PANJIT SEMICONDUCTOR

PJQ4526P

30V N-Channel Enhancement Mode MOSFET

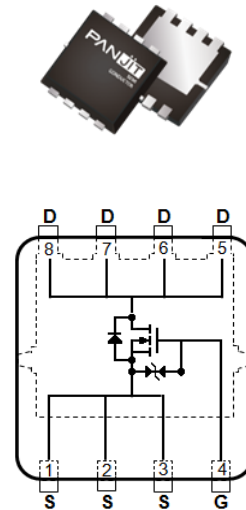| Voltage | 30 V | Current | 62 A |

Features

- $R_{DS(ON)}$, V_{GS}@10V, I_D@10A<5.5mΩ
- $R_{DS(ON)}$, V_{GS}@4.5V, I_D@6A<8.3mΩ
- Excellent FOM
- Logic Level Drive
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : DFN3333-8L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.03 grams

DFN3333-8L

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 3)	T_C=25°C	I_D	62	A
	T_C=100°C		39	
Pulsed Drain Current(Note 1)	T_C=25°C	I_{DM}	248	
Power Dissipation	T_C=25°C	P_D	31.3	W
	T_C=100°C		12.5	
Continuous Drain Current(Note 4)	T_A=25°C	I_D	16	A
	T_A=70°C		12.7	
Power Dissipation	T_A=25°C	P_D	2.1	W
	T_A=70°C		1.3	
Single Pulse Avalanche Energy(Note 5)		E_{AS}	28	mJ
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	^{o}C
Thermal Resistance(Note 4)	Junction to Case	$R_{\theta JC}$	4	^{o}C/W
	Junction to Ambient	$R_{\theta JA}$	60	

PJQ4526P

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	1.3	1.7	2.5	
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=10A	-	4.6	5.5	mΩ
		V_{GS}=4.5V, I_D=6A	-	6.4	8.3	
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	-	-	±10	uA
		V_{GS}=±10V, V_{DS}=0V	-	-	±1	
Dynamic(Note 6)						
Total Gate Charge	Q_g	V_{DS}=24V, I_D=10A, V_{GS}=10V(Note 2,3)	-	15	-	nC
Gate-Source Charge	Q_{gs}		-	3.4	-	
Gate-Drain Charge	Q_{gd}		-	2.1	-	
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=0V, f=1MHz	-	923	-	pF
Output Capacitance	Coss		-	442	-	
Reverse Transfer Capacitance	Crss		-	36	-	
Gate resistance	R_g	f=1MHz	-	1.6	-	Ω
Turn-On Delay Time	td(on)	V_{DS}=24V, I_D=10A, V_{GS}=10V, R_G=3Ω (Note 2,3)	-	13	-	ns
Turn-On Rise Time	t_r		-	8	-	
Turn-Off Delay Time	td(off)		-	24	-	
Turn-Off Fall Time	t_f		-	23	-	
Drain-Source Diode						
Diode Forward Current	I_S	T_C=25°C	-	-	62	A
Pulsed Diode Forward Current	I_{SM}		-	-	248	
Diode Forward Voltage	V_{SD}	I_S=20A, V_{GS}=0V	-	0.8	1.1	V
Reverse Recovery Time	Trr	V_{GS}=0V, I_S=20A	-	27	-	ns
Reverse Recovery Charge	Qrr	dI_S/dt=100A/us(Note 2,3)	-	13	-	nC

NOTES :

1. Pulse width≤100us, Duty cycle≤2%.

2. Essentially independent of operating temperature typical characteristics.

3. Chip capability with an $R_{θJC}$=4°C/W.

4. $R_{θJA}$ 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 inch^2 with 2oz.square pad of copper.

5. 6. The test condition is L=0.5mH, I_{AS}=11A, V_{DD}=30V, V_{GS}=10V, Starting TJ=25°C. the chip is about to carry I_{AS}≈21A.

6. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTIC CURVES

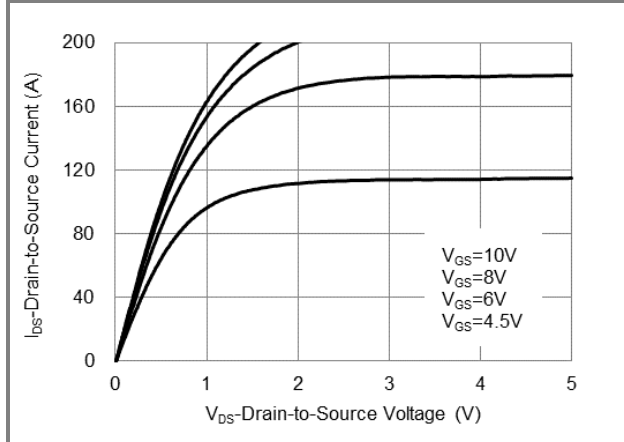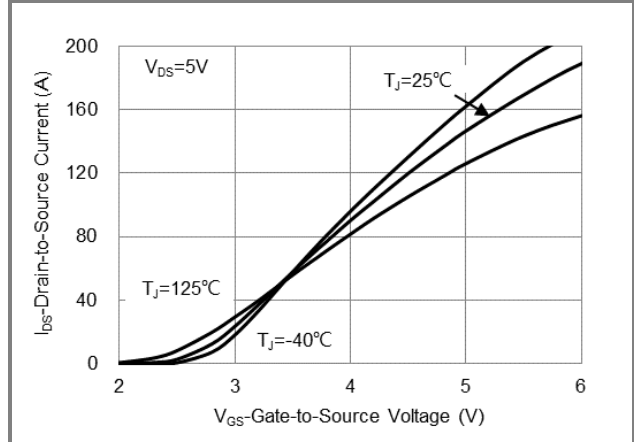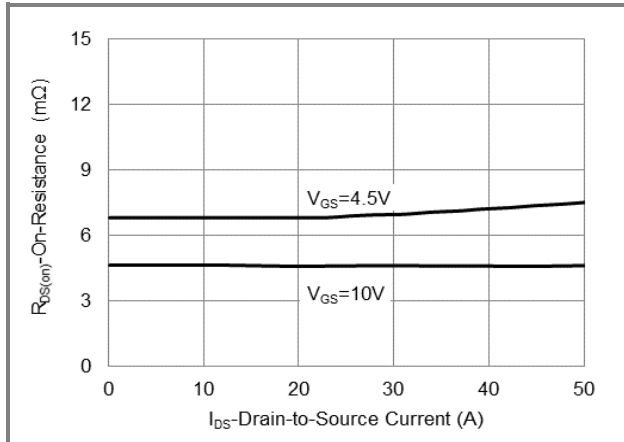**Fig.1 On-Region Characteristics**

Fig.2 Transfer Characteristics
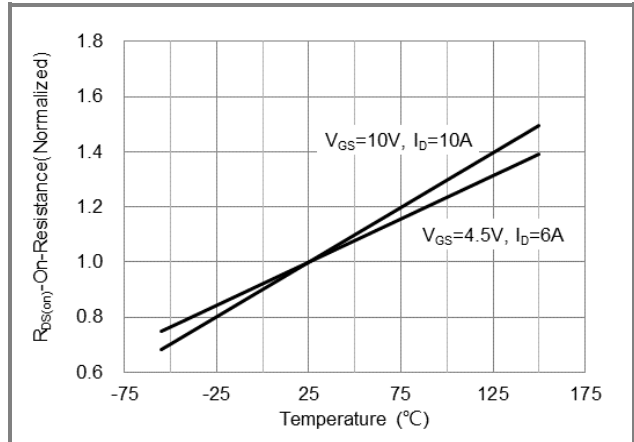
Fig.3 On-Resistance vs. Drain Current

