



PJQ2422

30V N-Channel Enhancement Mode MOSFET

Voltage	30 V	Current	8 A
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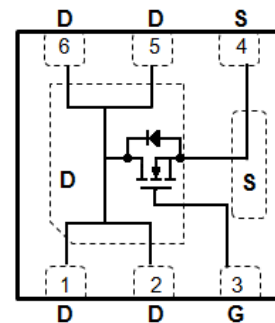
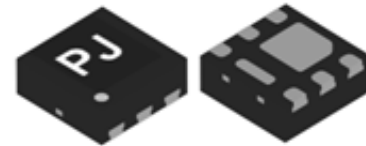
Features

- $R_{DS(ON)}, V_{GS}@10V, I_D@8A < 18m\Omega$
- $R_{DS(ON)}, V_{GS}@4.5V, I_D@6A < 28m\Omega$
- 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: DFN2020B-6L Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0086 grams

DFN2020B-6L



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	8.0	A
Pulsed Drain Current		I_{DM}	32	
Power Dissipation	$T_A=25^\circ\text{C}$	P_D	2.0	W
	Derate above 25°C		16	mW/ $^\circ\text{C}$
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 ^(Note 4)				



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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}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.7	2.5	
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$	-	16	18	m Ω
		$V_{GS}=4.5V, I_D=6A$	-	23	28	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1.0	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Dynamic (Note 5)						
Total Gate Charge	Q_g	$V_{DS}=15V, I_D=8A,$ $V_{GS}=4.5V$ (Note 2,3)	-	4.3	-	nC
Gate-Source Charge	Q_{gs}		-	1.3	-	
Gate-Drain Charge	Q_{gd}		-	1.6	-	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0\text{MHz}$	-	392	-	pF
Output Capacitance	C_{oss}		-	76	-	
Reverse Transfer Capacitance	C_{rss}		-	54	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15V, I_D=1A,$ $V_{GS}=10V, R_G=6\Omega$ (Note 2,3)	-	5.9	-	ns
Turn-On Rise Time	t_r		-	11	-	
Turn-Off Delay Time	$t_{d(off)}$		-	17	-	
Turn-Off Fall Time	t_f		-	3.8	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	1.5	A
Diode Forward Voltage	V_{SD}	$I_S=1.0A, V_{GS}=0V$	-	0.73	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. $R_{\theta JA}$ 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 FR-4 with 2oz. square pad of copper
5. Guaranteed by design, not subject to production testing.



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TYPICAL CHARACTERISTIC CURVES

