



20V N-Channel Enhancement Mode MOSFET

Voltage 20 V Current 750mA

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 2011/65/EU directive..
- Green molding compound as per IEC61249 Std. (Halogen Free)

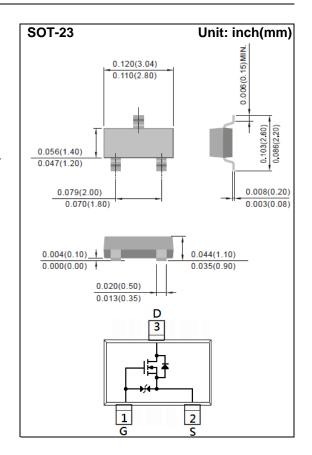
Mechanical Data

• Case: SOT-23 Package

• Terminals : Solderable per MIL-STD-750, Method 2026

Approx. Weight: 0.0003 ounces, 0.0084 grams

Marking: A34



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}	<u>+</u> 10	V
Continuous Drain Current		I _D	750	mA
Pulsed Drain Current (Note 4)		I _{DM}	1500	mA
Power Dissipation	T _a =25°C	P _D	500	mW
	Derate above 25°C		4	mW/°C
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Typical Thermal resistance				
- Junction to Ambient (Note 3)		$R_{\theta JA}$	250	°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	20	-	-	V		
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_{D}=250uA$	0.3	0.65	1.0	V		
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =600mA	-	280	400	mΩ		
		V _{GS} =2.5V, I _D =200mA	-	350	650			
		V _{GS} =1.8V, I _D =100mA	-	400	800			
		V _{GS} =1.5V, I _D =50mA	-	500	1200			
		V _{GS} =1.2V, I _D =20mA	-	1000	3000			
Zero Gate Voltage Drain Current	I_{DSS}	V _{DS} =16V, V _{GS} =0V	-	0.01	1	uA		
Gate-Source Leakage Current	I_{GSS}	V _{GS} = <u>+</u> 8V, V _{DS} =0V	-	<u>+</u> 0.5	<u>+</u> 10	uA		
Dynamic (Note 5)								
Total Gate Charge	Q_g	V _{DS} =10V, I _D =600mA, 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,	-	67	-	pF		
Output Capacitance	Coss		-	19	-			
Reverse Transfer Capacitance	Crss	I-I.UIVIIIZ	-	6	-			
Turn-On Delay Time	td _(on)	\/ -40\/ -450m A	-	2.8	-			
Turn-On Rise Time	tr	V_{DD} =10V, I_{D} =150mA, V_{GS} =4.0V, R_{G} =10 Ω (Note 1.2)		20	-	ns		
Turn-Off Delay Time	td _(off)			23	-			
Turn-Off Fall Time	tf	K _G -1022	-	23	-			
Drain-Source Diode								
Maximum Continuous Drain-Source Diode Forward Current	I _S		-	-	0.5	Α		
Diode Forward Voltage	V _{SD}	I _S =0.5A, V _{GS} =0V		0.87	1.3	V		

NOTES:

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





TYPICAL CHARACTERISTIC CURVES

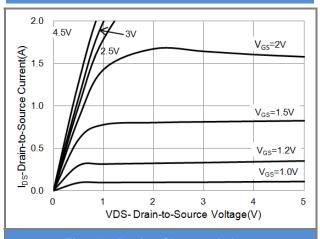


Fig.1 On-Region Characteristics

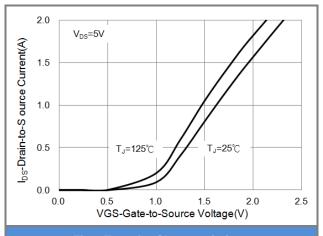


Fig.2 Transfer Characteristics

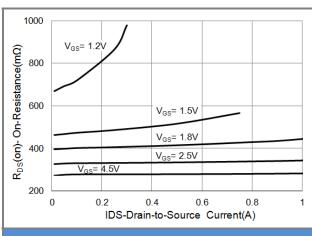


Fig.3 On-Resistance vs. Drain Current

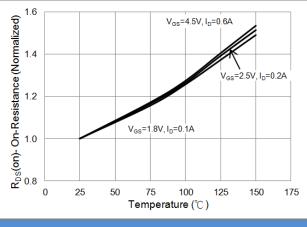
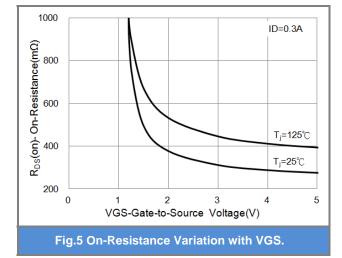
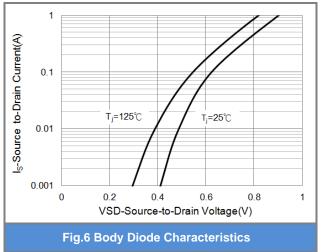


Fig.4 On-Resistance vs. Junction temperature









TYPICAL CHARACTERISTIC CURVES

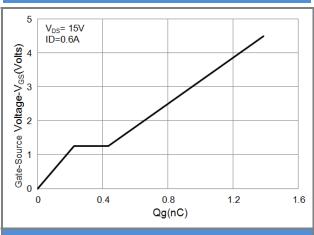


Fig.7 Gate-Charge Characteristics

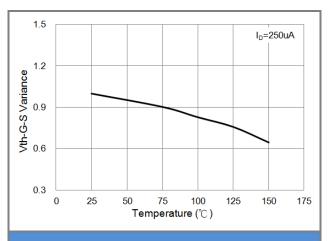


Fig.8 Threshold Voltage Variation with Temperature.

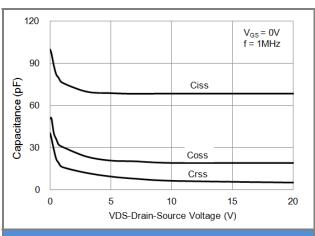


Fig.9 Capacitance vs. Drain-Source Voltage.

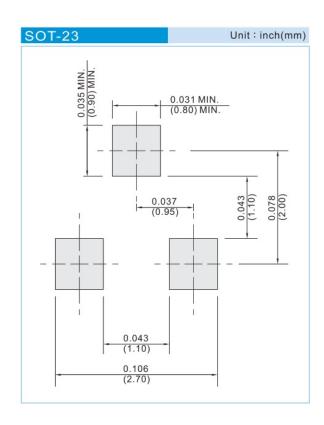




PART NO PACKING CODE VERSION

PART NO PACKING CODE	Package Type	Packing type	Marking	Version
PJA3434_R1_00001	SOT-23	3K pcs / 7" reel	A34	Halogen free
PJA3434_R2_00001	SOT-23	12K pcs / 13" reel	A34	Halogen free

MOUNTING PAD LAYOUT







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