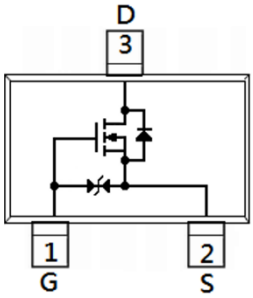
PJC7428-AU

30V N-Channel Enhancement Mode MOSFET

Voltage	30 V	Current	300mA

SOT-323





Features

- Advanced Trench Process Technology
- ESD Protected
- Specially Designed for Relay driver, Speed line drive, etc
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 standard

Mechanical Data

- Case : SOT-323 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.005 grams

Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±10	
Continuous Drain Current(Note 4)		I_D	300	mA
Pulsed Drain Current(Note 1)		I_{DM}	600	
Power Dissipation	T_A=25°C	P_D	350	mW
	Derate above 25°C		2.8	mW/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Thermal Resistance - Junction to Ambient(Note 3,4)		$R_{\theta JA}$	357	°C/W

PJC7428-AU

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
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	
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	
		V_{GS}=1.5V, I_D=50mA	-	1.1	3	
		V_{GS}=1.2V, I_D=20mA	-	1.5	4	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=24V, V_{GS}=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V	-	-	±10	
Dynamic(Note 5)						
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=1MHz	-	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=10Ω(Note 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≤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.

