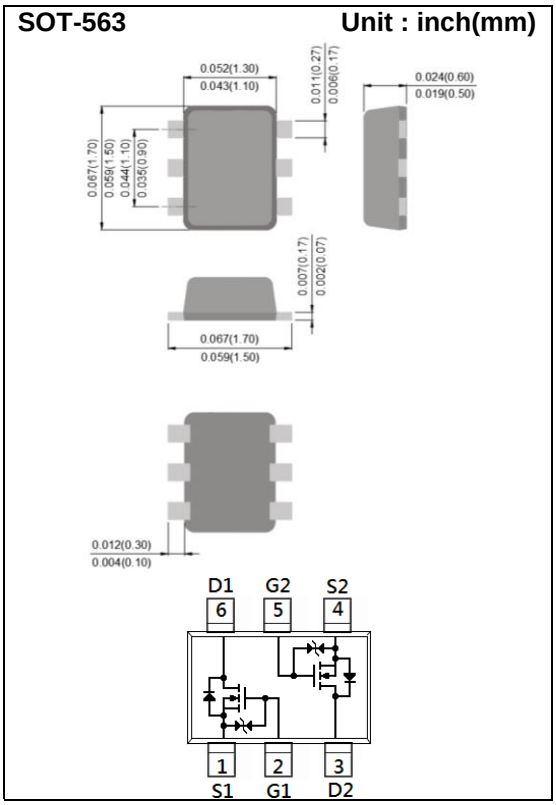
PJX8808

20V N-Channel Enhancement Mode MOSFET

Voltage	20 V	Current	500mA



Features

- Low Voltage Drive (1.2V).
- 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 : SOT-563 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0026 grams
- Marking : X08

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	V
Continuous Drain Current		I_D	500	mA
Pulsed Drain Current		I_{DM}	1000	mA
Power Dissipation	T_A=25°C	PD	300	mW
	Derate above 25°C		2.8	mW/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Typical Thermal Resistance - Junction to Ambient(Note 3)		$R_{\theta JA}$	417	°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	0.64	0.9	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=4.5V, I_D=500mA	-	310	400	mΩ
		V_{GS}=2.5V, I_D=200mA	-	360	650	
		V_{GS}=1.8V, I_D=100mA	-	430	800	
		V_{GS}=1.5V, I_D=50mA	-	510	1200	
		V_{GS}=1.2V, I_D=20mA	-	710	3000	
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	-	±0.5	±10	uA
Dynamic(Note 5)						
Total Gate Charge	Q_g	V_{DS}=10V, I_D=500mA, V_{GS}=4.5V(Note 1,2)	-	1.4	-	nC
Gate-Source Charge	Q_{gs}		-	0.22	-	
Gate-Drain Charge	Q_{gd}		-	0.21	-	
Input Capacitance	Ciss	V_{DS}=10V, V_{GS}=0V, f=1.0MHZ	-	67	-	pF
Output Capacitance	Coss		-	19	-	
Reverse Transfer Capacitance	Crss		-	6	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=10V, I_D=150mA, V_{GS}=4.0V, R_G=10Ω(Note 1,2)	-	2.8	-	ns
Turn-On Rise Time	tr		-	20	-	
Turn-Off Delay Time	$td_{(off)}$		-	23	-	
Turn-Off Fall Time	tf		-	23	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	500	mA
Diode Forward Voltage	V_{SD}	I_S=500mA, V_{GS}=0V	-	0.87	1.3	V

NOTES :

1. Pulse width≤300us, Duty cycle≤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 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.

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TYPICAL CHARACTERISTIC CURVES

