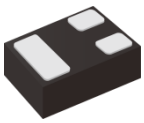
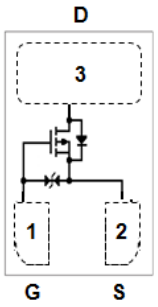
PJQ1901

20V P-Channel Enhancement Mode MOSFET

Voltage -20 V **Current** -0.75 A

DFN1006-3L





Features

- Low Voltage Drive (1.2V)
- Advanced Trench Process Technology
- ESD Protected
- Specially Designed for Switch Load, PWM Application, etc
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : DFN1006-3L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.00002 ounces, 0.0007 grams

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}	±10	
Continuous Drain Current(Note 4)		I_D	-0.75	A
Pulsed Drain Current(Note 1)		I_{DM}	-2	
Power Dissipation	T_A=25°C	P_D	900	mW
	Derate above 25°C		7.2	mW/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Typical Thermal Resistance - Junction to Ambient, t<10s(Note 5)		$R_{\theta JA}$	139	°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	-0.3	-0.59	-1.0	
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-400mA	-	0.85	1.2	Ω
		V_{GS}=-2.5V, I_D=-150mA	-	0.98	1.5	
		V_{GS}=-1.8V, I_D=-80mA	-	1.15	2.2	
		V_{GS}=-1.5V, I_D=-30mA	-	1.33	3.6	
		V_{GS}=-1.2V, I_D=-10mA	-	1.5	6.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-16V, V_{GS}=0V	-	-	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V	-	-	±10	
Dynamic(Note 6)						
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-200mA, V_{GS}=-4.5V(Note 2)	-	1.4	-	nC
Gate-Source Charge	Q_{gs}		-	0.19	-	
Gate-Drain Charge	Q_{gd}		-	0.2	-	
Input Capacitance	Ciss	V_{DS}=-10V, V_{GS}=0V, f=1.0MHZ	-	38	-	pF
Output Capacitance	Coss		-	15	-	
Reverse Transfer Capacitance	Crss		-	9	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=-10V, I_D=-150mA, V_{GS}=-4.5V, R_G=6Ω(Note 1,2)	-	7.2	-	ns
Turn-On Rise Time	t_r		-	21	-	
Turn-Off Delay Time	$td_{(off)}$		-	85	-	
Turn-Off Fall Time	t_f		-	116	-	
Drain-Source Diode						
Diode Forward Current	I_S	---	-	-	-200	mA
Diode Forward Voltage	V_{SD}	I_S=-200mA, V_{GS}=0V	-	-0.93	-1.3	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.$R_{\theta JA}$ 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