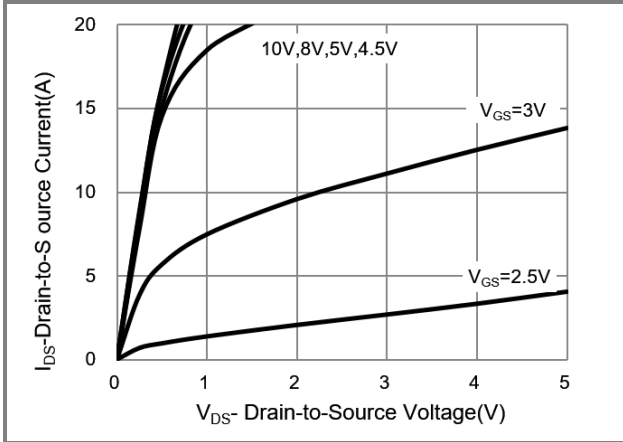


Fig.1 On-Region Characteristics

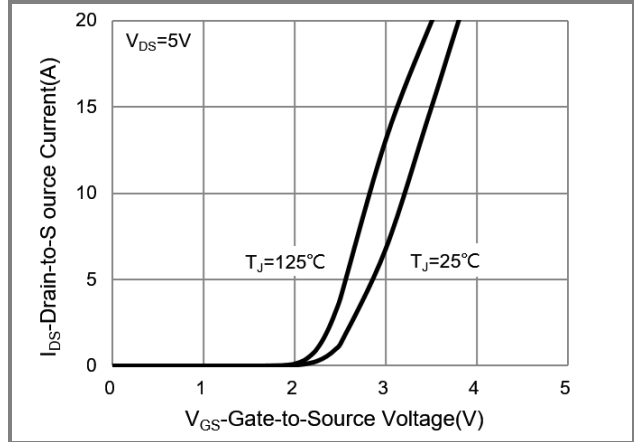


Fig.2 Transfer Characteristics

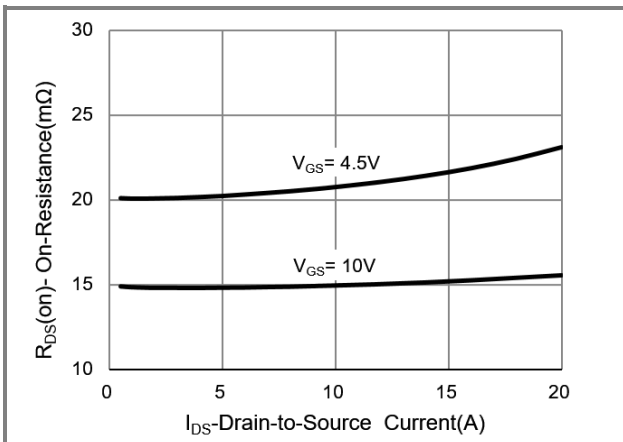


Fig.3 On-Resistance vs. Drain Current

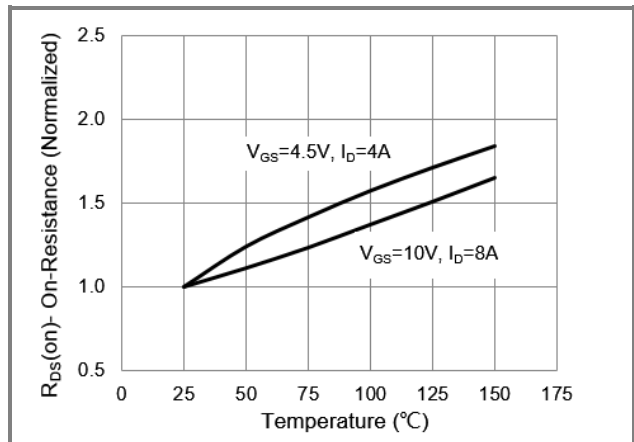


Fig.4 On-Resistance vs. Junction temperature

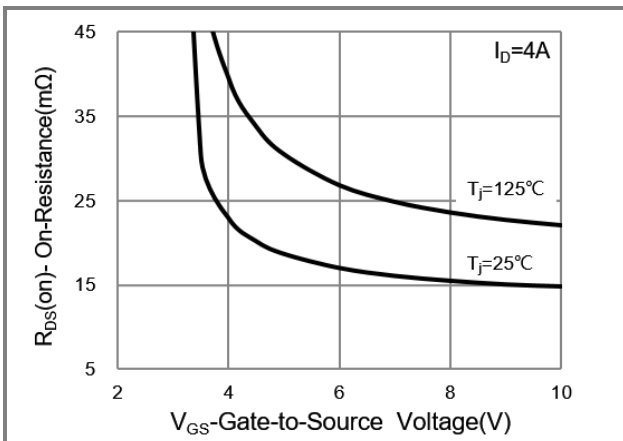


Fig.5 On-Resistance Variation with VGS.

