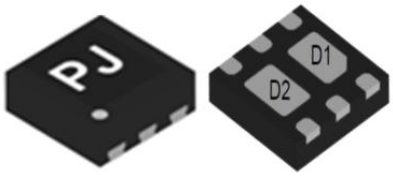
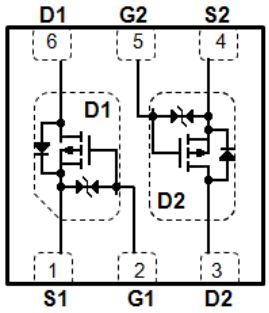
PJQ2815

20V P-Channel Enhancement Mode MOSFET

Voltage	-20 V	Current	-4.2A

DFN2020-6L





Features

- RDS(ON) , VGS@-4.5V, ID@-4.2A<52mΩ
- RDS(ON) , VGS@-2.5V, ID@-3.3A<62mΩ
- RDS(ON) , VGS@-1.8V, ID@-2.2A<73mΩ
- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc
- ESD Protected
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. (Halogen Free)

Mechanical Data

- Case: DFN2020-6L Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00032 ounces, 0.0093 grams
- Marking: 815

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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±8	V
Continuous Drain Current		I_D	-4.2	A
Pulsed Drain Current		I_{DM}	-16.8	A
Power Dissipation	T_a=25°C	P_D	1.5	W
	Derate above 25°C		12	mW/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Typical Thermal resistance - Junction to Ambient (Note 3)		$R_{\theta JA}$	83.3	°C/W

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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	-20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250uA	-0.35	-0.55	-0.9	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-4.5V,I_D=-4.2A	-	43	52	mΩ
		V_{GS}=-2.5V,I_D=-3.3A	-	51	62	
		V_{GS}=-1.8V,I_D=-2.2A	-	61	73	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V	-	-0.01	-1.0	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±8V,V_{DS}=0V	-	±6	±10	uA
Dynamic (Note 6)						
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-4.2A, V_{GS}=-4.5V (Note 1,2)	-	24	-	nC
Gate-Source Charge	Q_{gs}		-	1.5	-	
Gate-Drain Charge	Q_{gd}		-	2.5	-	
Input Capacitance	Ciss	V_{DS}=-10V, V_{GS}=0V, f=1.0MHZ	-	907	-	pF
Output Capacitance	Coss		-	90	-	
Reverse Transfer Capacitance	Crss		-	70	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=-10V, I_D=-4.2A, V_{GS}=-4.5V, R_G=6Ω (Note 1,2)	-	45	-	ns
Turn-On Rise Time	tr		-	79	-	
Turn-Off Delay Time	$td_{(off)}$		-	193	-	
Turn-Off Fall Time	tf		-	826	-	
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	-	-0.66	-1.2	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 TJ(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°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 $inch^2$ with 2oz.square pad of copper.
6. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

