



PJQ2410

30V N-Channel Enhancement Mode MOSFET

Voltage	30 V	Current	10 A
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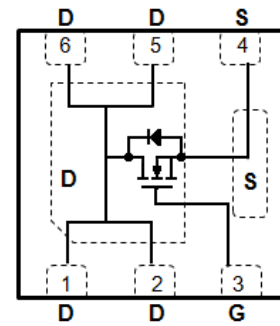
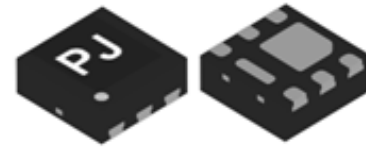
Features

- $R_{DS(ON)}$, $V_{GS}@10V, I_D@5A < 12m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V, I_D@3A < 18m\Omega$
- High switching speed
- Improved dv/dt capability
- Low gate charge
- Low reverse transfer capacitance
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

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	10	A
Pulsed Drain Current (Note 1)		I_{DM}	40	
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	$^\circ\text{C}/\text{W}$
- Junction to Ambient, $t \leq 10s$ (Note 6)				



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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	1.53	2.5	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =5A	-	9.7	12	mΩ
		V _{GS} =4.5V, I _D =3A	-	13	18	
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 5)						
Total Gate Charge	Q _g	V _{DS} =15V, I _D =5A, V _{GS} =4.5V (Note 3)	-	7.1	-	nC
Gate-Source Charge	Q _{gs}		-	2.0	-	
Gate-Drain Charge	Q _{gd}		-	2.8	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1.0MHZ	-	660	-	pF
Output Capacitance	C _{oss}		-	92	-	
Reverse Transfer Capacitance	C _{rss}		-	71	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} =15V, I _D =1A, V _{GS} =10V, R _G =6Ω (Note 3)	-	6.7	-	ns
Turn-On Rise Time	t _r		-	11	-	
Turn-Off Delay Time	t _{d(off)}		-	27	-	
Turn-Off Fall Time	t _f		-	8.3	-	
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	-	0.71	1.0	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. 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 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

