

PJQ2410-AU

30V N-Channel Enhancement Mode Mosfet

Voltage

30 V

Current

10 A

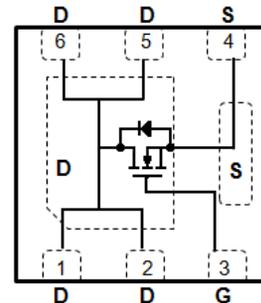
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@5A < 12m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_D@3A < 18m\Omega$
- High switching speed
- Improved dv/dt capability
- Low gate charge
- Low reverse transfer capacitance
- AEC-Q101 qualified
- 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 : 0.0086 grams

DFN2020B-6L



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	30	V
Gate-Source Voltage		V _{GS}	+20	
Continuous Drain Current ^(Note 4)		I _D	10	A
Pulsed Drain Current ^(Note 1)		I _{DM}	40	
Power Dissipation	T _A =25°C	P _D	2	W
	Derate above 25°C		16	mW/°C
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55~150	°C
Typical Thermal Resistance		R _{θJA}	62.5	°C/W
- Junction to Ambient ^(Note 4,5)				

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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	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	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 =5A, V _{GS} =4.5V (Note 2,3)	-	7.1	-	nC
Gate-Source Charge	Q _{gs}		-	2	-	
Gate-Drain Charge	Q _{gd}		-	2.8	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHZ	-	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 2,3)	-	6.7	
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 =1A, V _{GS} =0V	-	0.71	1	V

NOTES :

1. Pulse width ≤ 300us, Duty cycle ≤ 2%.
2. Essentially independent of operating temperature typical characteristics.
3. 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.
4. The maximum current rating is package limited.
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

