



PJA3433

30V P-Channel Enhancement Mode MOSFET – ESD Protected

Voltage

-30 V

Current

-1.1A

Features

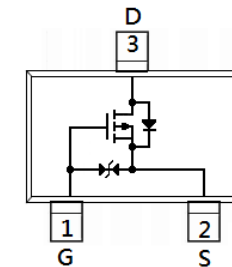
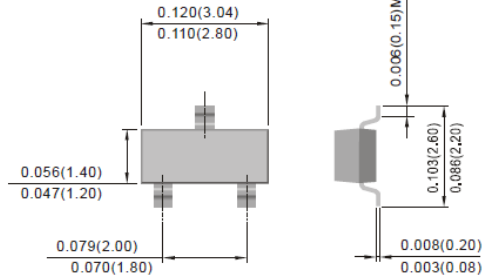
- RDS(ON) , VGS@-4.5V, ID@-1.1A<370mΩ
- RDS(ON) , VGS@-2.5V, ID@-0.5A<540mΩ
- RDS(ON) , VGS@-1.8V, ID@-0.1A<970mΩ
- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc.
- ESD Protected 2KV HBM
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0003 ounces, 0.0084 grams

SOT-23

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}	±8	V
Continuous Drain Current	I _D	-1.1	A
Pulsed Drain Current (Note 4)	I _{DM}	-4.4	A
Power Dissipation	P _D	T _a =25°C	1.25
		Derate above 25°C	10
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Typical Thermal resistance	R _{θJA}	100	°C/W
- Junction to Ambient (Note 3)			



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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	-30	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-0.5	-0.98	-1.3	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1.1A	-	293	370	mΩ
		V _{GS} =-2.5V, I _D =-0.5A	-	387	540	
		V _{GS} =-1.8V, I _D =-0.1A	-	750	970	
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} =±8V, V _{DS} =0V	-	±3.4	±10	uA
Dynamic (Note 5)						
Total Gate Charge	Q _g	V _{DS} =-15V, I _D =-1.1A, V _{GS} =-4.5V (Note 1,2)	-	1.6	-	nC
Gate-Source Charge	Q _{gs}		-	0.5	-	
Gate-Drain Charge	Q _{gd}		-	0.3	-	
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1.0MHZ	-	125	-	pF
Output Capacitance	C _{oss}		-	22	-	
Reverse Transfer Capacitance	C _{rss}		-	6	-	
Turn-On Delay Time	td _(on)	V _{DD} =-15V, I _D =-1.1A, V _{GS} =-4.5V, R _G =6Ω (Note 1,2)	-	11	-	ns
Turn-On Rise Time	tr		-	51	-	
Turn-Off Delay Time	td _(off)		-	65	-	
Turn-Off Fall Time	tf		-	46	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	-1.0	A
Diode Forward Voltage	V _{SD}	I _S =-1.0A, V _{GS} =0V	-	-0.9	-1.2	V

NOTES :

1. Pulse width ≤ 300us, Duty cycle ≤ 2%.
2. Essentially independent of operating temperature typical characteristics.
3. R_{θJA} 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

