PJX8828

30V N-Channel Enhancement Mode MOSFET

Voltage	30 V	Current	300 mA

Features

- Advanced Trench Process Technology
- ESD Protected
- Specially Designed for Relay driver, Speed line drive, etc.
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOT-563 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0026 grams

SOT-563 **Unit : inch(mm)**
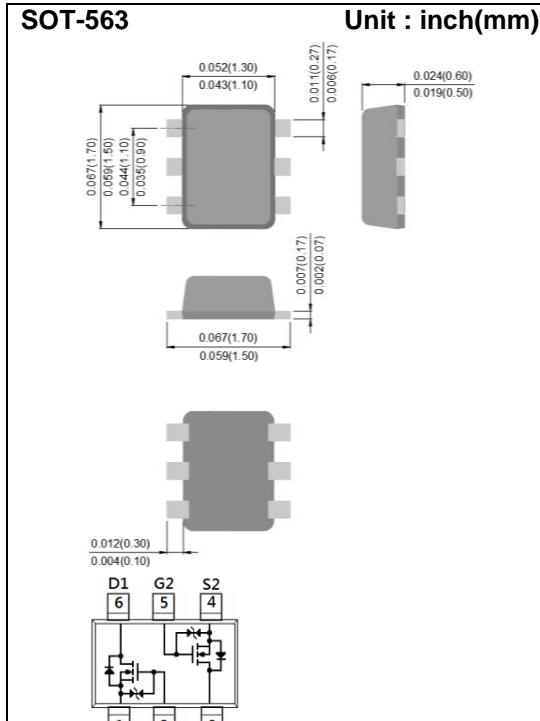
Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	$\pm$10	V
Continuous Drain Current		I_D	300	mA
Pulsed Drain Current		I_{DM}	600	mA
Power Dissipation	T_A=25°C	P_D	300	mW
	Derate above 25°C		2.4	mW/^{o}C
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	^{o}C
Typical Thermal Resistance - Junction to Ambient[Note 3]		$R_{\theta JA}$	417	^{o}C/W

PJX8828

Electrical Characteristics ($T_A=25^o$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	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250uA$	0.4	0.75	1.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=300mA$	-	0.7	1.2	Ω
		$V_{GS}=2.5V, I_D=200mA$	-	0.8	1.6	
		$V_{GS}=1.8V, I_D=100mA$	-	0.9	2.0	
		$V_{GS}=1.5V, I_D=50mA$	-	1.1	3.0	
		$V_{GS}=1.2V, I_D=20mA$	-	1.5	4.0	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm8V, V_{DS}=0V$	-	-	±10	uA
Dynamic[4]						
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=300mA,$ $V_{GS}=4.5V$	-	0.9	-	nC
Gate-Source Charge	Q_{gs}		-	0.3	-	
Gate-Drain Charge	Q_{gd}		-	0.2	-	
Input Capacitance	Ciss	$V_{DS}=10V, V_{GS}=0V,$ $f=1.0MHZ$	-	45	-	pF
Output Capacitance	Coss		-	14	-	
Reverse Transfer Capacitance	Crss		-	0.8	-	
Turn-On Delay Time	$td_{(on)}$	$V_{DD}=10V, I_D=300mA,$ $V_{GS}=4V,$ $R_G=10\Omega$[1,2]	-	8.3	-	ns
Turn-On Rise Time	tr		-	5.7	-	
Turn-Off Delay Time	$td_{(off)}$		-	35	-	
Turn-Off Fall Time	tf		-	12	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	300	mA
Diode Forward Voltage	V_{SD}	$I_S=300mA, V_{GS}=0V$	-	0.9	1.3	V

NOTES :