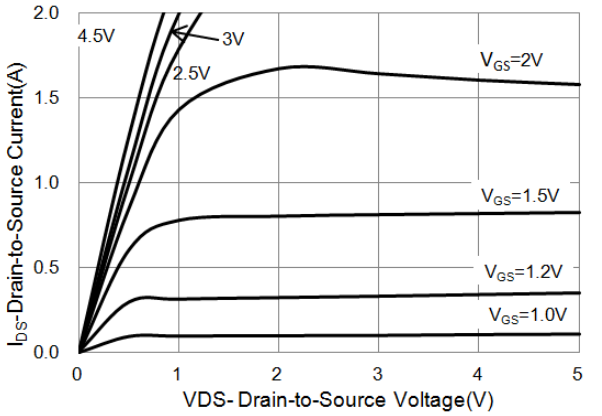


Fig.1 On-Region Characteristics

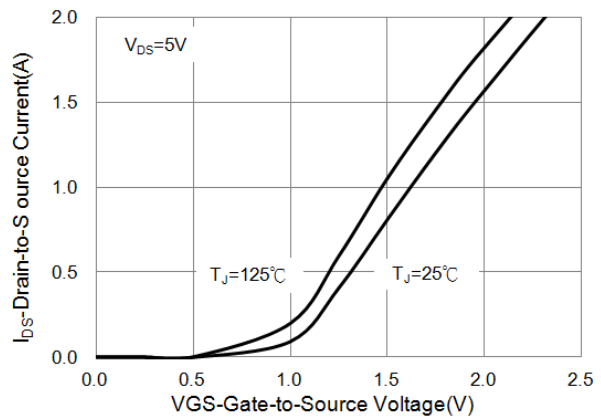


Fig.2 Transfer Characteristics

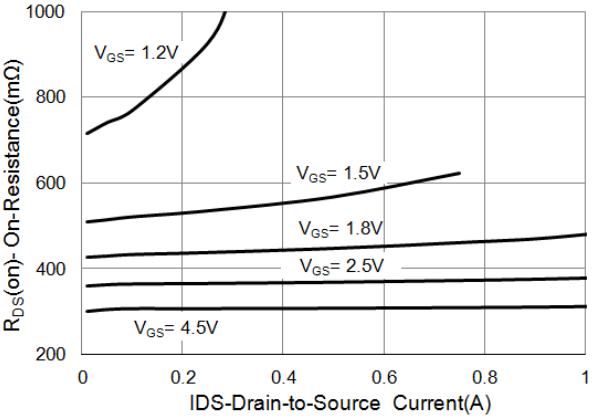


Fig.3 On-Resistance vs. Drain Current

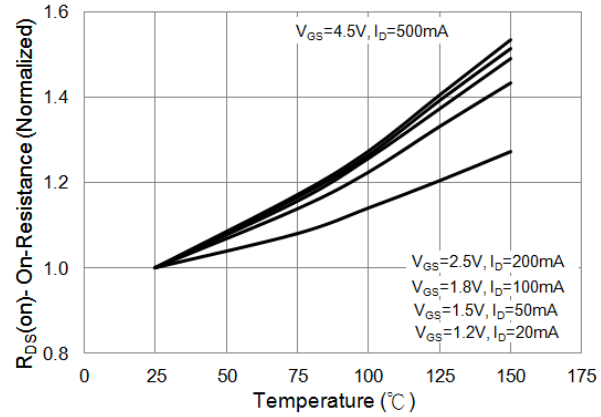


Fig.4 On-Resistance vs. Junction temperature

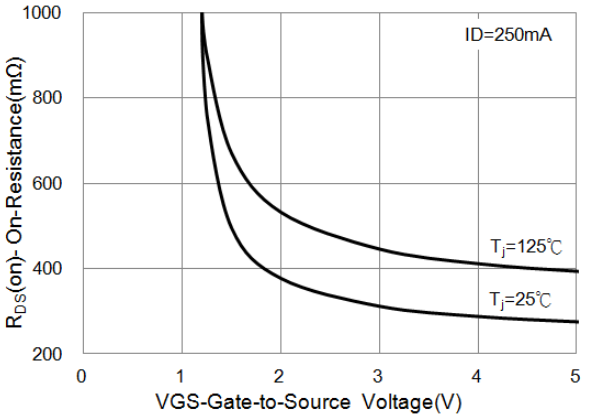


Fig.5 On-Resistance Variation with VGS.

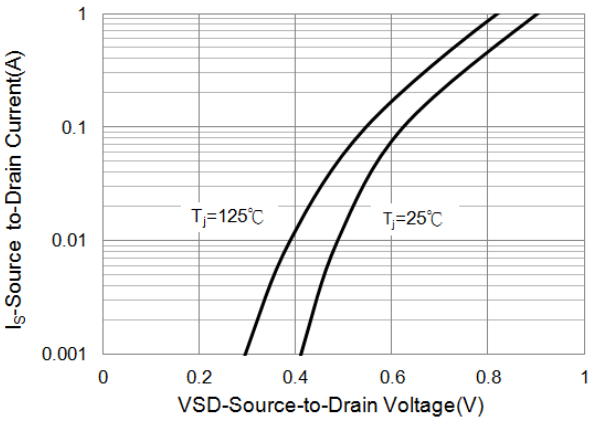


Fig.6 Body Diode Characteristics

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TYPICAL CHARACTERISTIC CURVES

