

# PJC7002H

## 60V N-Channel Enhancement Mode MOSFET

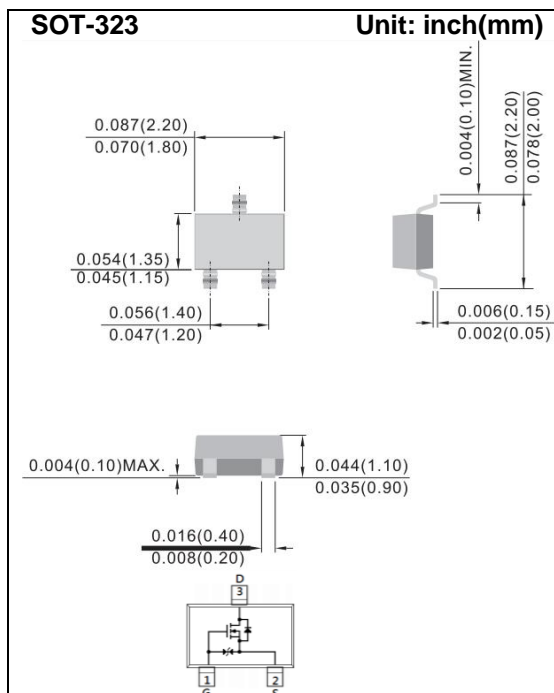
<b>Voltage</b>	<b>60 V</b>	<b>Current</b>	<b>250mA</b>
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### Features

- RDS(ON) , VGS@10V, ID@300mA<5Ω
- RDS(ON) , VGS@5V, ID@50mA<7.5Ω
- Advanced Trench Process Technology
- ESD Protected
- Specially Designed for Relay driver, Speed line drive, etc.
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std. (Halogen Free)

### Mechanical Data

- Case: SOT-323 Package
- Terminals: Solderable per MIL-STD-750, Method 2026



## 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>	60	V
Gate-Source Voltage		V <sub>GS</sub>	±20	V
Continuous Drain Current		I <sub>D</sub>	250	mA
Pulsed Drain Current		I <sub>DM</sub>	1000	mA
Power Dissipation	T <sub>A</sub> =25°C	P <sub>D</sub>	350	mW
	Derate above 25°C		2.8	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>	357	°C/W
- Junction to Ambient <sup>(Note 3)</sup>				



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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	60	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	2.0	2.49	3.0	V
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =300mA	-	2.0	5	Ω
		V <sub>GS</sub> =5V, I <sub>D</sub> =50mA	-	3.6	7.5	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V	-	-	1	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	±0.5	uA
Dynamic (Note 4)						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =300mA, V <sub>GS</sub> =4.5V (Note 1,2)	-	1.3	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	0.6	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	0.2	-	
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1.0MHZ	-	22	-	pF
Output Capacitance	C <sub>oss</sub>		-	12	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	1.7	-	
Turn-On Delay Time	td <sub>(on)</sub>	V <sub>DD</sub> =10V, I <sub>D</sub> =300mA, V <sub>GS</sub> =10V, R <sub>G</sub> =10Ω (Note 1,2)	-	2.9	-	ns
Turn-On Rise Time	tr		-	1.8	-	
Turn-Off Delay Time	td <sub>(off)</sub>		-	5.6	-	
Turn-Off Fall Time	tf		-	1.9	-	
Drain-Source Diode						
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	-	0.92	1.5	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 square pad of copper
4. Guaranteed by design, not subject to production testing

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## TYPICAL CHARACTERISTIC CURVES