1. Pulse width$\leq$300us, Duty cycle$\leq$2%
2. Essentially independent of operating temperature typical characteristics.
3. $R_{\Theta JA}$ 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 square pad of copper
4. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTIC CURVES
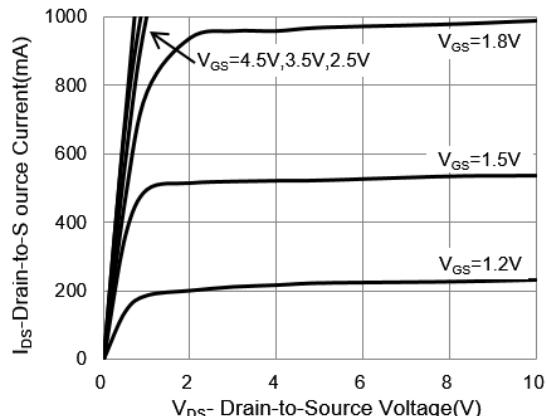
Fig.1 On-Region Characteristics
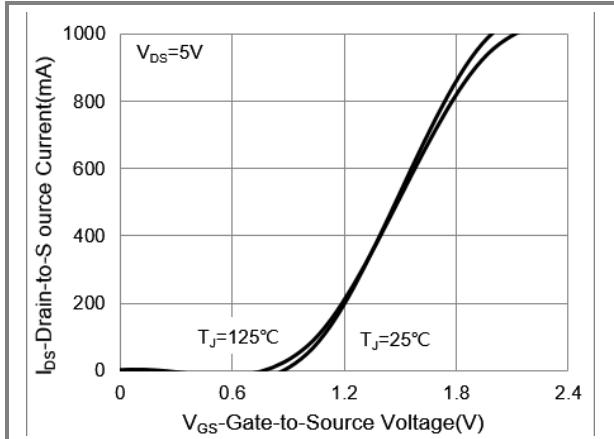
Fig.2 Transfer Characteristics
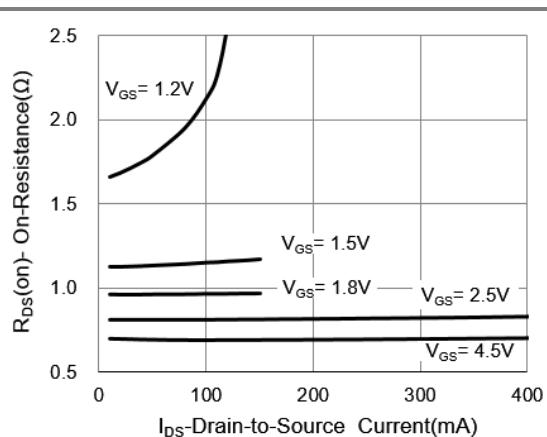
Fig.3 On-Resistance vs. Drain Current
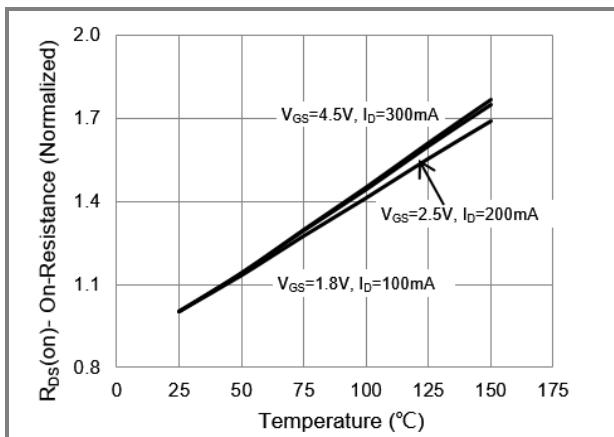
Fig.4 On-Resistance vs. Junction temperature
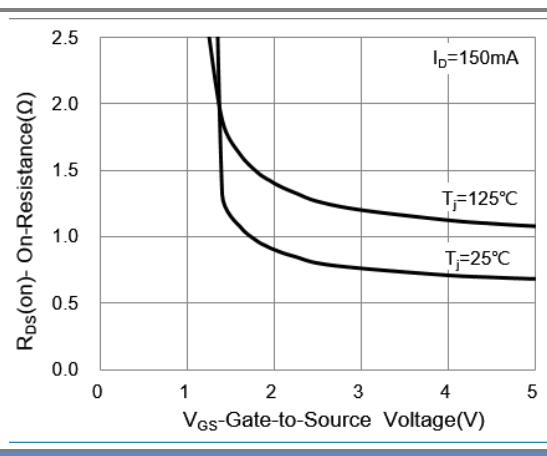
Fig.5 On-Resistance Variation with VGS.
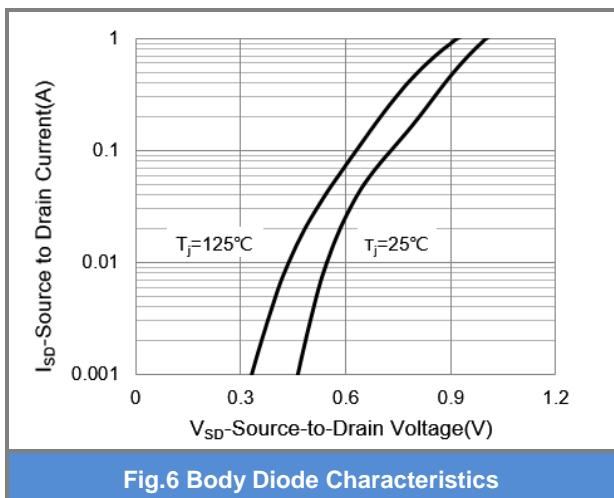
Fig.6 Body Diode Characteristics