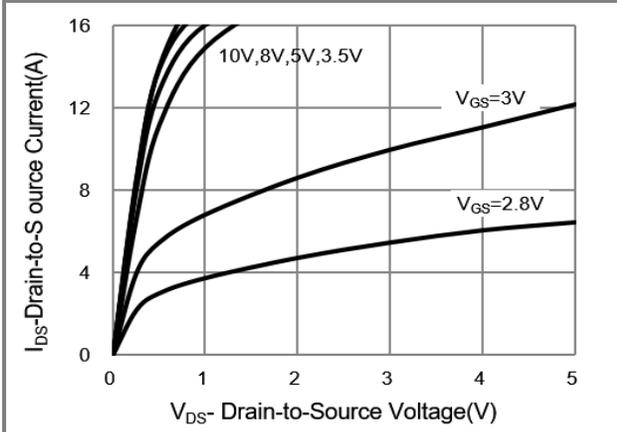


Fig.1 On-Region Characteristics

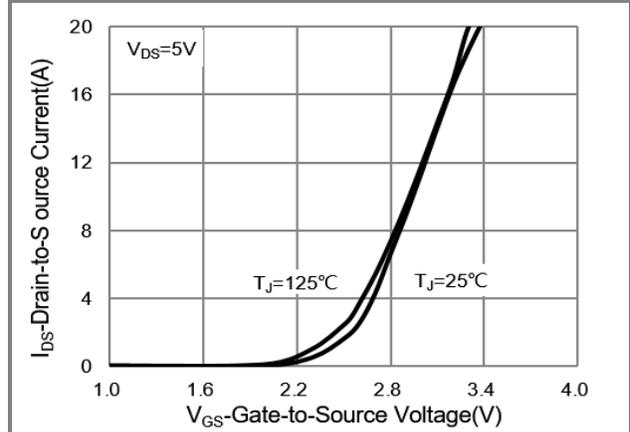


Fig.2 Transfer Characteristics

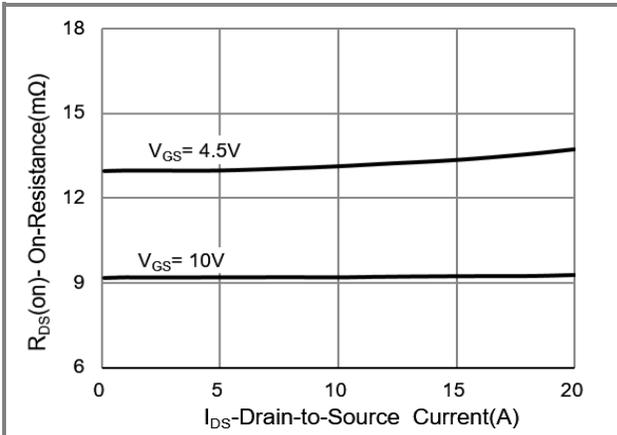


Fig.3 On-Resistance vs. Drain Current

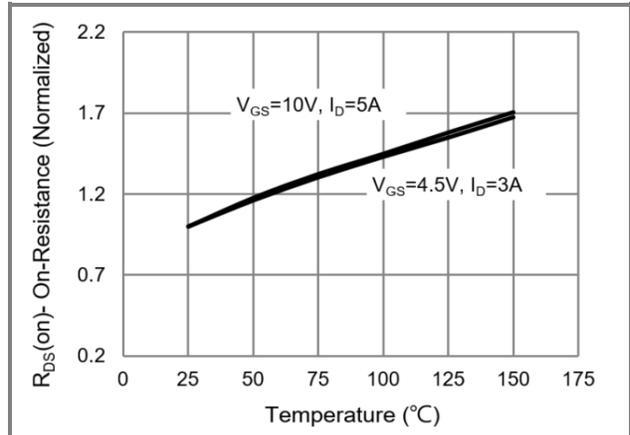


Fig.4 On-Resistance vs. Junction temperature

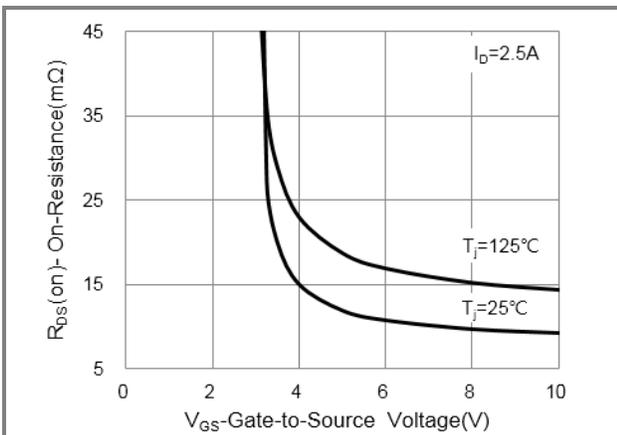


Fig.5 On-Resistance Variation with V_{GS}

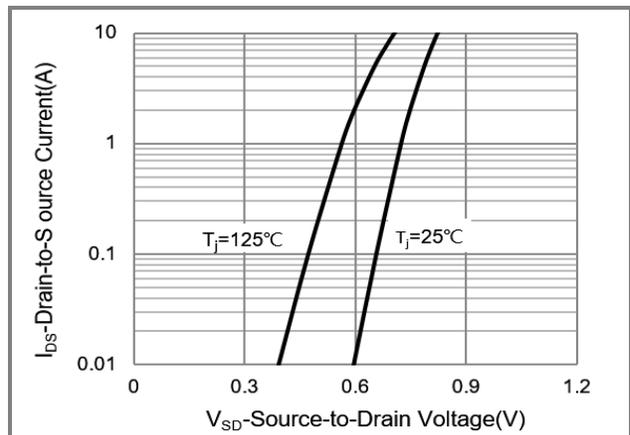


Fig.6 Body Diode Characteristics

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TYPICAL CHARACTERISTIC CURVES