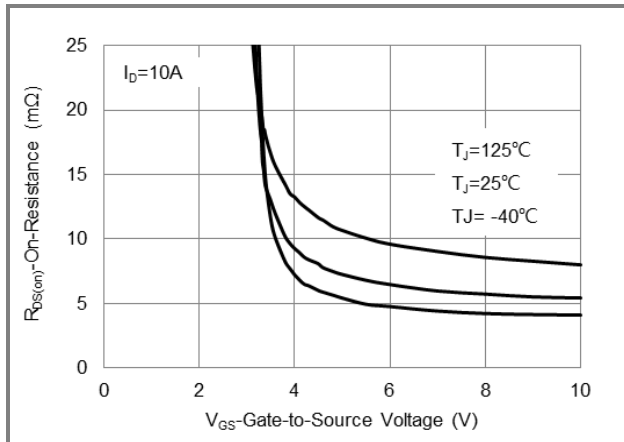**Fig.4 On-Resistance vs. Junction temperature**

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

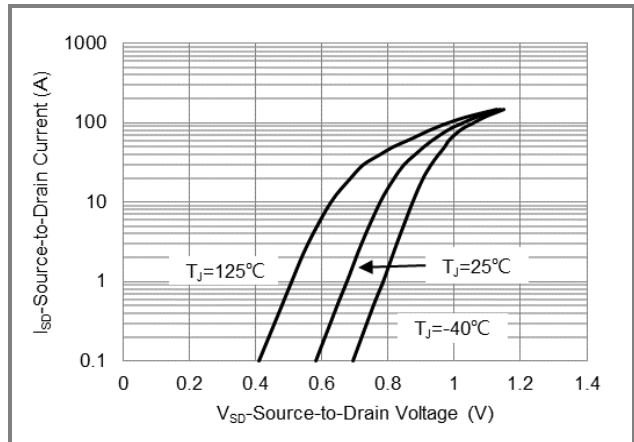**Fig.6 Source-Drain Diode Forward Voltage**
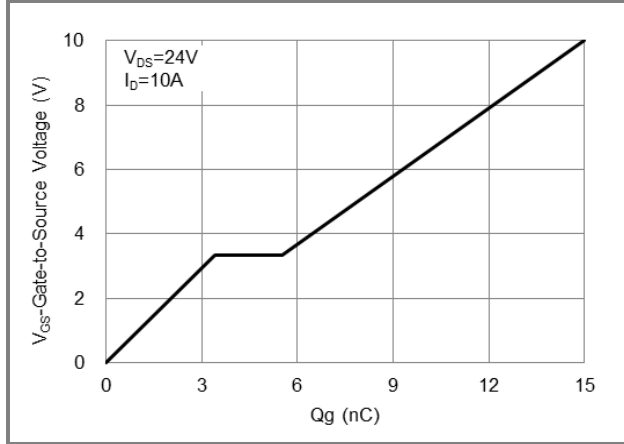
TYPICAL CHARACTERISTIC CURVES
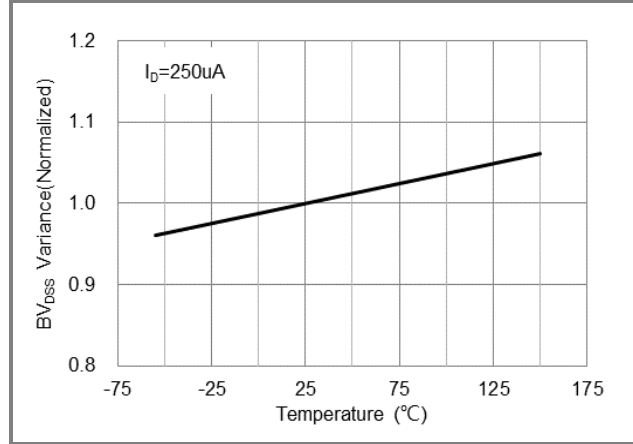