TYPICAL CHARACTERISTIC CURVES

V_{DS}= 10V
I_D=300mA
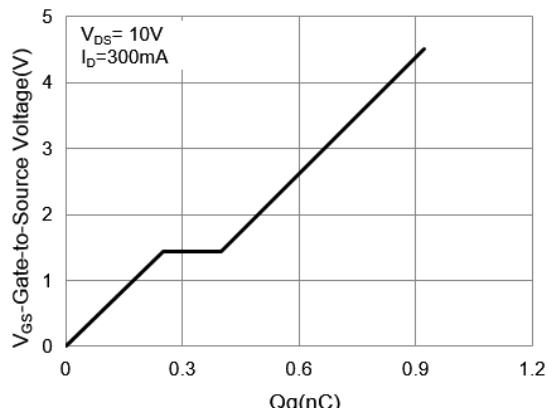
Fig.7 Gate-Charge Characteristics

I_D=250uA
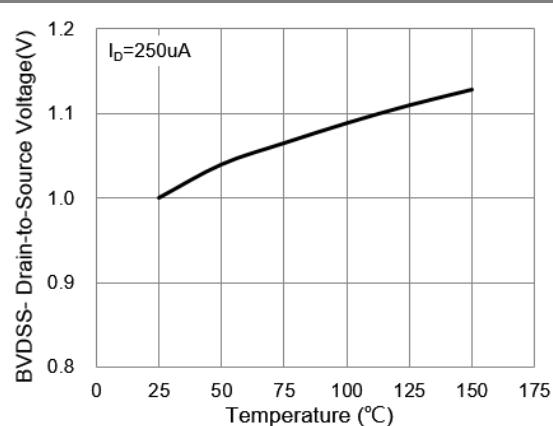
Fig.8 Breakdown Voltage Variation vs. Temperature

I_D=250uA
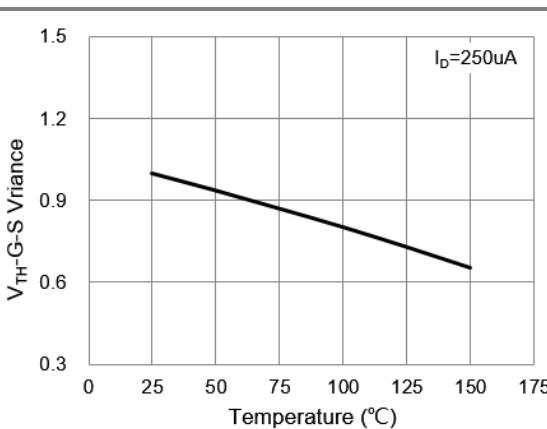
Fig.9 Threshold Voltage Variation with Temperature.