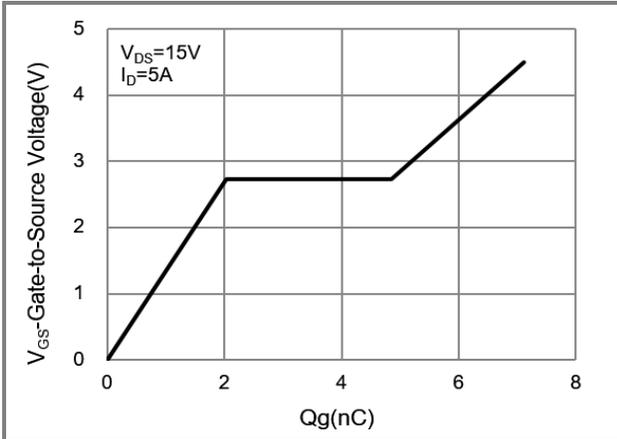


Fig.7 Gate-Charge Characteristics

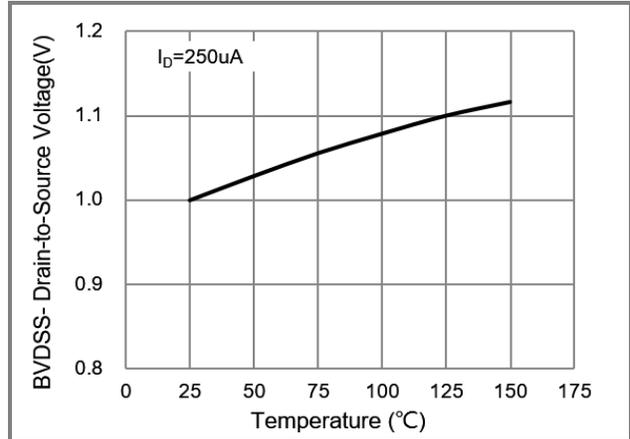


Fig.8 Breakdown Voltage Variation vs. Temperature

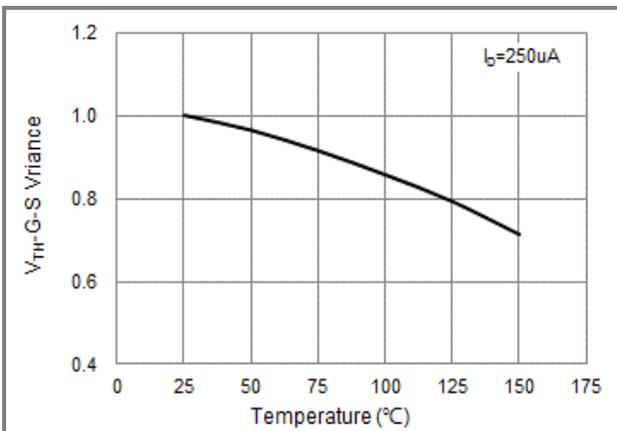


Fig.9 Threshold Voltage Variation with Temperature

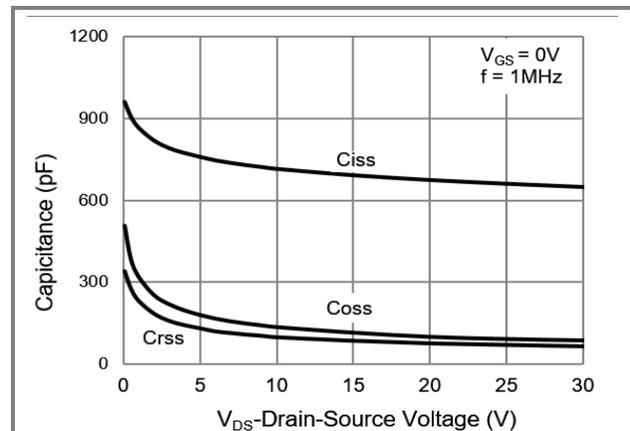


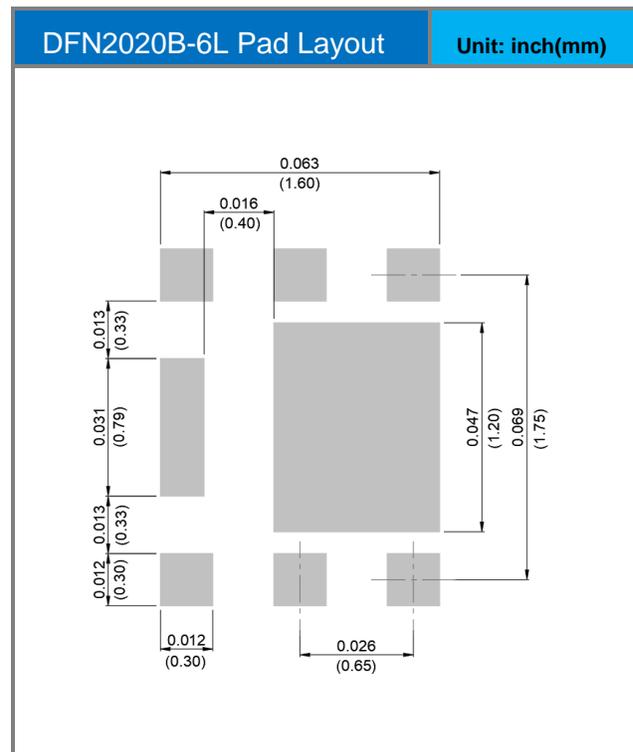
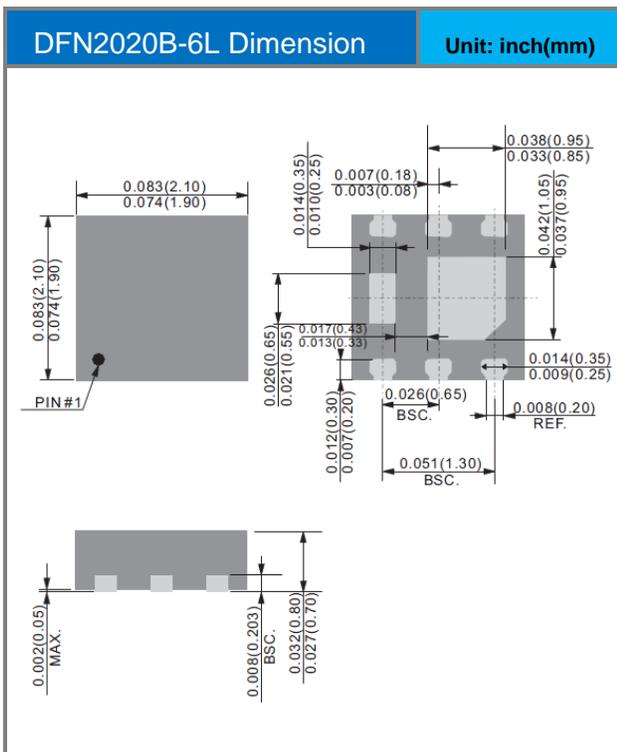
Fig.10 Capacitance vs. Drain-Source Voltage

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PJQ2410-AU	DFN2020B-6L	3K pcs / 7" reel	410

Packaging Information & Mounting Pad Layout



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