PJC7428-AU

TYPICAL CHARACTERISTIC CURVES

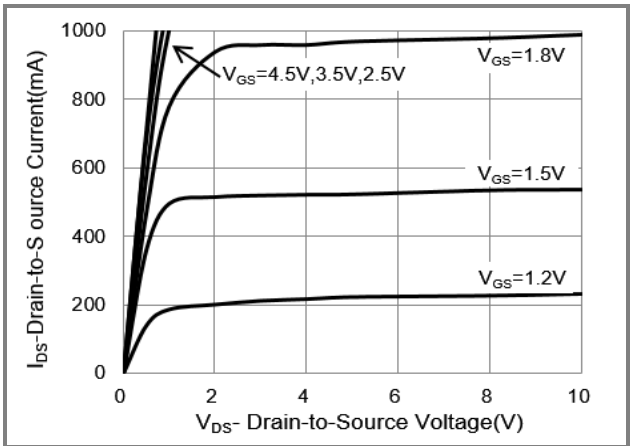


Fig.1 On-Region Characteristics

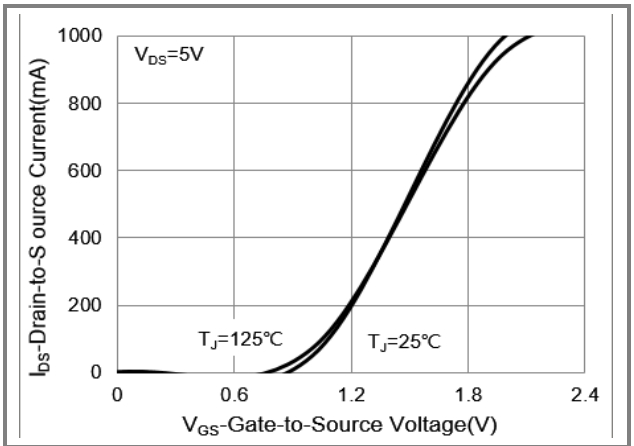


Fig.2 Transfer Characteristics

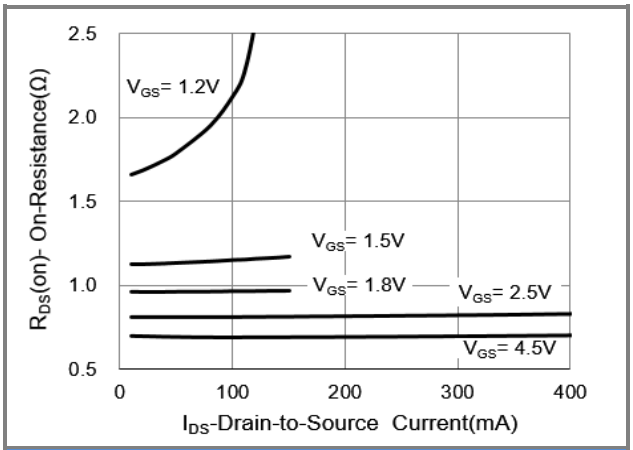


Fig.3 On-Resistance vs. Drain Current

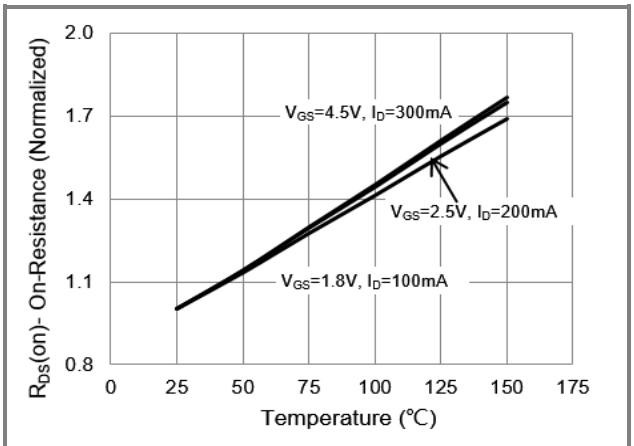


Fig.4 On-Resistance vs. Junction temperature

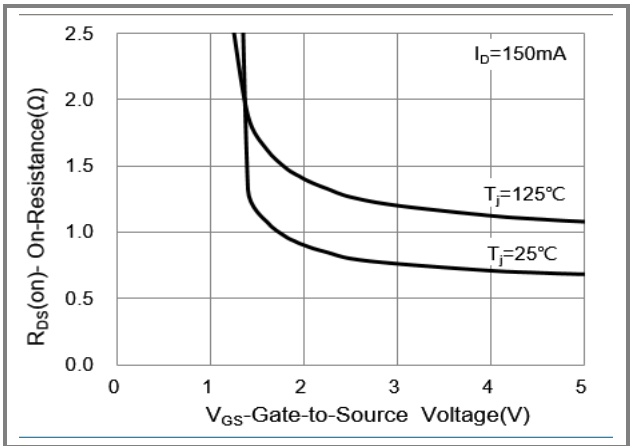


Fig.5 On-Resistance Variation with V_{GS}

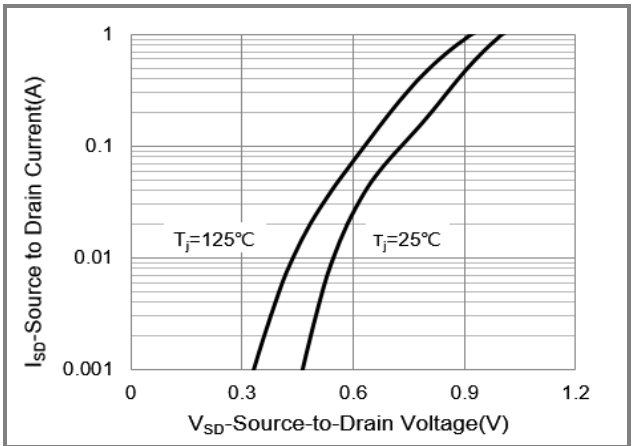


Fig.6 Body Diode Characteristics

PJC7428-AU

TYPICAL CHARACTERISTIC CURVES

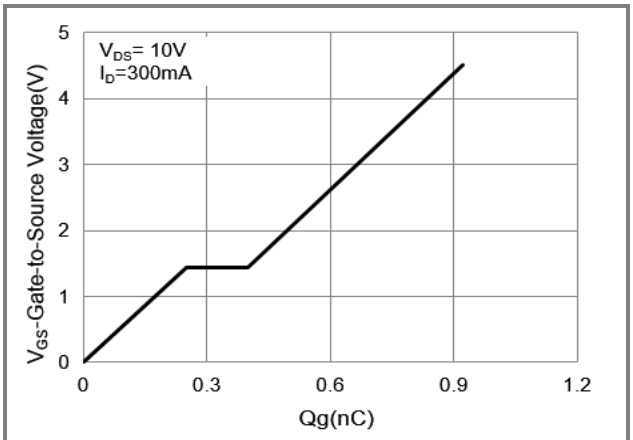


Fig.7 Gate-Charge Characteristics

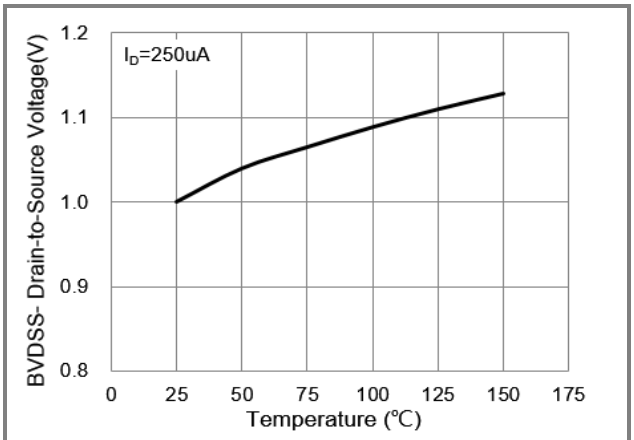


Fig.8 Breakdown Voltage Variation vs. Temperature

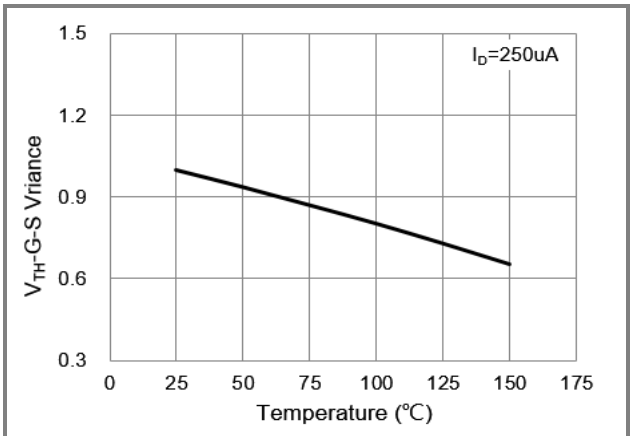


Fig.9 Threshold Voltage Variation with Temperature

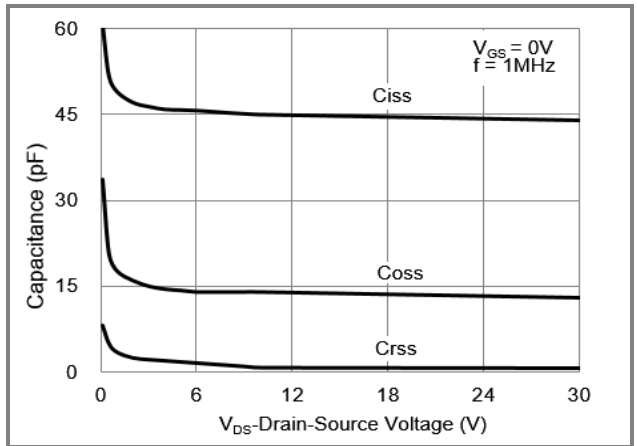


Fig.10 Capacitance vs. Drain-Source Voltage

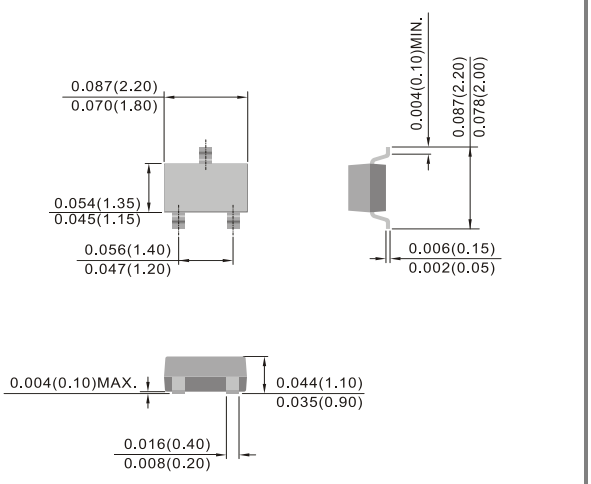