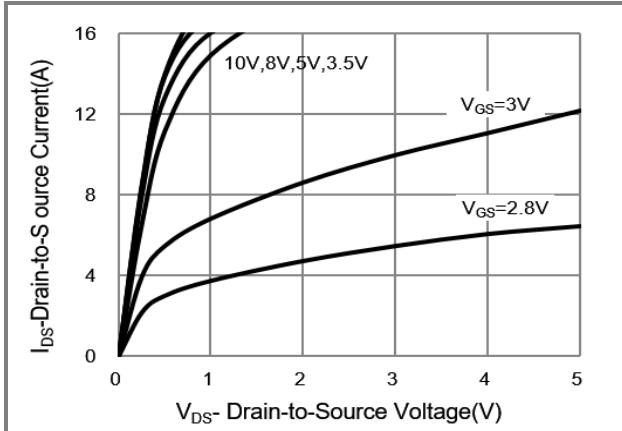


Fig.1 On-Region Characteristics

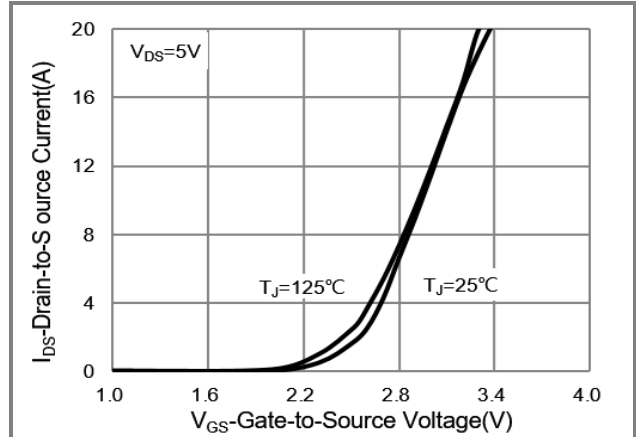


Fig.2 Transfer Characteristics

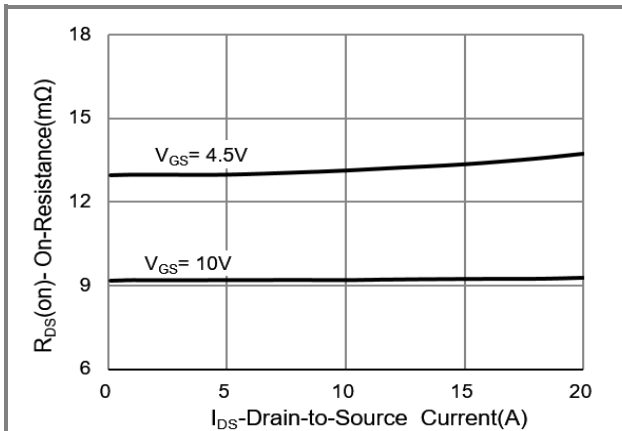


Fig.3 On-Resistance vs. Drain Current

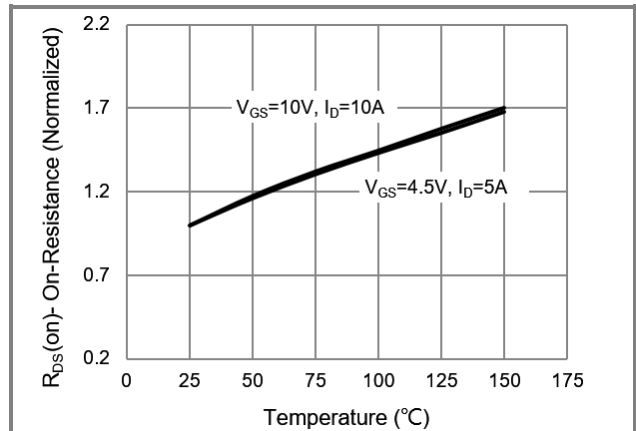


Fig.4 On-Resistance vs. Junction temperature

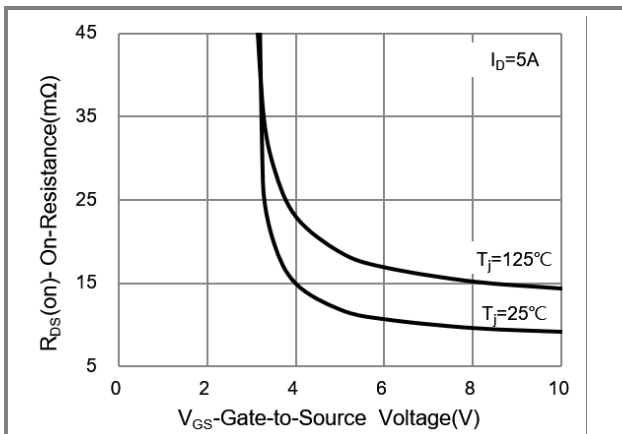


Fig.5 On-Resistance Variation with VGS.