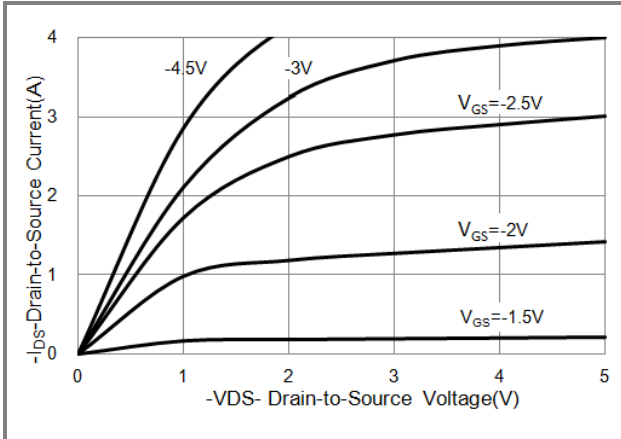


Fig.1 On-Region Characteristics

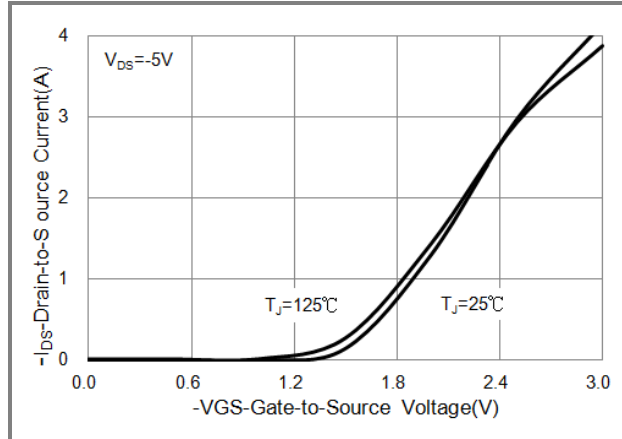


Fig.2 Transfer Characteristics

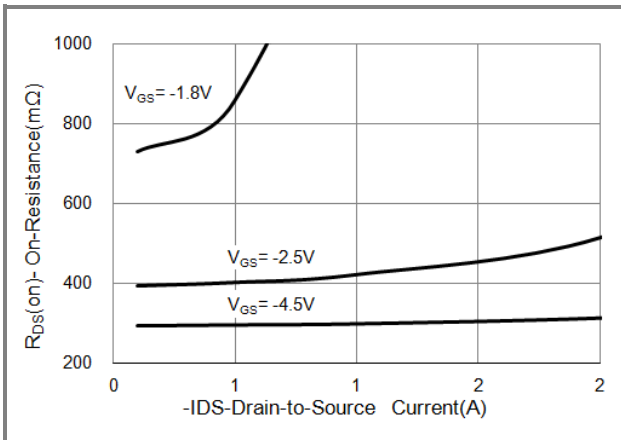


Fig.3 On-Resistance vs. Drain Current

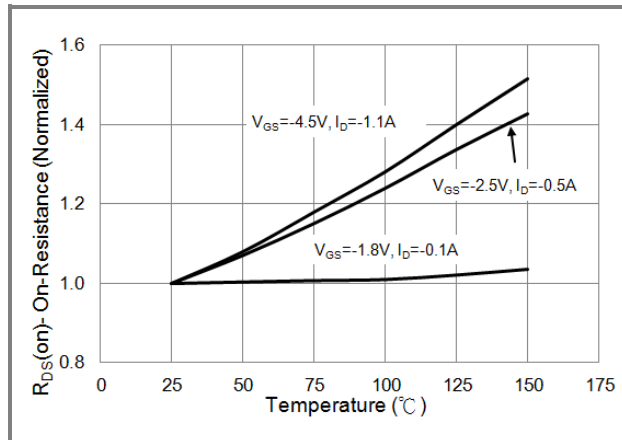


Fig.4 On-Resistance vs. Junction temperature

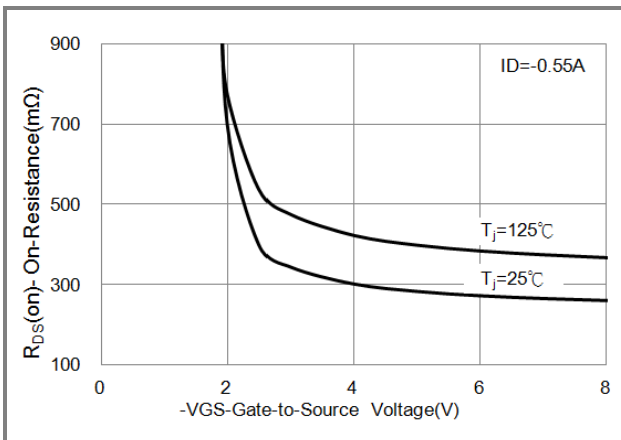


Fig.5 On-Resistance Variation with VGS.