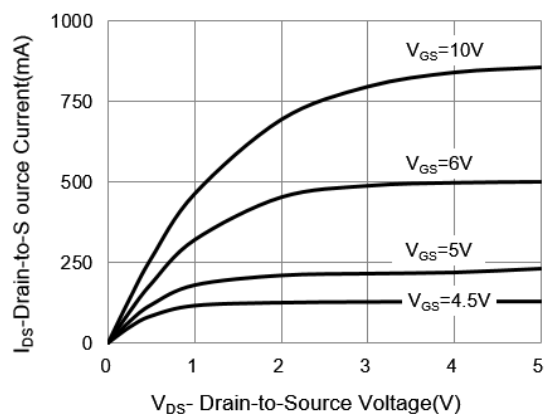


Fig.1 On-Region Characteristics

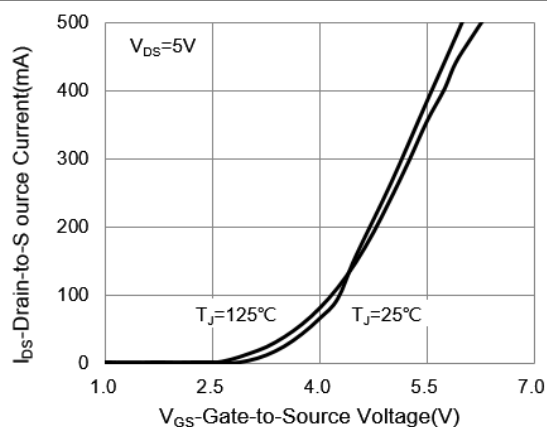


Fig.2 Transfer Characteristics

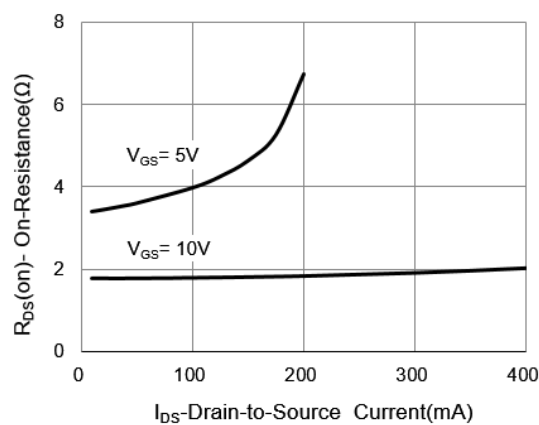


Fig.3 On-Resistance vs. Drain Current

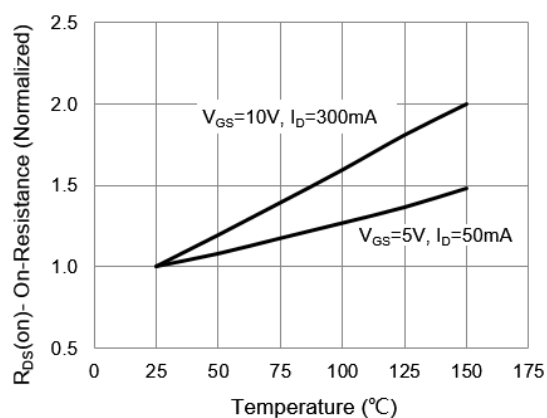


Fig.4 On-Resistance vs. Junction temperature

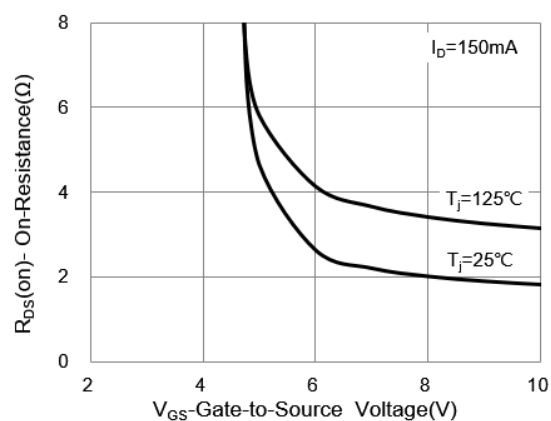


Fig.5 On-Resistance Variation with VGS.

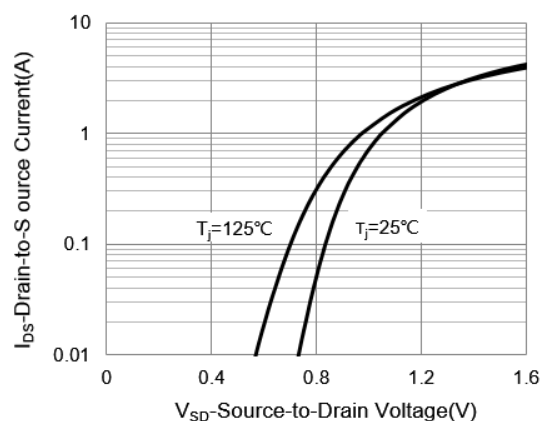


Fig.6 Body Diode Characteristics



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## TYPICAL CHARACTERISTIC CURVES