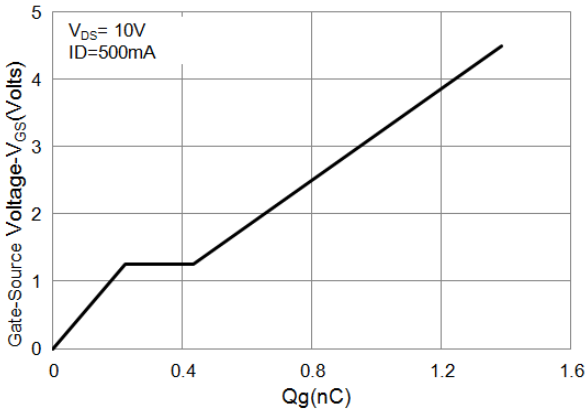


Fig.7 Gate-Charge Characteristics

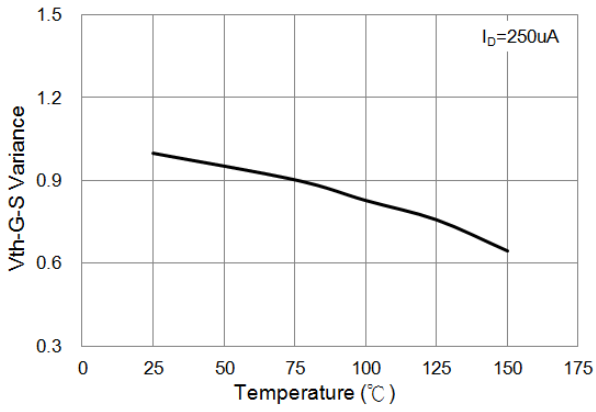


Fig.8 Breakdown Voltage Variation vs. Temperature

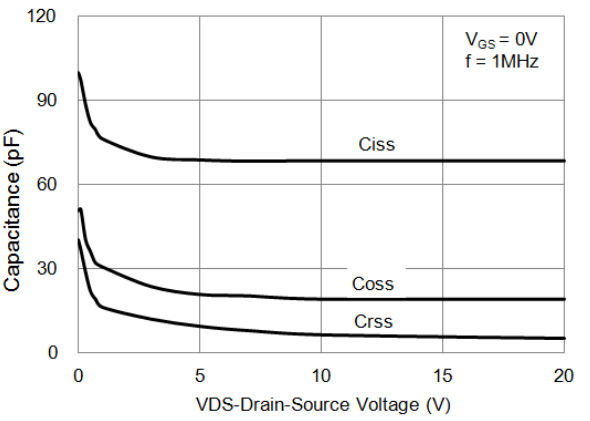


Fig.9 Threshold Voltage Variation with Temperature

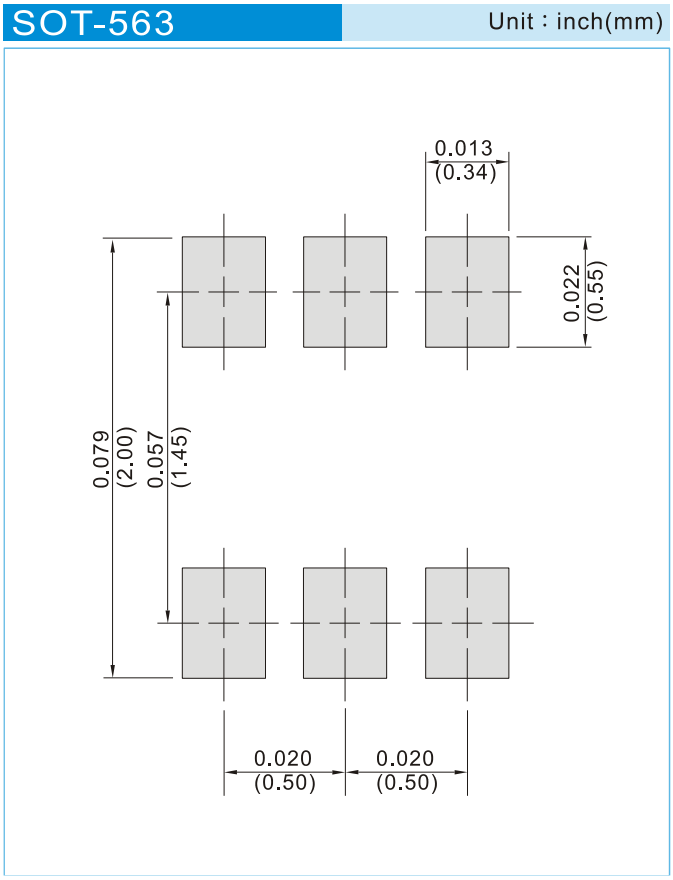
PJX8808

Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJX8808_R1_00001	SOT-563	4K pcs / 7” reel	X08	Halogen free RoHS compliant
PJX8808_R2_00001	SOT-563	10K pcs / 13” reel	X08	Halogen free RoHS compliant

Mounting Pad Layout

SOT-563 Unit : inch(mm)



PJX8808

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