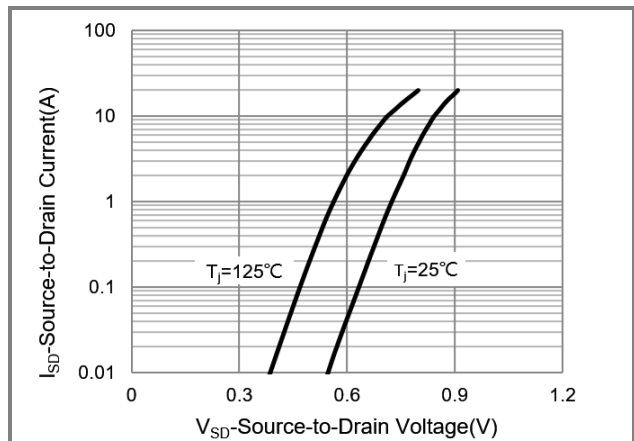


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES

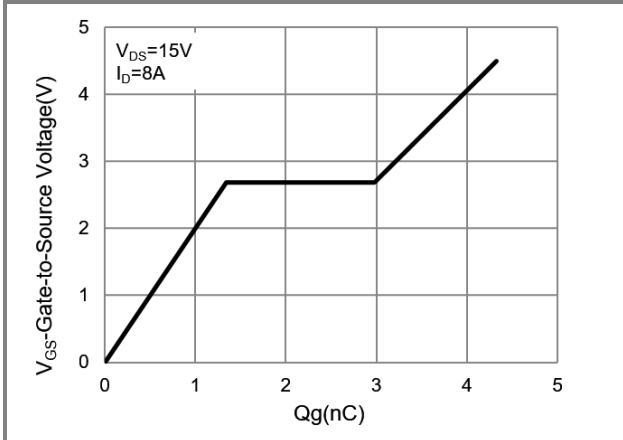


Fig.7 Gate-Charge Characteristics

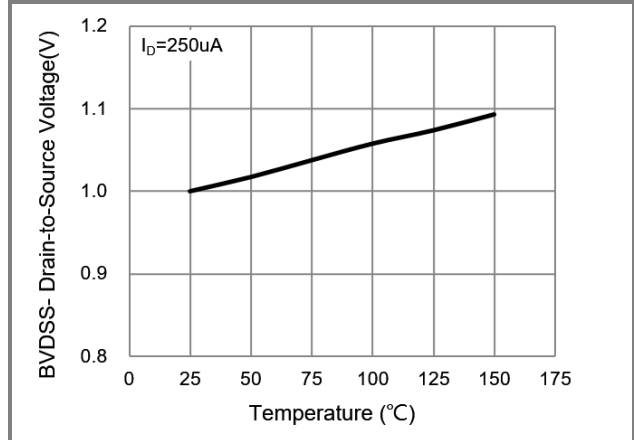


Fig.8 Breakdown Voltage Variation vs. Temperature.

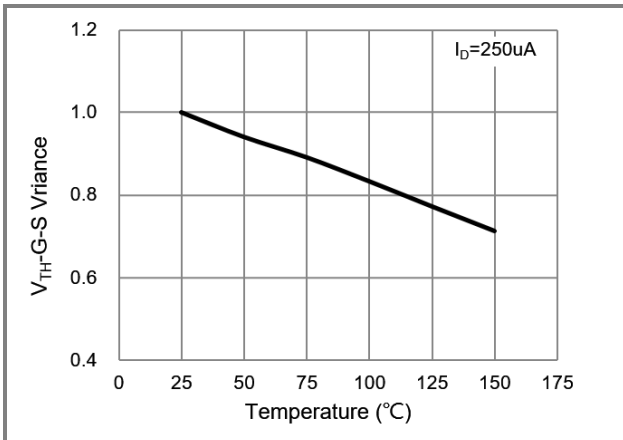


Fig.9 Threshold Voltage Variation with Temperature

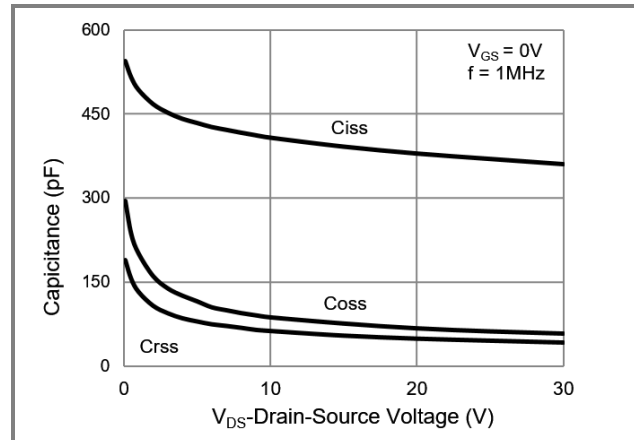


Fig.10 Capacitance vs. Drain-Source Voltage.

