



# PJQ1917

## 20V P-Channel Enhancement Mode MOSFET

<b>Voltage</b>	<b>-20 V</b>	<b>Current</b>	<b>-700mA</b>
----------------	--------------	----------------	---------------

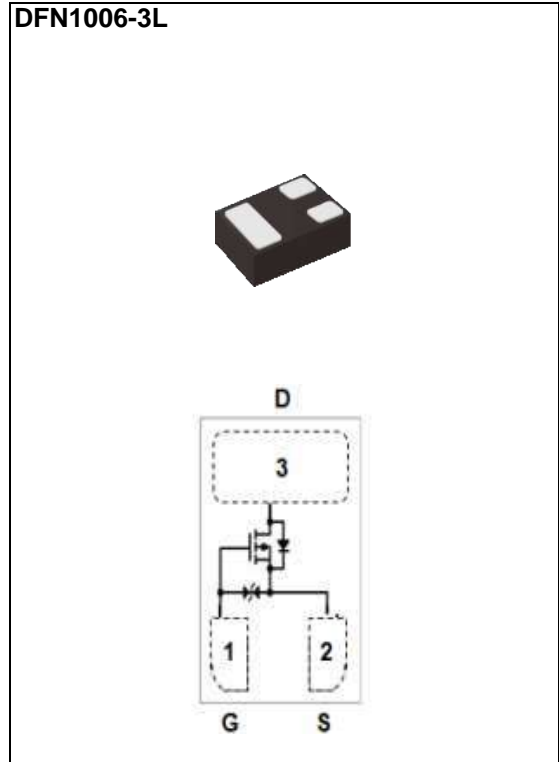
### Features

- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc.
- ESD Protected
- 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

DFN1006-3L



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V <sub>DS</sub>	-20	V
Gate-Source Voltage		V <sub>GS</sub>	±8	
Continuous Drain Current (Note 4)		I <sub>D</sub>	-700	mA
Pulsed Drain Current (Note 1)		I <sub>DM</sub>	-1400	
Power Dissipation	T <sub>a</sub> =25°C	P <sub>D</sub>	500	mW
	Derate above 25°C		4	mW/°C
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C
Typical Thermal Resistance		R <sub>θJA</sub>	250	°C/W
- Junction to Ambient (Note 3,4)				

- Limited only By Maximum Junction Temperature



# PJQ1917

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>Static</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-20	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-0.3	-0.6	-1	
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-300mA	-	470	600	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-200mA	-	630	850	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-100mA	-	810	1200	
		V <sub>GS</sub> =-1.5V, I <sub>D</sub> =-100mA	-	1020	1600	
		V <sub>GS</sub> =-1.2V, I <sub>D</sub> =-100mA	-	1670	3000	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V	-	-	-1	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V	-	-	±10	
<b>Dynamic</b> (Note 5)						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-200mA, V <sub>GS</sub> =-4.5V (Note 2)	-	1.1	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	0.2	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	0.1	-	
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1MHZ	-	51	-	pF
Output Capacitance	C <sub>oss</sub>		-	15	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	2.2	-	
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-10V, I <sub>D</sub> =-200mA, V <sub>GS</sub> =-4.5V, R <sub>G</sub> =6Ω (Note 2)	-	4.3	-	ns
Turn-On Rise Time	t <sub>r</sub>		-	20	-	
Turn-Off Delay Time	t <sub>d(off)</sub>		-	33	-	
Turn-Off Fall Time	t <sub>f</sub>		-	25	-	
<b>Drain-Source Diode</b>						
Maximum Continuous Drain-Source Diode Forward Current	I <sub>S</sub>	---	-	-	-300	mA
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-300mA, V <sub>GS</sub> =0V	-	-0.85	-1	V

**NOTES:**

1. Pulse width ≤ 300us, Duty cycle ≤ 2%
2. Essentially independent of operating temperature typical characteristics.
3. R<sub>θJA</sub> 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.
4. The maximum current rating is package limited.
5. Guaranteed by design, not subject to production testing.