Fig.7 Gate-Charge Characteristics

Fig.8 Breakdown Voltage Variation vs. Temperature
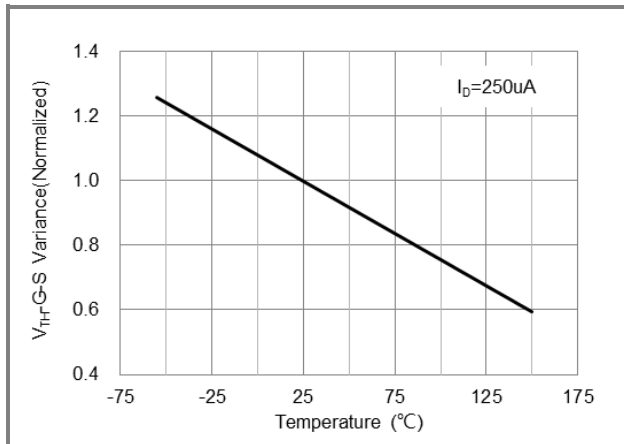

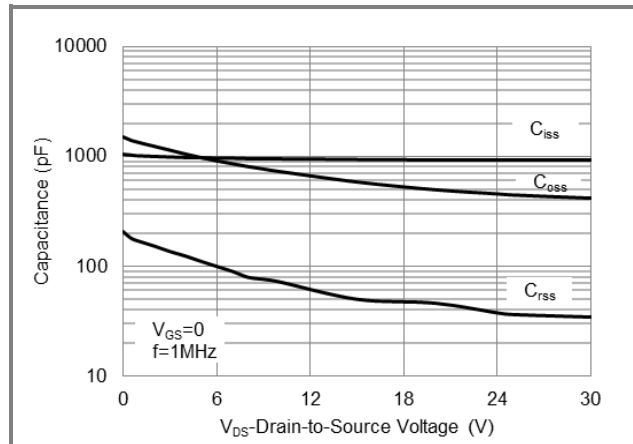**Fig.9 Threshold Voltage Variation with Temperature**
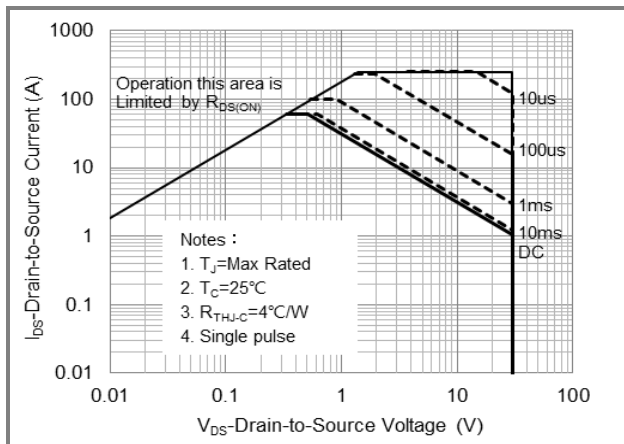

Fig.10 Capacitance vs. Drain-Source Voltage
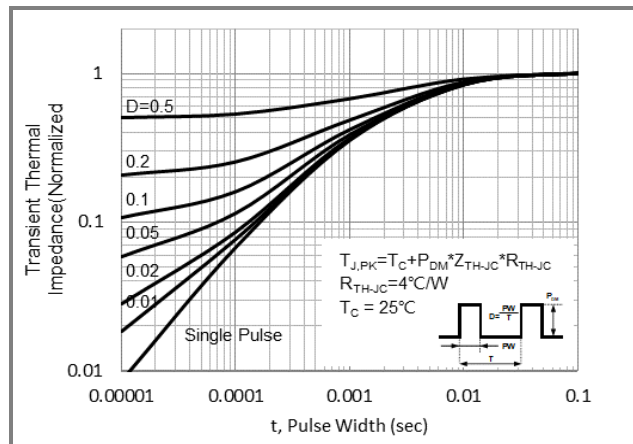