PJC7428-AU

Product and Packing Information

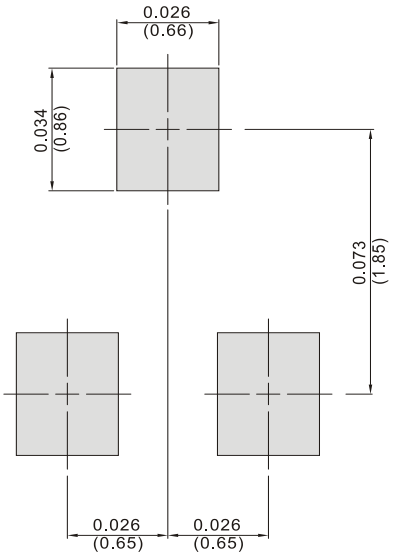
Part No.	Package Type	Packing Type	Marking
PJC7428-AU	SOT-323	3K pcs / 7” reel	C28

Packaging Information & Mounting Pad Layout

SOT-323 Dimension — Unit: inch(mm)



SOT-323 Pad Layout — Unit: inch(mm)



PJC7428-AU

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 follow PCN procedure. 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 or authorized for equipment relating to human life, life-saving or life-sustaining applications, such as medical instruments and aerospace machinery, or for other applications intended to cause personal injury. 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. For additional terms and conditions regarding the use of PANJIT products, please refer to the Terms of Use available on the PANJIT website.
- Since PANJIT uses lot number as the tracking base, please provide the lot number for tracking when complaining.