V_{GS} = 0V
f = 1MHz

Ciss

Coss

Crss
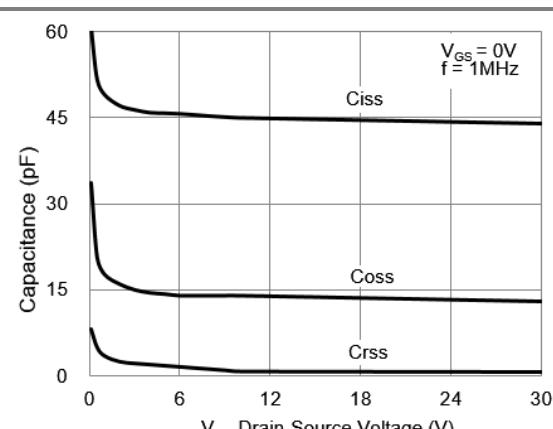
Fig.10 Capacitance vs. Drain-Source Voltage.

PART NO. PACKING CODE VERSION

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJX8828_R1_00001	SOT-563	4K pcs / 7" reel	X28	Halogen free RoHS compliant
PJX8828_R2_00001	SOT-563	10K pcs / 13" reel	X28	Halogen free RoHS compliant
PJX8828_R1_00002	SOT-563	8K pcs / 7" reel	X28	Halogen free RoHS compliant
PJX8828_R2_00002	SOT-563	20K pcs / 13" reel	X28	Halogen free RoHS compliant

MOUNTING PAD LAYOUT

SOT-563   Unit : inch(mm)

0.013
(0.34)

0.022
(0.55)

0.079
(2.00)

0.057
(1.45)

0.020
(0.50)

0.020
(0.50)
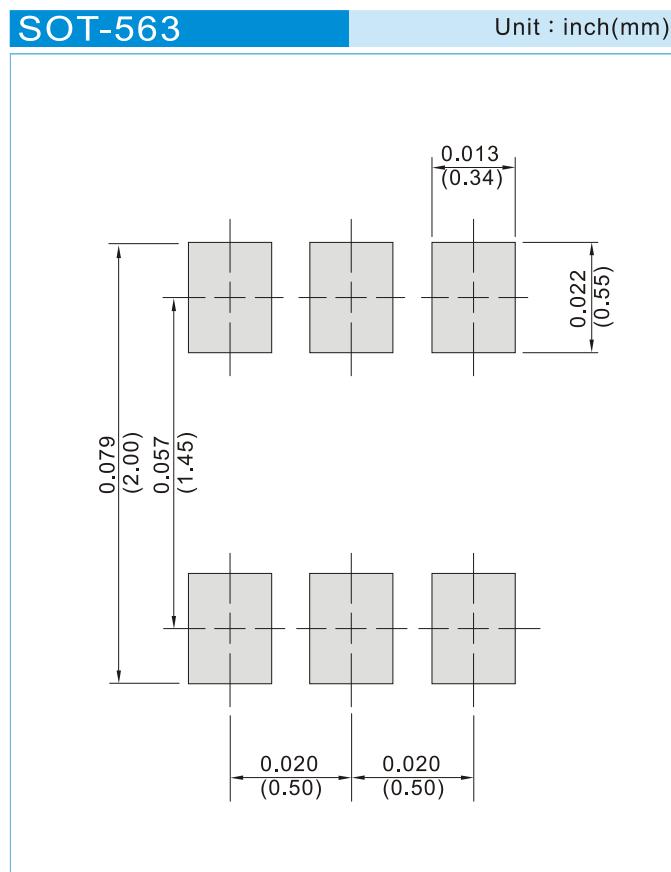
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