs. Temperature

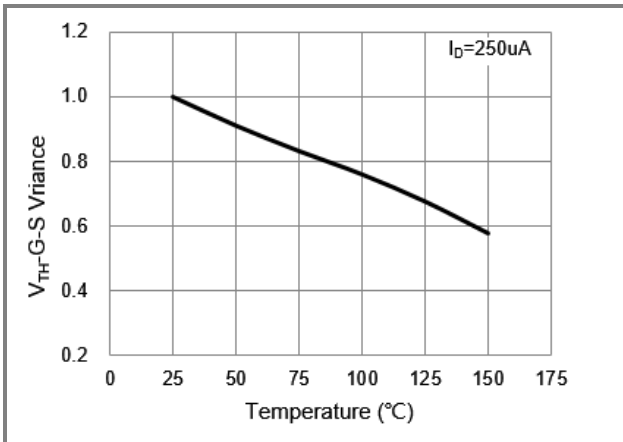


Fig.9 Threshold Voltage Variation with Temperature

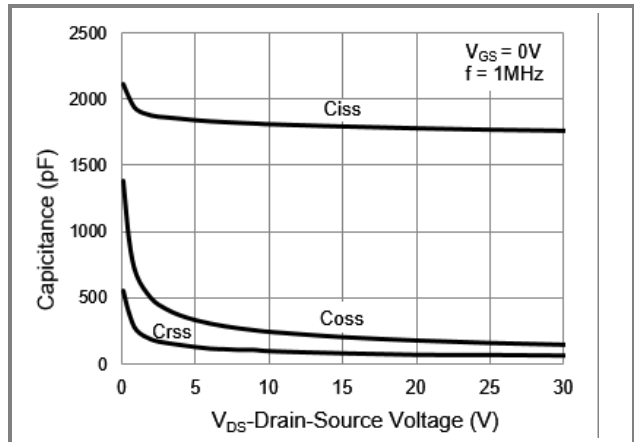


Fig.10 Capacitance vs. Drain-Source Voltage

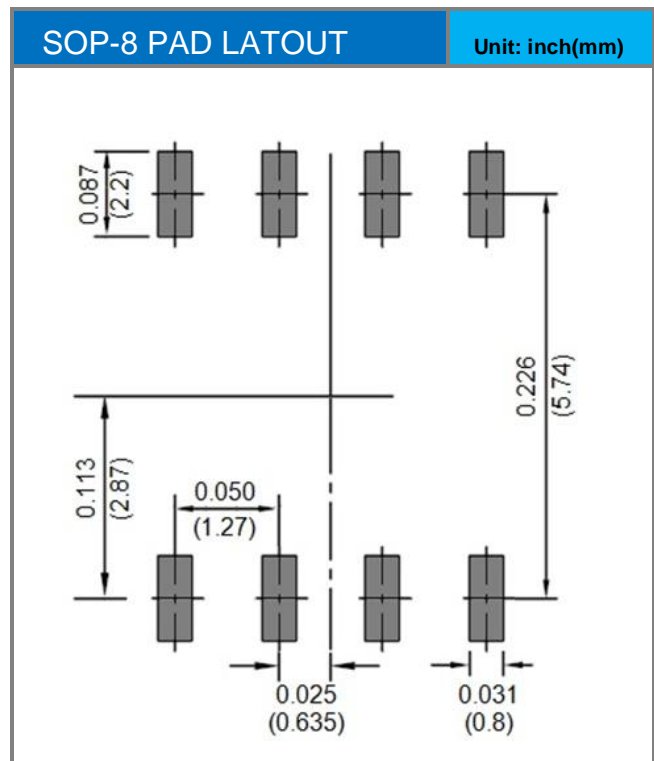
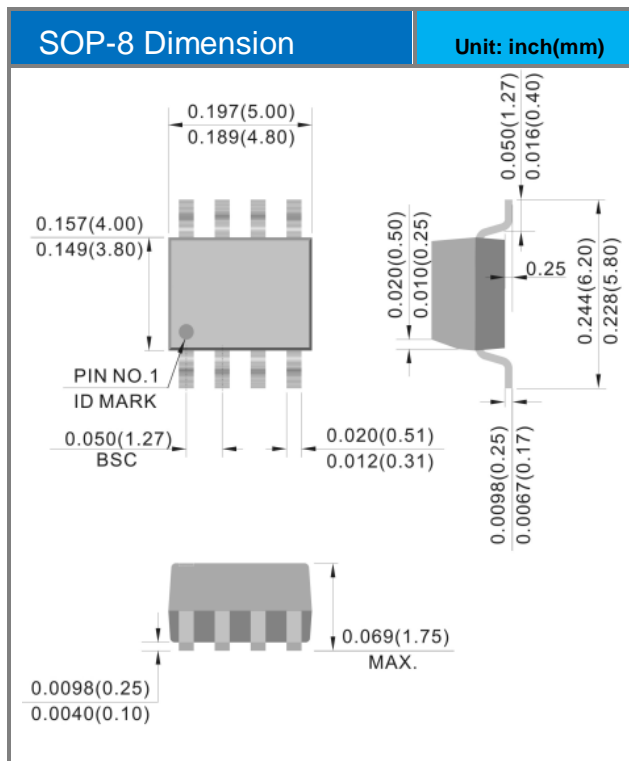


# PJL9480

## PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJL9480_R2_00001	SOP-8	2.5K pcs / 13" reel	L9480	Halogen free

## Packaging Information & Mounting Pad Layout





## PJL9480

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