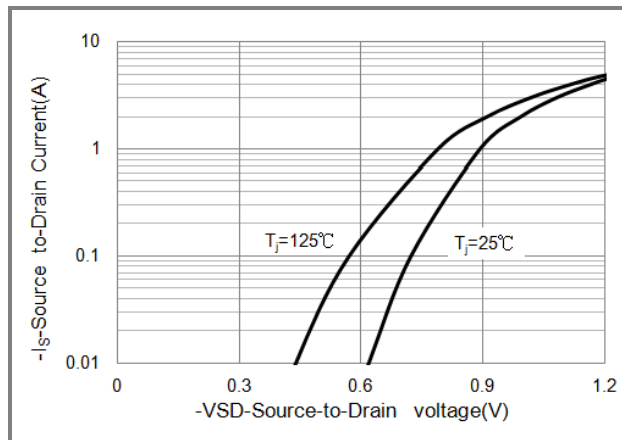


Fig.6 Body Diode Characteristics



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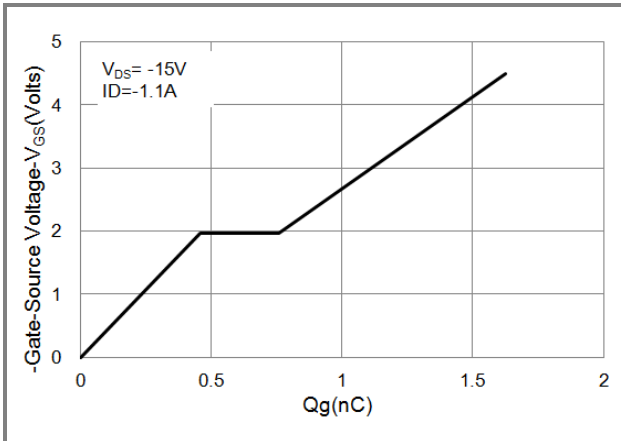


Fig.7 Gate-Charge Characteristics

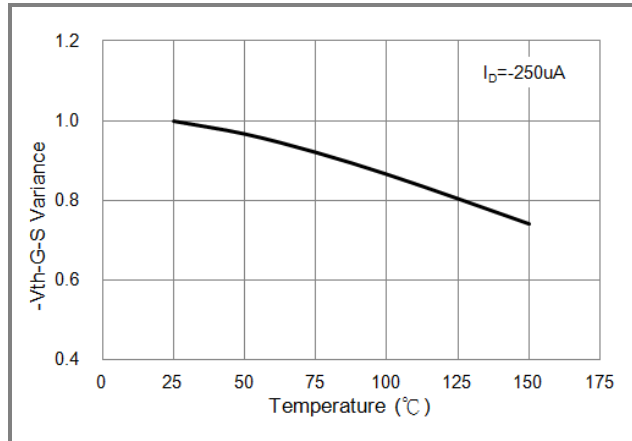


Fig.8 Threshold Voltage Variation with Temperature.

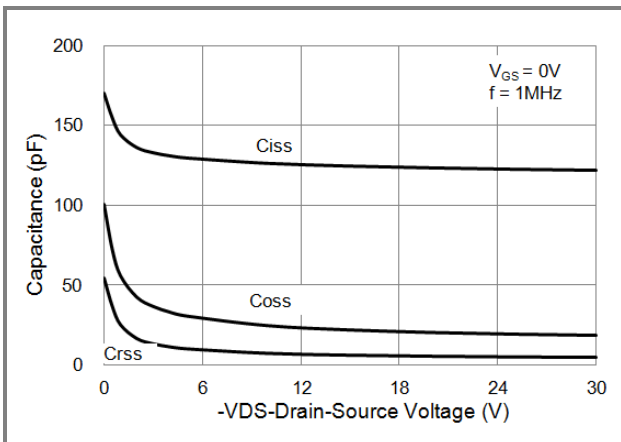


Fig.9 Capacitance vs. Drain-Source Voltage.



PJA3433

PART NO. PACKING CODE VERSION

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJA3433_R1_00001	SOT-23	3K pcs / 7" reel	A33	Halogen free RoHS compliant
PJA3433_R2_00001	SOT-23	12K pcs / 13" reel	A33	Halogen free RoHS compliant

MOUNTING PAD LAYOUT