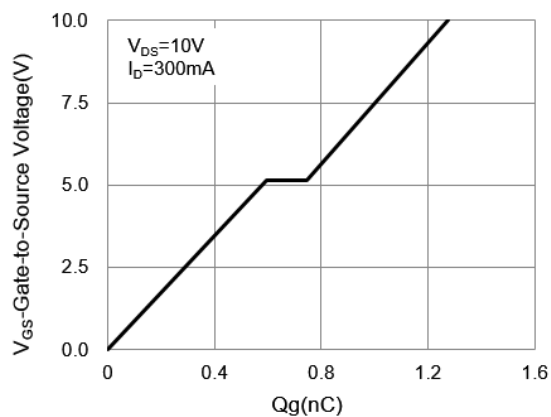


Fig.7 Gate-Charge Characteristics

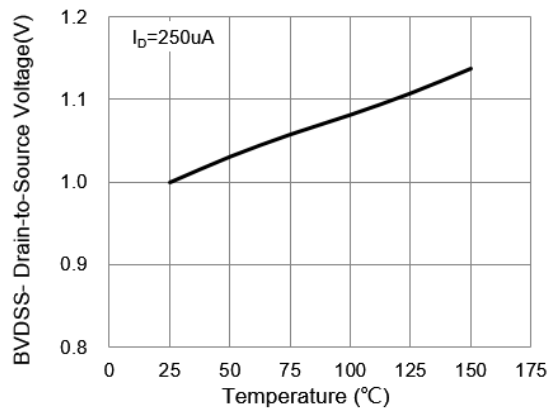


Fig.8 Breakdown Voltage Variation vs. Temperature

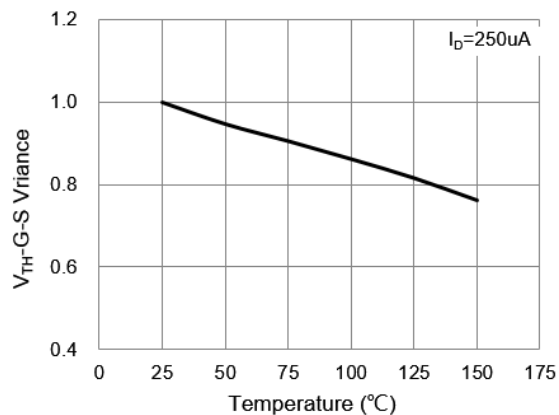


Fig.9 Threshold Voltage Variation with Temperature.

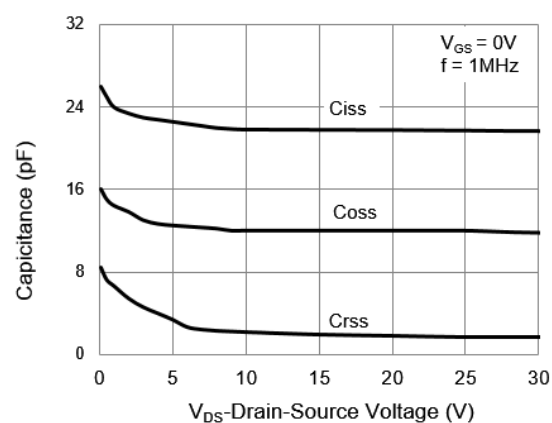


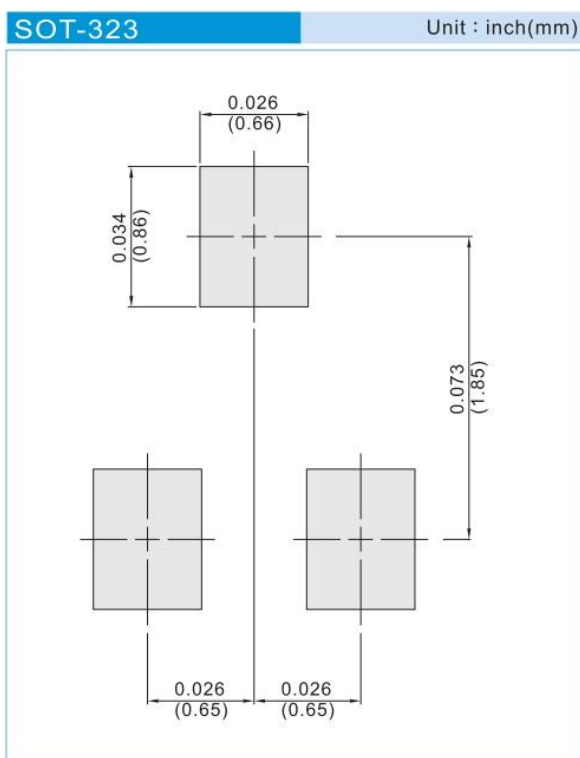
Fig.10 Capacitance vs. Drain-Source Voltage.

# PJC7002H

## PART NO PACKING CODE VERSION

PART NO PACKING CODE	Package Type	Packing Type	Marking	Version
PJC7002H_R1_00001	SOT-323	3K pcs / 7" reel	C2H	Halogen free
PJC7002H_R2_00001	SOT-323	12K pcs / 13" reel	C2H	Halogen free

## MOUNTING PAD LAYOUT





## PJC7002H

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