

PJQ2407

30V P-Channel Enhancement Mode MOSFET

Voltage	-30 V	Current	-8.4A
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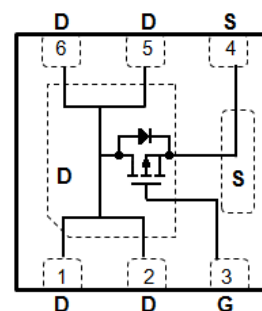
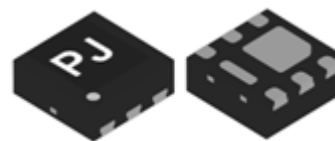
Features

- $R_{DS(ON)}$, $V_{GS}@-10V, I_D@-8.4A < 20m\Omega$
- $R_{DS(ON)}$, $V_{GS}@-4.5V, I_D@-5A < 32m\Omega$
- 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 IEC61249 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		I _D	-8.4	A
Pulsed Drain Current		I _{DM}	-33.6	
Power Dissipation	T _a =25°C	P _D	2.0	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 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	-1.5	-2.5	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-8.4A	-	17	20	mΩ
		V _{GS} =-4.5V, I _D =-5A	-	26	32	
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 =-5A, V _{GS} =-4.5V (Note 1,2)	-	11	-	nC
Gate-Source Charge	Q _{gs}		-	3.2	-	
Gate-Drain Charge	Q _{gd}		-	3.9	-	
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1.0MHZ	-	1169	-	pF
Output Capacitance	C _{oss}		-	180	-	
Reverse Transfer Capacitance	C _{rss}		-	132	-	
Turn-On Delay Time	td _(on)	V _{DS} =-15V, ID=-1A, V _{GS} =-10V, R _G =6Ω (Note 1,2)	-	5.9	-	ns
Turn-On Rise Time	tr		-	33	-	
Turn-Off Delay Time	td _(off)		-	55	-	
Turn-Off Fall Time	tf		-	34	-	
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	-	-0.73	-1	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