# PJQ1917

## TYPICAL CHARACTERISTIC CURVES

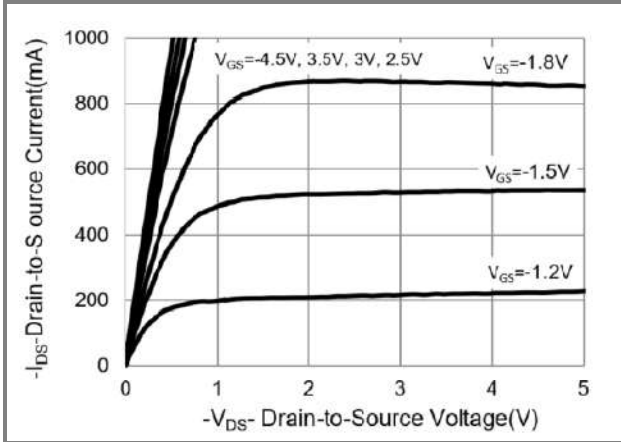


Fig.1 On-Region Characteristics

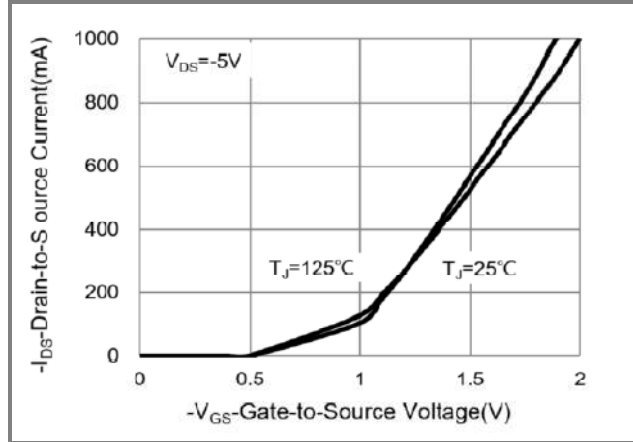


Fig.2 Transfer Characteristics

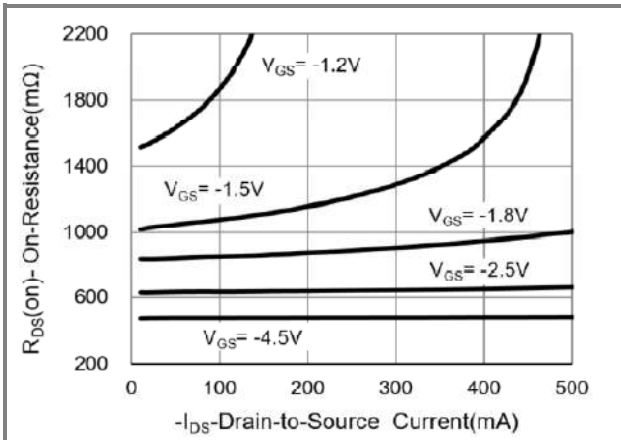


Fig.3 On-Resistance vs. Drain Current

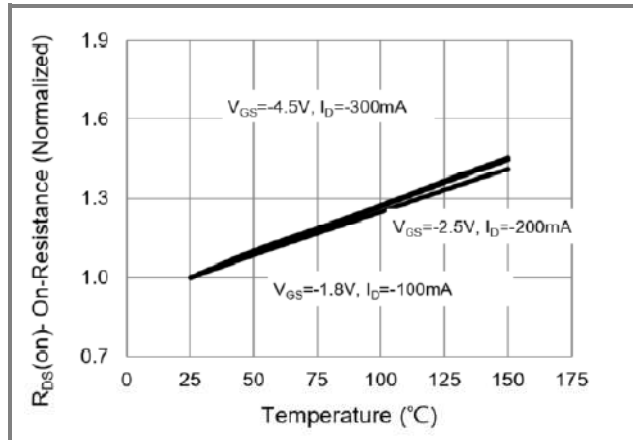


Fig.4 On-Resistance vs. Junction temperature

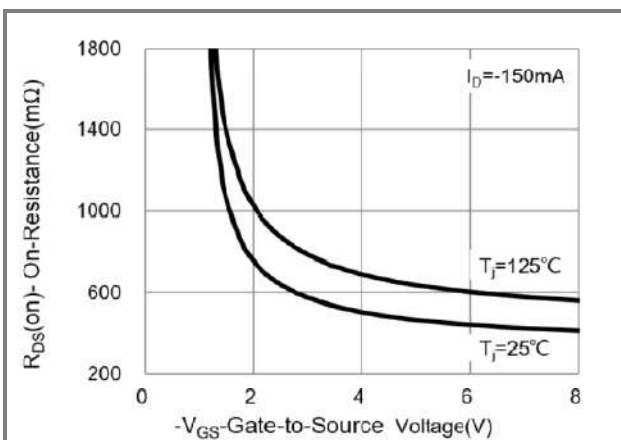


Fig.5 On-Resistance Variation with  $V_{G_S}$

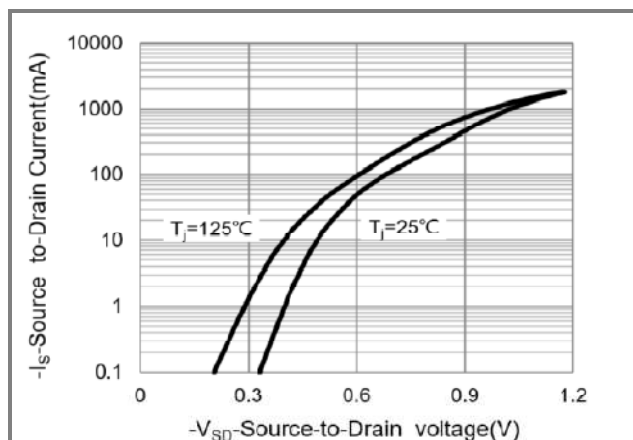


Fig.6 Body Diode Characteristics