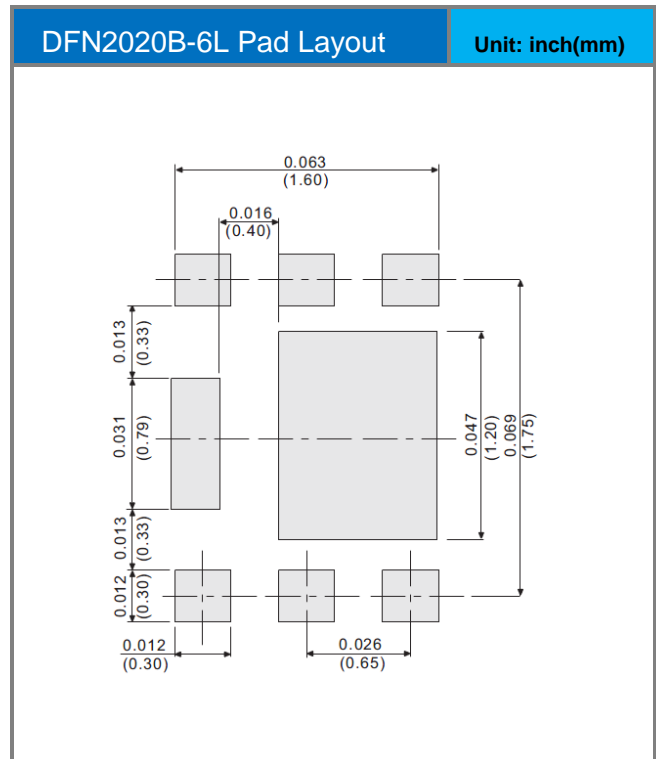
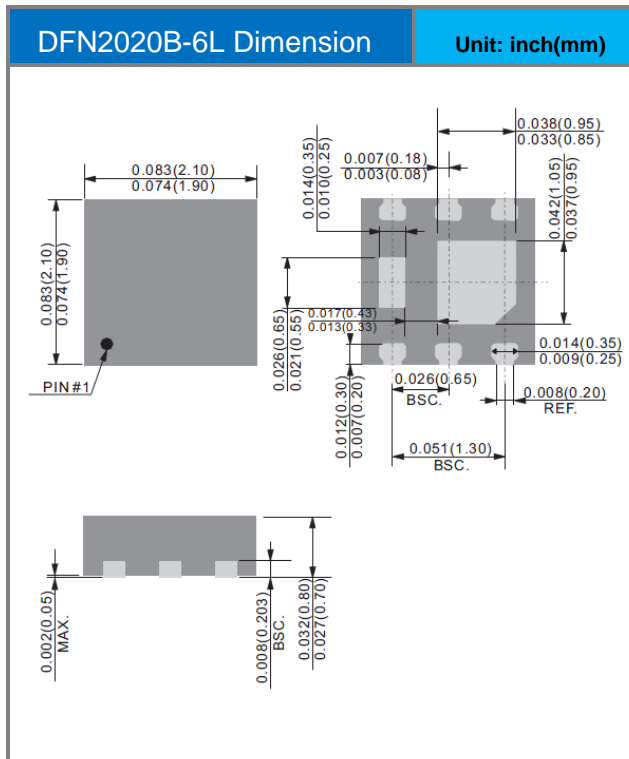


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PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJQ2422_R1_00001	DFN2020B-6L	3K pcs / 7" reel	422	Halogen free

MOUNTING PAD LAYOUT





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