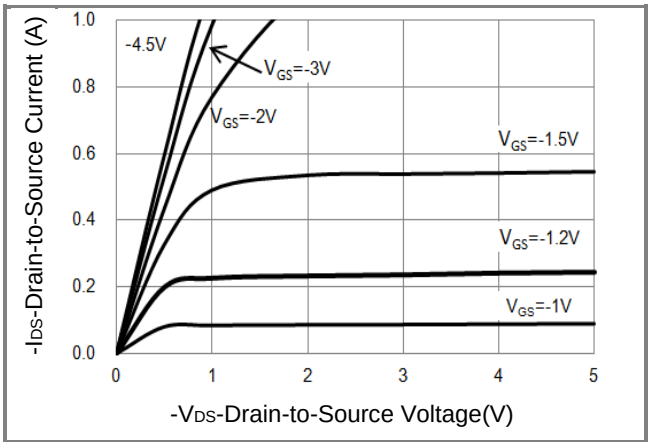

Fig.1 Output Characteristics

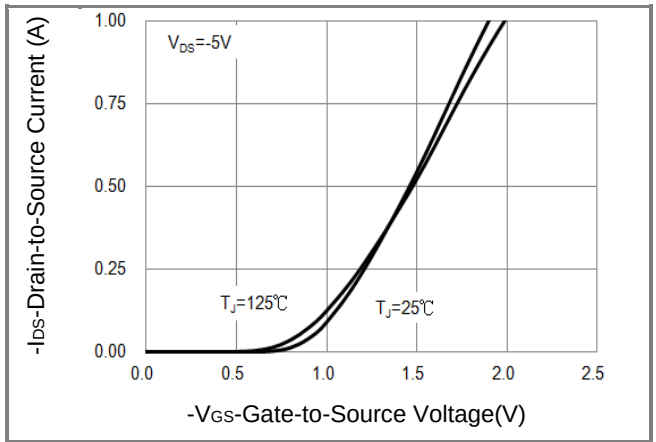

Fig.2 Transfer Characteristics

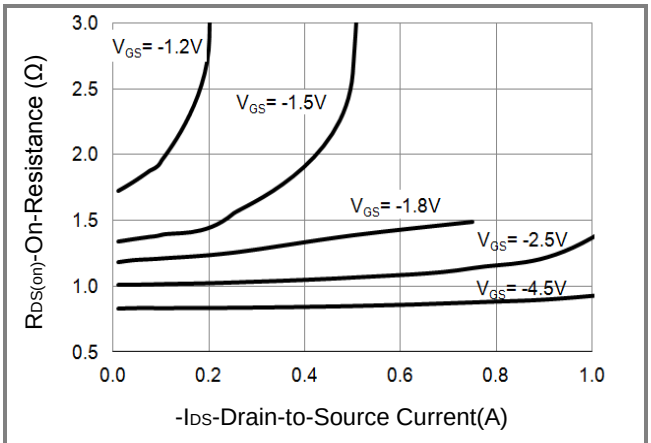

Fig.3 On-Resistance vs. Drain Current

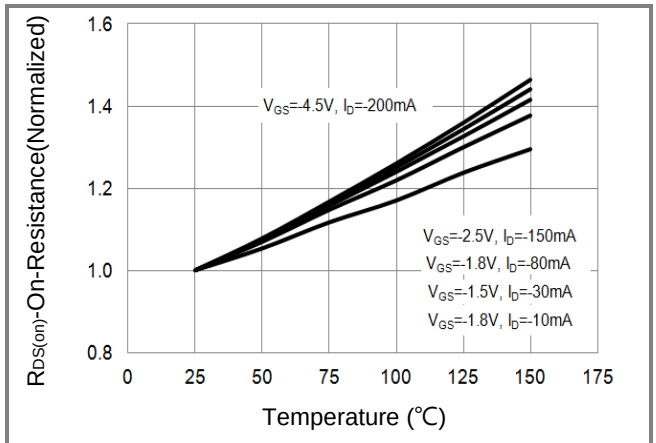

Fig.4 On-Resistance vs. Junction temperature

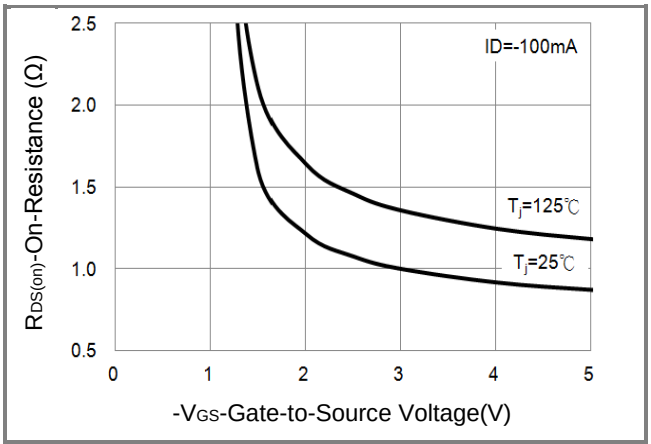

Fig.5 On-Resistance Variation with V_{GS}

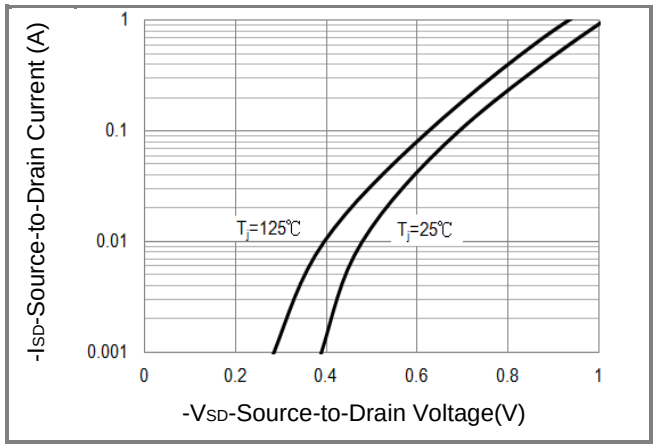

Fig.6 Source-Drain Diode Forward Voltage

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TYPICAL CHARACTERISTIC CURVES