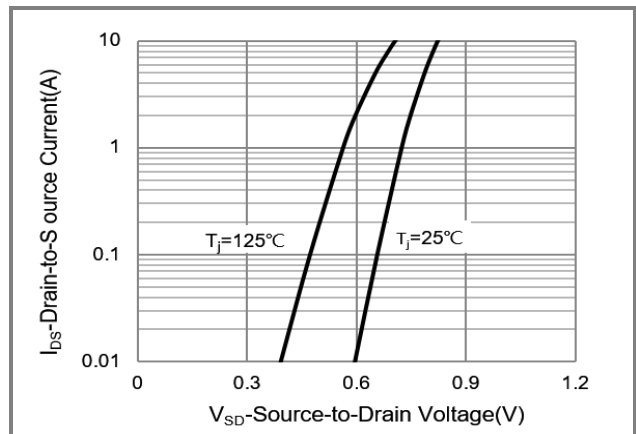


Fig.6 Body Diode Characteristics



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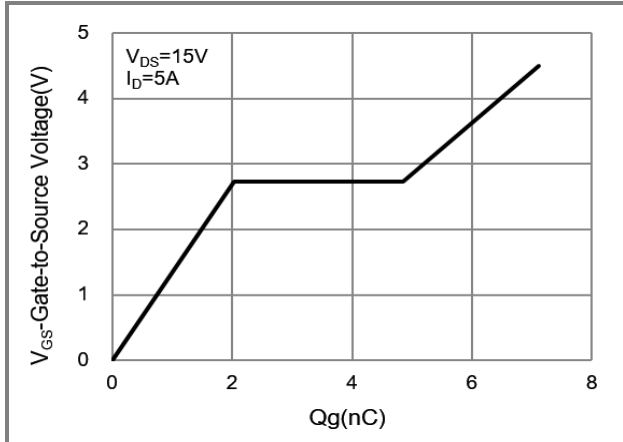


Fig.7 Gate-Charge Characteristics

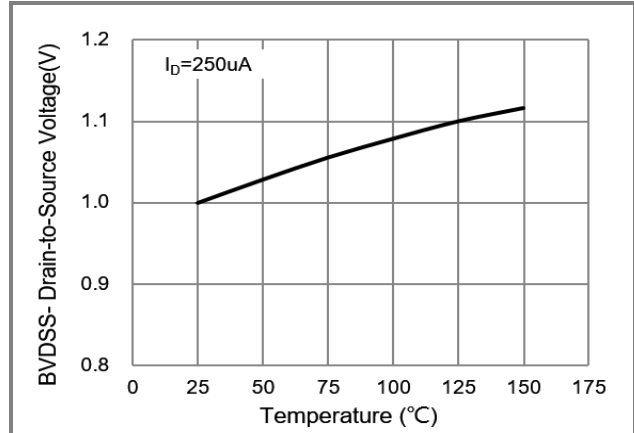


Fig.8 Breakdown Voltage Variation vs. Temperature.

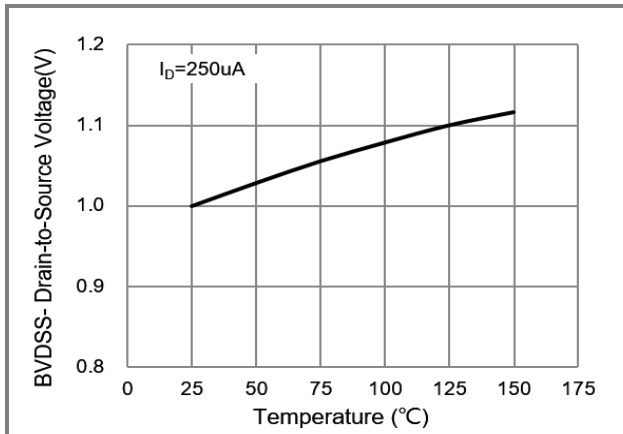


Fig.9 Threshold Voltage Variation with Temperature

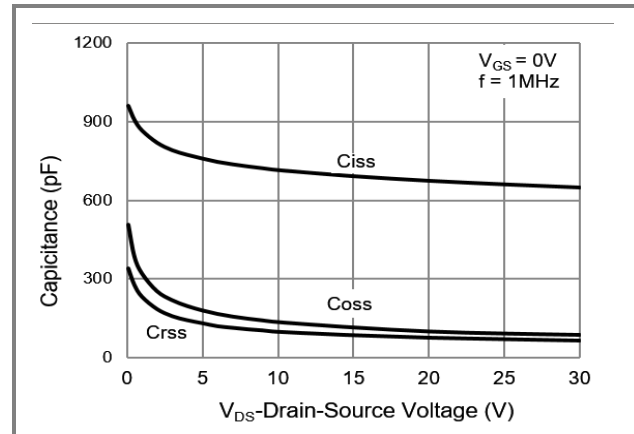


Fig.10 Capacitance vs. Drain-Source Voltage.



PJQ2410

Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJQ2410_R1_00001	DFN2020B-6L	3K pcs / 7" reel	410	Halogen free RoHS compliant

Packaging Information & Mounting Pad Layout