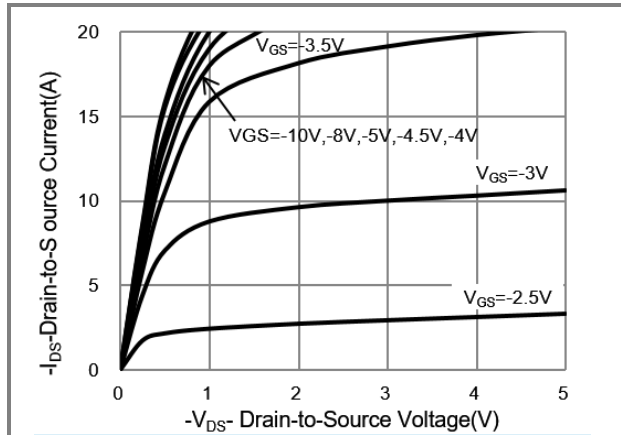


Fig.1 On-Region Characteristics

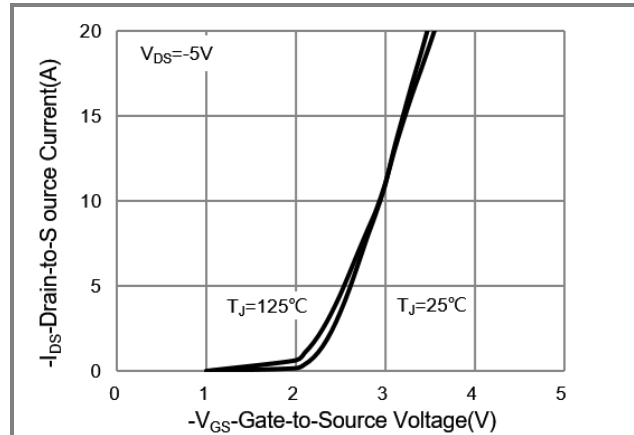


Fig.2 Transfer Characteristics

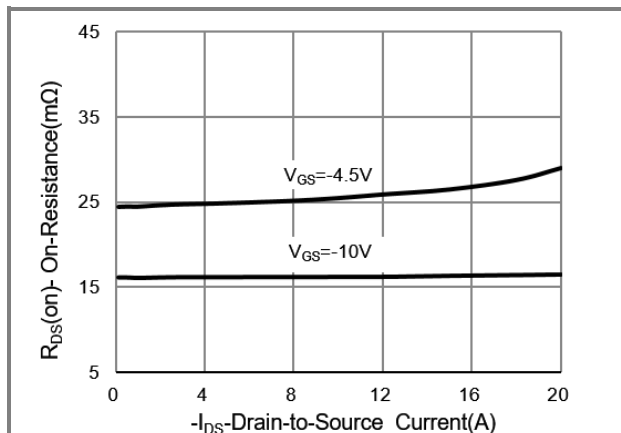


Fig.3 On-Resistance vs. Drain Current

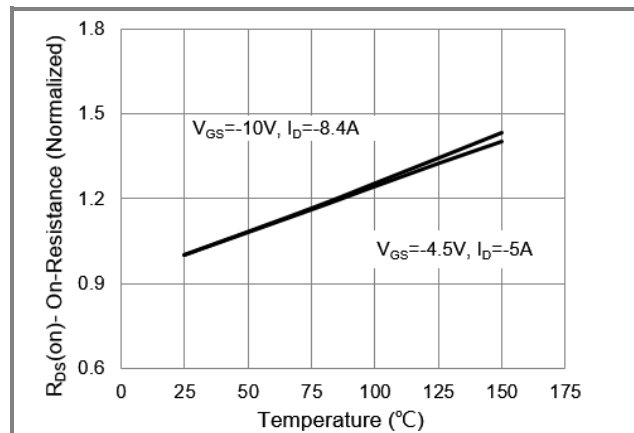


Fig.4 On-Resistance vs. Junction temperature

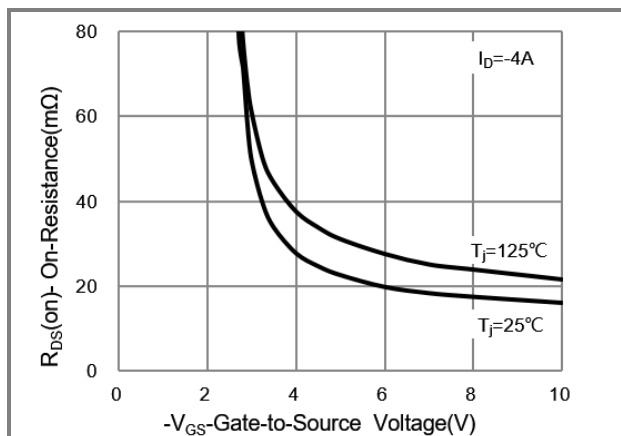


Fig.5 On-Resistance Variation with V_GS.

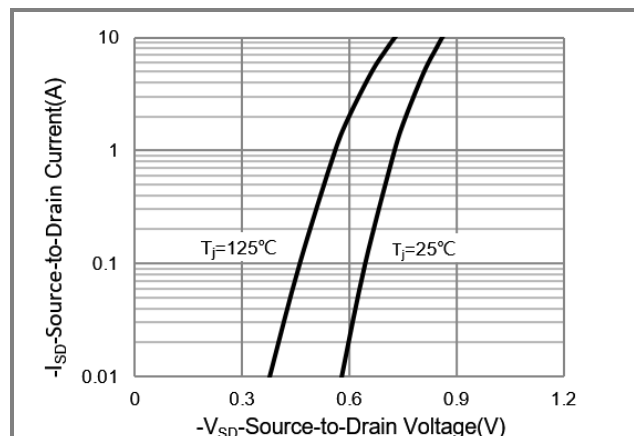


Fig.6 Body Diode Characteristics



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TYPICAL CHARACTERISTIC CURVES

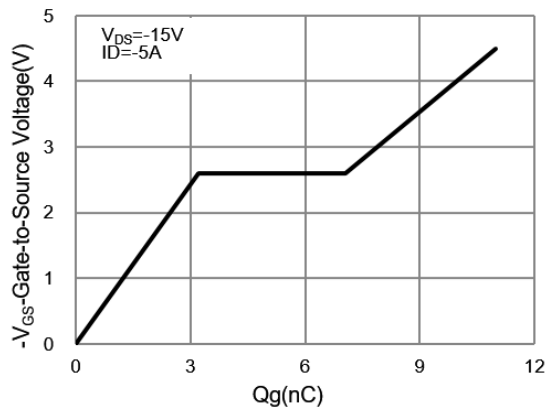


Fig.7 Gate-Charge Characteristics

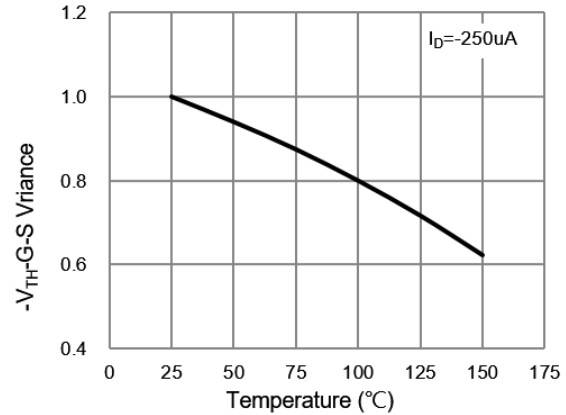


Fig.8 Threshold Voltage Variation with Temperature.