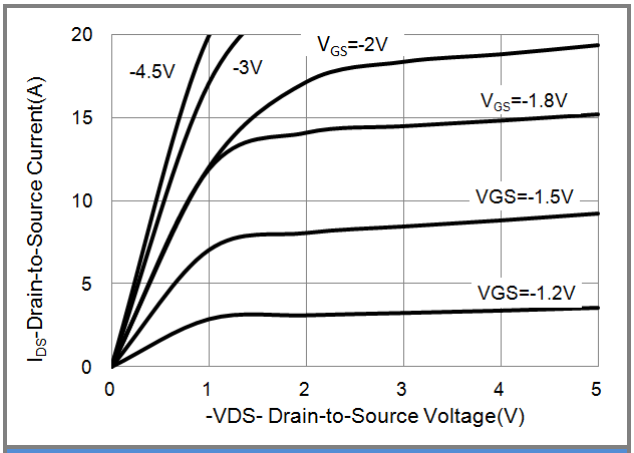


Fig.1 On-Region Characteristics

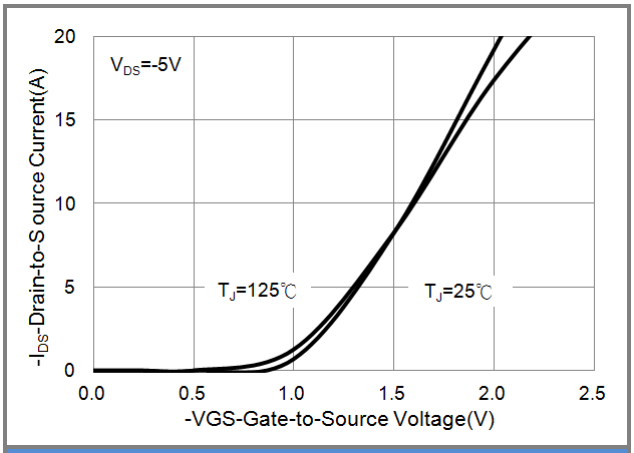


Fig.2 Transfer Characteristics

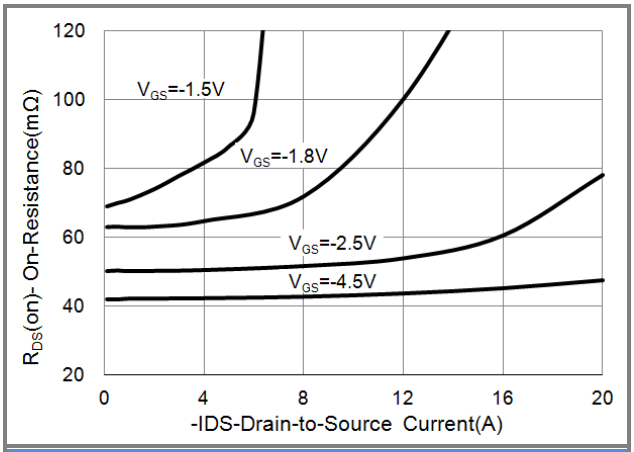


Fig.3 On-Resistance vs. Drain Current

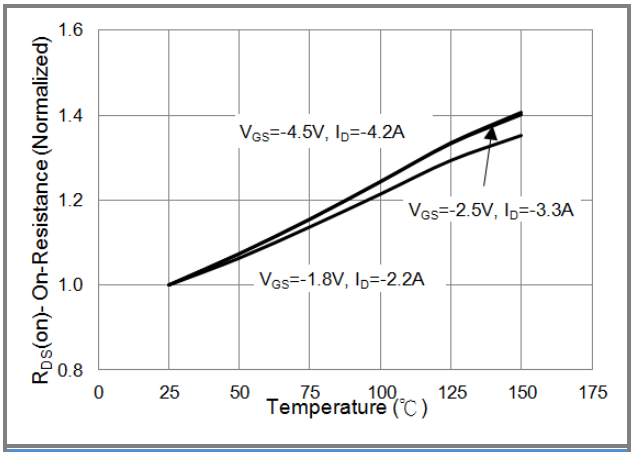


Fig.4 On-Resistance vs. Junction temperature

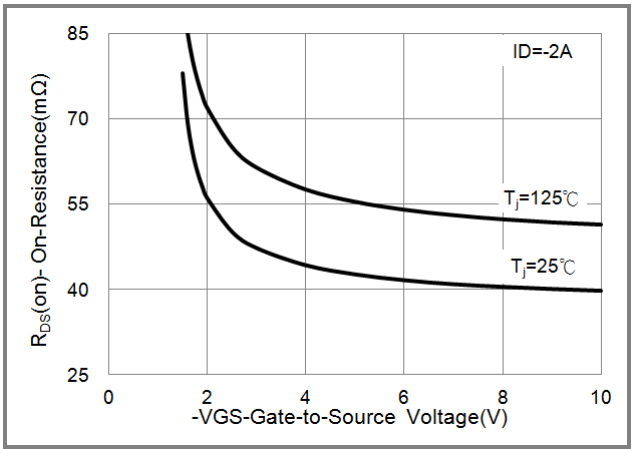


Fig.5 On-Resistance Variation with VGS.