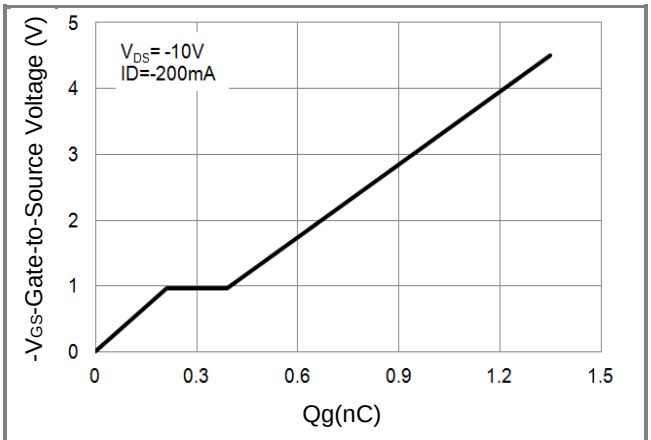

Fig.7 Gate-Charge Characteristics

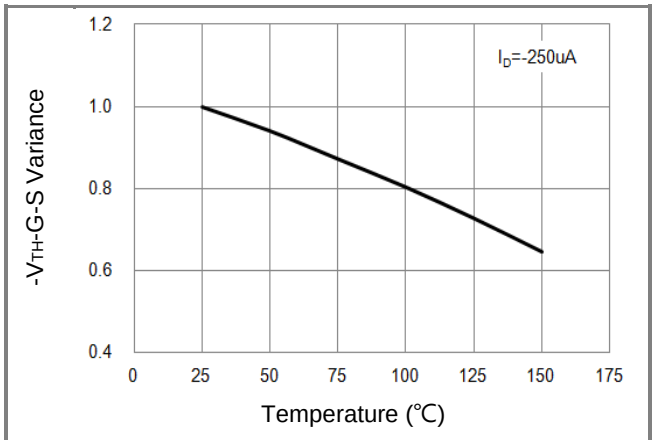

Fig.8 Breakdown Voltage Variation vs. Temperature

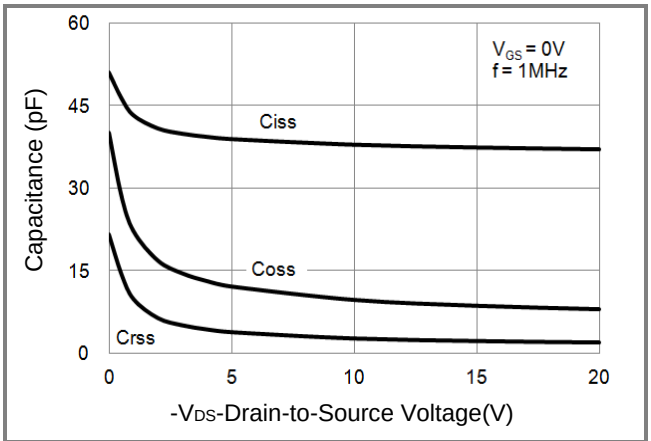

Fig.9 Capacitance vs. Drain-Source Voltage

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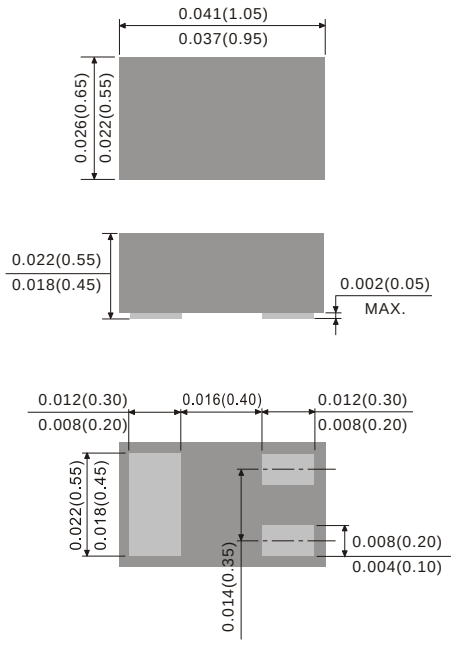
Part No. Packing Code Version

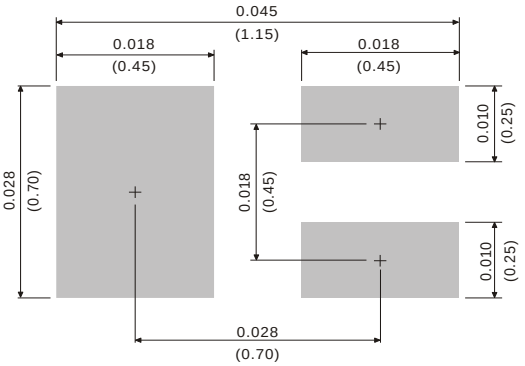
Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJQ1901_R1_00201	DFN1006-3L	10K pcs / 7” reel	1	Halogen free RoHS compliant

Packaging Information & Mounting Pad Layout

DFN1006-3L Dimension — Unit: inch(mm)



DFN1006-3L Pad Layout — Unit: inch(mm)



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