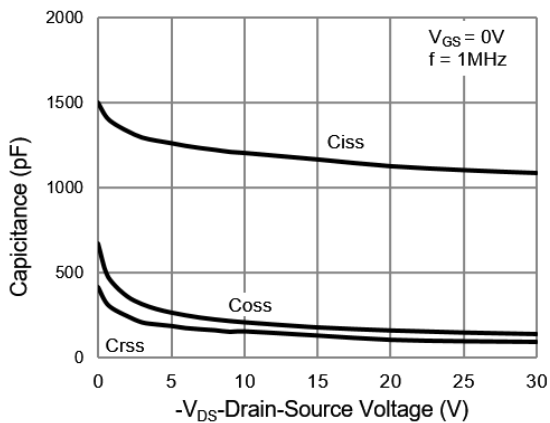


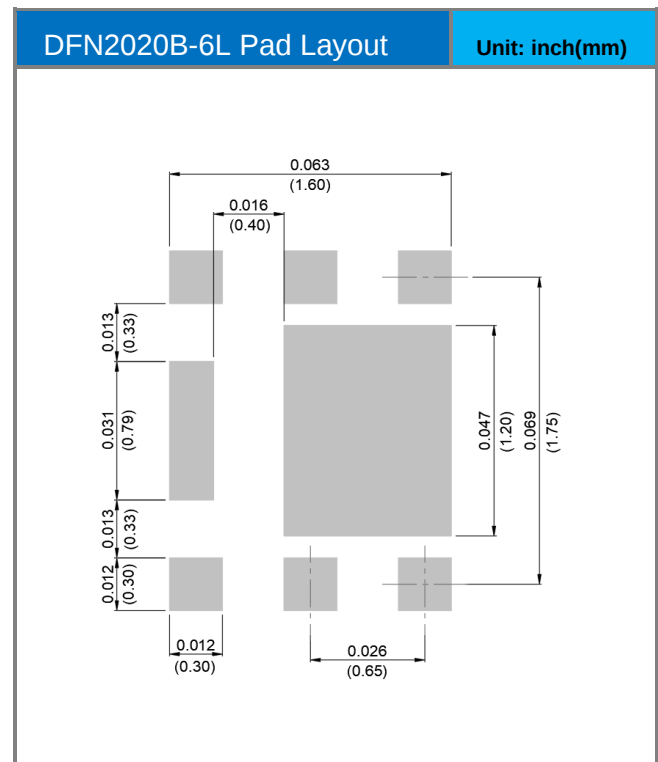
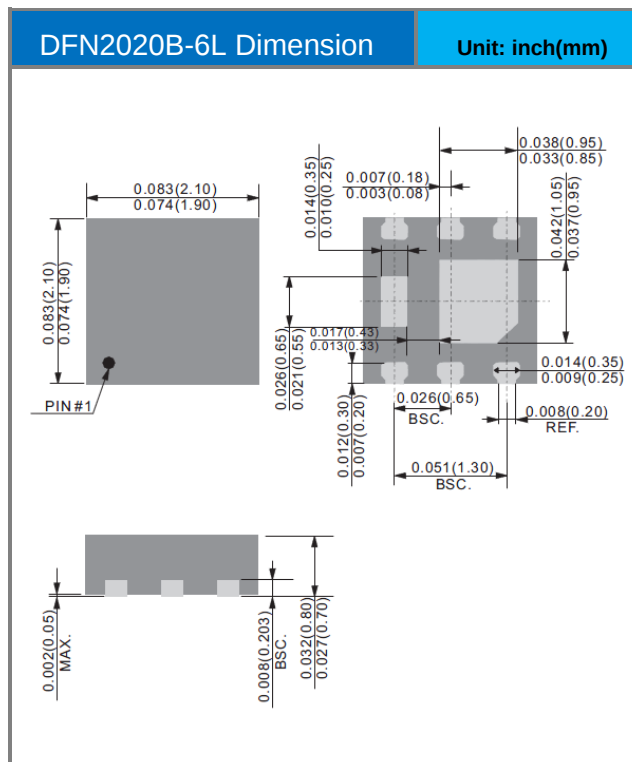
Fig.9 Capacitance vs. Drain-Source Voltage.

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Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJQ2407_R1_00001	DFN2020B-6L	3K pcs / 7" reel	407	Halogen free RoHS compliant

Packaging Information & Mounting Pad Layout





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