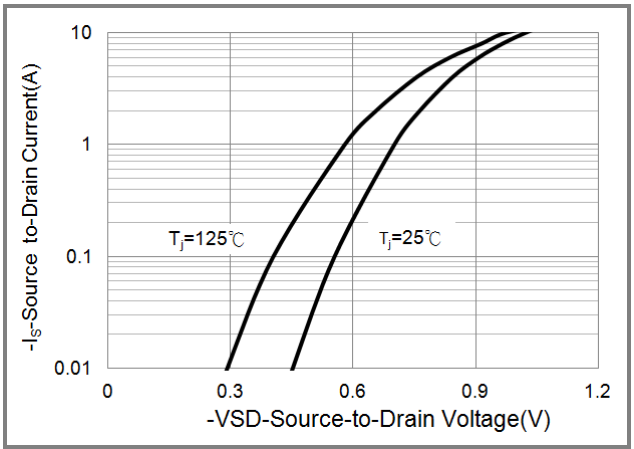


Fig.6 Body Diode Characteristics

PJQ2815

TYPICAL CHARACTERISTIC CURVES

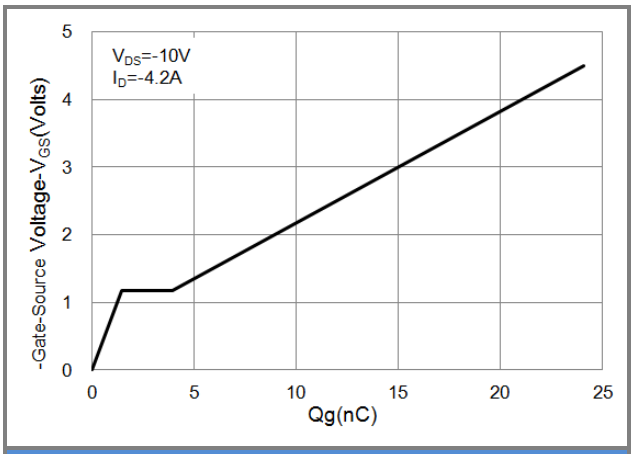


Fig.7 Gate-Charge Characteristics

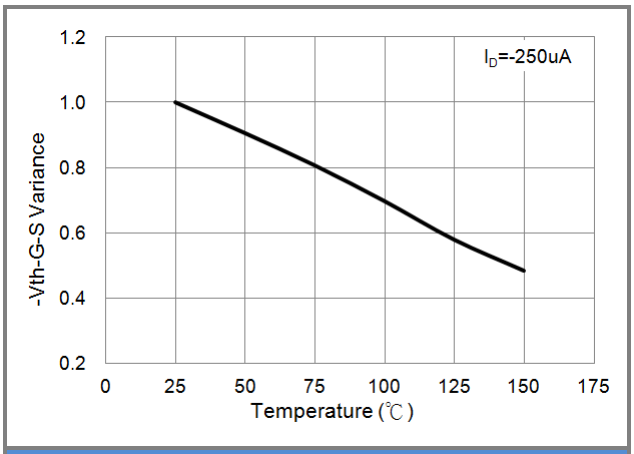


Fig.8 Threshold Voltage Variation with Temperature.

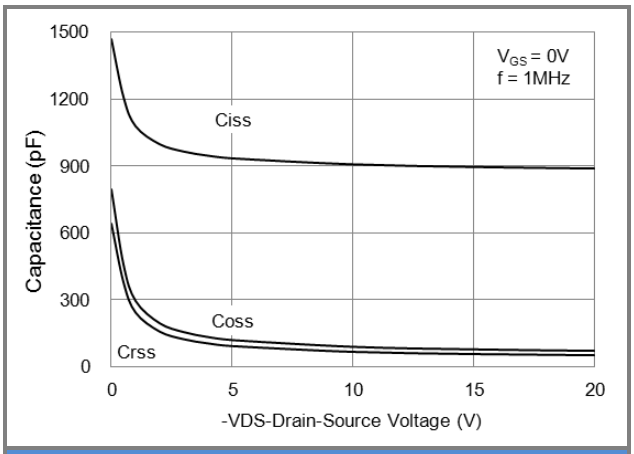


Fig.9 Capacitance vs. Drain-Source Voltage.

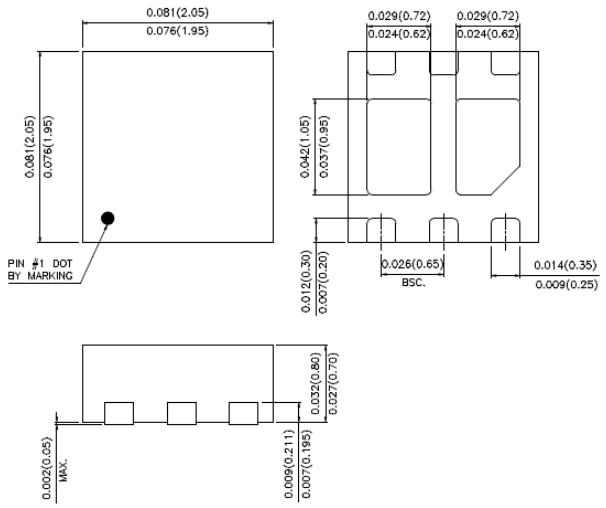
PJQ2815

PART NO PACKING CODE VERSION

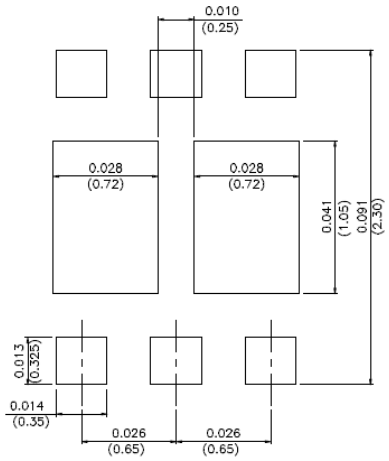
Part No Packing Code	Package Type	Packing type	Marking	Version
PJQ2815_R1_00001	DFN2020-6L	3K pcs / 7” reel	815	Halogen free

MOUNTING PAD LAYOUT

DFN2020-6L Dimension — Unit: mm



DFN2020-6L — Unit: mm



PJQ2815

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