# PJQ1917

## TYPICAL CHARACTERISTIC CURVES

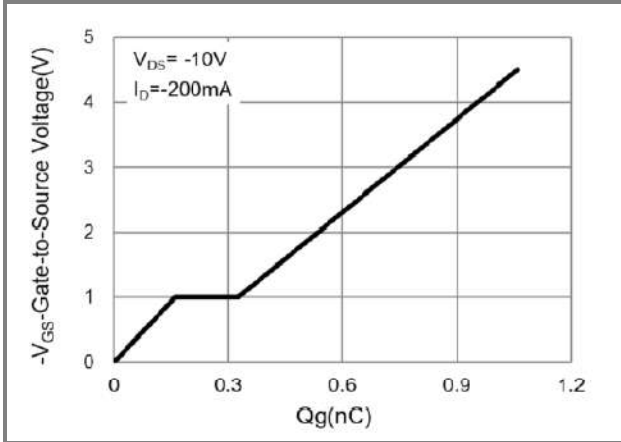


Fig.7 Gate-Charge Characteristics

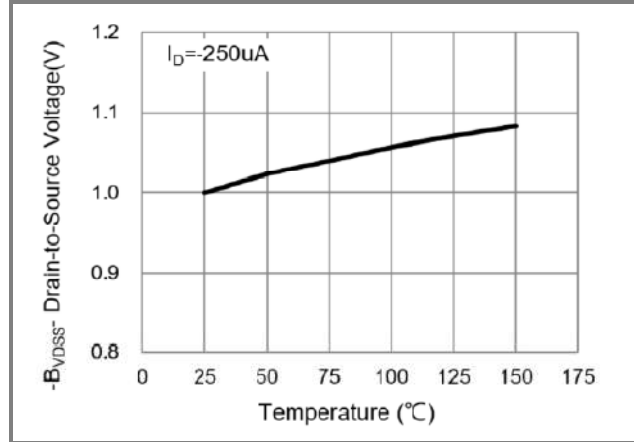


Fig.8 Breakdown Voltage Variation vs. Temperature

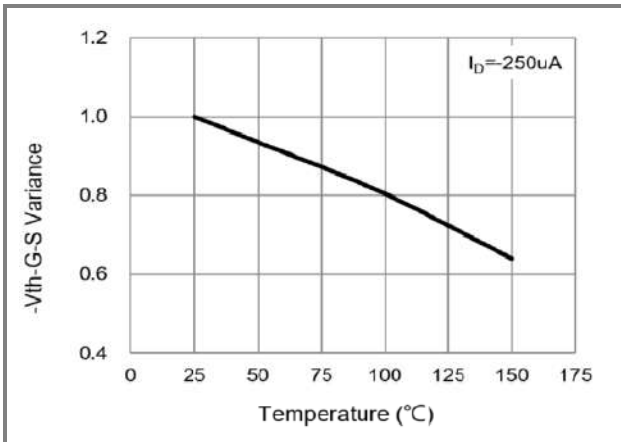


Fig.9 Threshold Voltage Variation with Temperature

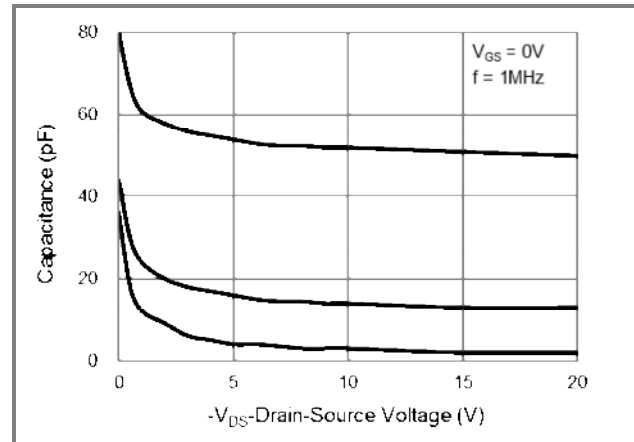


Fig.10 Capacitance vs. Drain-Source Voltage



# PJQ1917

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PJQ1917_R1_00001	DFN1006-3L	10K / 7" Reel	H	Halogen free

## Packaging Information & Mounting Pad Layout

