



30V P-Channel Enhancement Mode MOSFET

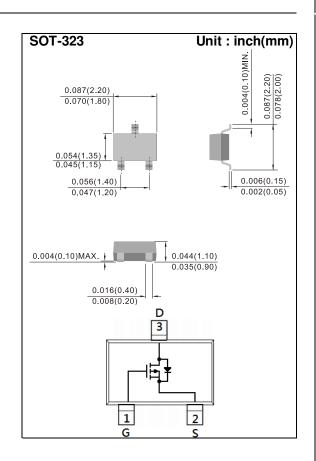
Voltage -30 V Current -1.5A

Features

- RDS(ON) , VGS@-10V, ID@-1.5A<115mΩ
- RDS(ON), VGS@-4.5V, ID@-1.1A<130mΩ
- RDS(ON) , VGS@-2.5V, ID@-0.6A<180mΩ
- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc.
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: SOT-323 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00018 ounces, 0.005 grams
- Marking: C01



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

PARAMET	SYMBOL	LIMIT	UNITS	
Drain-Source Voltage		V _{DS}	-30	V
Gate-Source Voltage		V_{GS}	<u>+</u> 12	V
Continuous Drain Current		I _D	-1.5	Α
Pulsed Drain Current		I _{DM}	-6	Α
Power Dissipation	T _a =25°C		350	mW
	Derate above 25°C	P_{D}	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)		$R_{\theta JA}$	357	°C/W





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	-	1	V		
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_{D}=-250uA$	-0.5	-0.96	-1.3	V		
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-1.5A	-	105	115	mΩ		
		V _{GS} =-4.5V, I _D =-1.1A	-	115	130			
		V_{GS} =-2.5V, I_{D} =-0.6A	-	145	180			
Zero Gate Voltage Drain Current	I _{DSS}	V_{DS} =-30V, V_{GS} =0V	-	-0.01	-1	uA		
Gate-Source Leakage Current	I _{GSS}	V _{GS} = <u>+</u> 12V, V _{DS} =0V	-	<u>+</u> 10	<u>+</u> 100	nA		
Dynamic								
Total Gate Charge	Q_g	V _{DS} =-15V, I _D =-1.5A, V _{GS} =-10V ^(Note 1,2)	-	11	-	nC		
Gate-Source Charge	Q_gs		-	0.85	i			
Gate-Drain Charge	Q_{gd}	V _{GS} =-10V	-	1.4	i			
Input Capacitance	Ciss	\\ 45\\\\\ 0\\	-	443	i	pF		
Output Capacitance	Coss	V_{DS} =-15V, V_{GS} =0V,	-	38	-			
Reverse Transfer Capacitance	Crss	f=1.0MHZ	-	25	i			
Switching								
Turn-On Delay Time	td _(on)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	-	2.5	i	ns		
Turn-On Rise Time	tr	V _{DD} =-15V, I _D =-1.5A,	-	32	-			
Turn-Off Delay Time	td _(off)	V_{GS} =-10V, R_{G} =6 Ω (Note 1,2)	-	161	i			
Turn-Off Fall Time	tf	M _G =012	-	73	i			
Drain-Source Diode								
Maximum Continuous Drain-Source			-	-	-0.5	А		
Diode Forward Current	I _S							
Diode Forward Voltage	V_{SD}	I _S =-1A, V _{GS} =0V	-	-0.79	-1.2	V		

NOTES:

- 1. Pulse width<a>300us, Duty cycle<a>2%
- 2. Essentially independent of operating temperature typical characteristics.
- 3. Rejah 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





TYPICAL CHARACTERISTIC CURVES

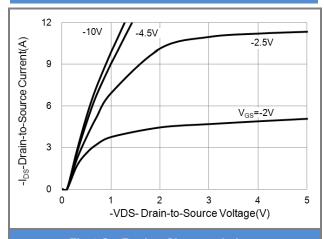


Fig.1 On-Region Characteristics

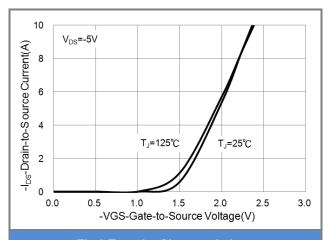


Fig.2 Transfer Characteristics

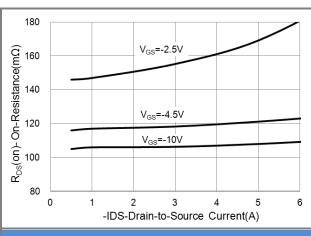


Fig.3 On-Resistance vs. Drain Current

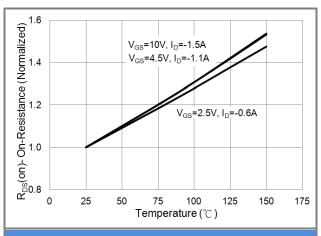


Fig.4 On-Resistance vs. Junction temperature

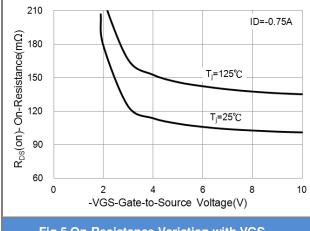


Fig.5 On-Resistance Variation with VGS.

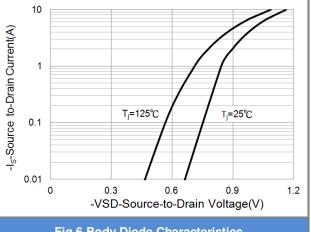


Fig.6 Body Diode Characteristics





TYPICAL CHARACTERISTIC CURVES

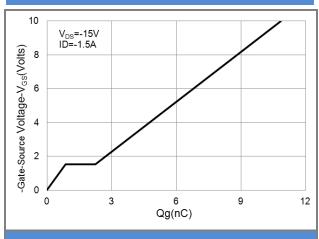


Fig.7 Gate-Charge Characteristics

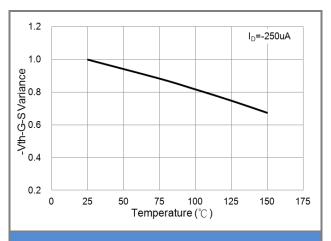


Fig.8 Threshold Voltage Variation with Temperature.

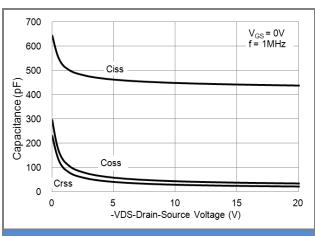


Fig.9 Capacitance vs. Drain-Source Voltage.

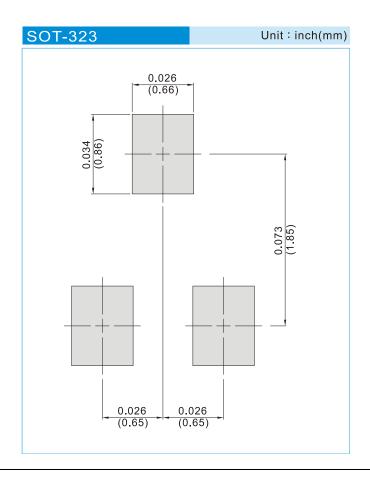




PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJC7401_R1_00001	SOT-323	3K pcs / 7" reel	C01	Halogen free
PJC7401_R2_00001	SOT-323	12K pcs / 13" reel	C01	Halogen free

MOUNTING PAD LAYOUT







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