Fig.11 Maximum Safe Operating Area

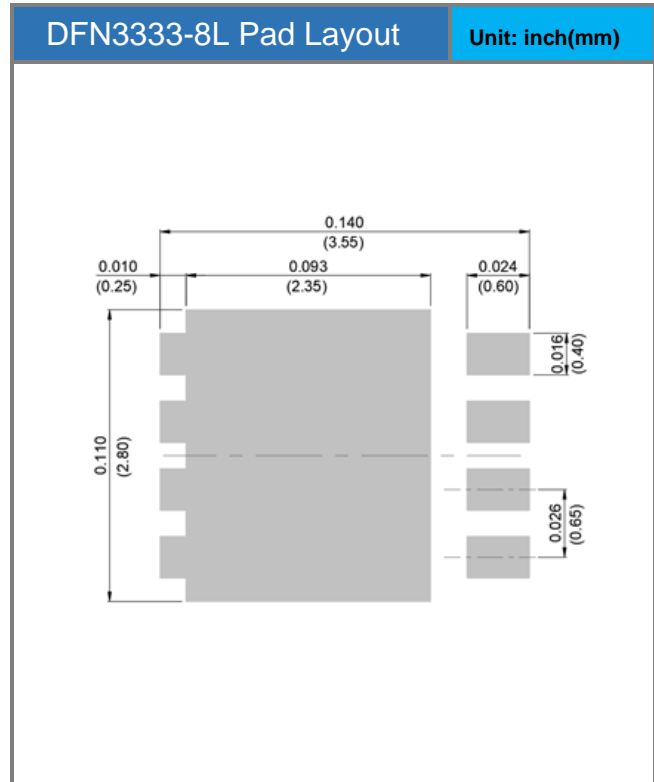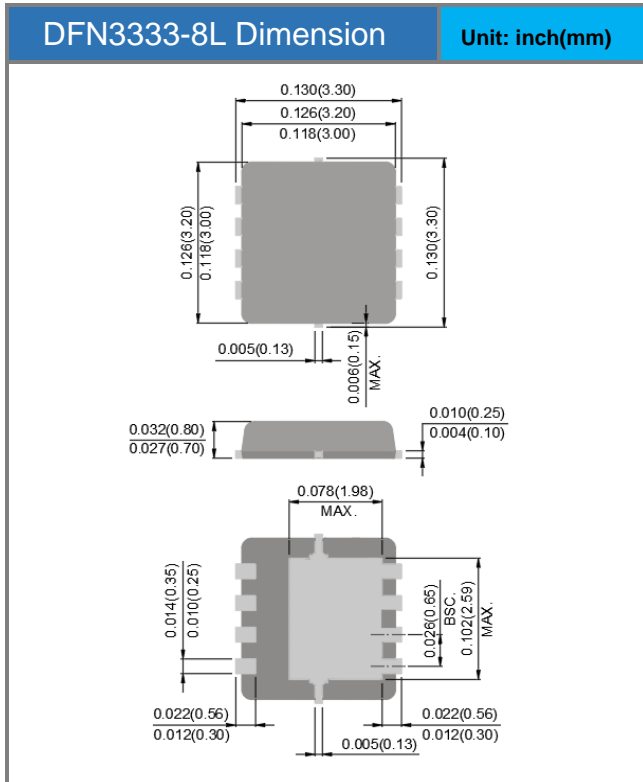**Fig.12 Normalized Transient Thermal Impedance**

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PJQ4526P	DFN3333-8L	5K pcs / 13" reel	4526

Packaging Information & Mounting Pad Layout

DFN3333-8L Dimension — Unit: inch(mm)

DFN3333-8L Pad Layout — Unit: inch(mm)

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..

- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.

- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.

- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.

- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.