



PJS6404

30V N-Channel Enhancement Mode MOSFET

Voltage

30 V

Current

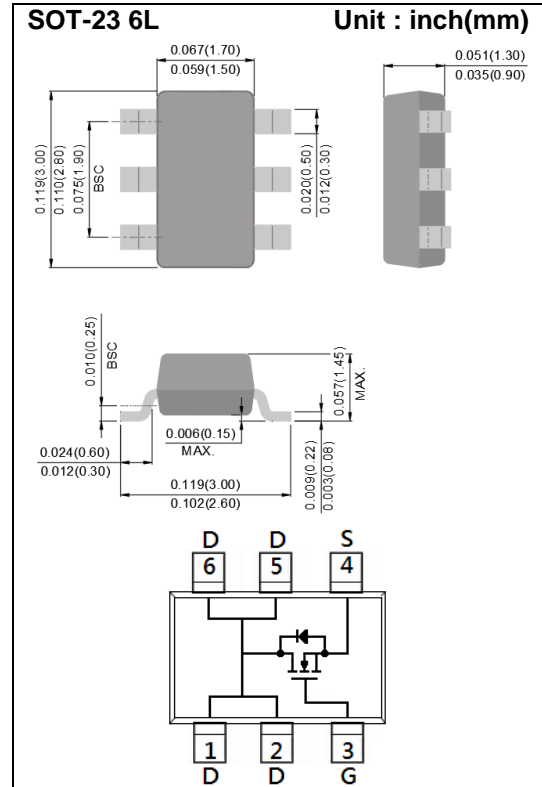
6.8A

Features

- RDS(ON) , VGS@10V, ID@6.8A<32mΩ
- RDS(ON) , VGS@4.5V,ID@4.3A<47mΩ
- 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-23 6L Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0005 ounces, 0.014 grams
- Marking: S04



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}	+20	V	
Continuous Drain Current	I _D	6.8	A	
Pulsed Drain Current	I _{DM}	27.2	A	
Power Dissipation	P _D	T _a =25°C	2	W
		Derate above 25°C	16	mW/°C
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	-55~150	°C	
Typical Thermal Resistance	R _{θJA}	62.5	°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	1.0	1.4	2.1	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =6.8A	-	26	32	mΩ
		V _{GS} =4.5V, I _D =4.3A	-	38	47	
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} =±20V, V _{DS} =0V	-	±10	±100	nA
Dynamic						
Total Gate Charge	Q _g	V _{DS} =15V, I _D =6.8A, V _{GS} =10V(Notes 1,2)	-	7.8	-	nC
Gate-Source Charge	Q _{gs}		-	1.2	-	
Gate-Drain Charge	Q _{gd}		-	1.5	-	
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHZ	-	343	-	pF
Output Capacitance	C _{oss}		-	48	-	
Reverse Transfer Capacitance	C _{rss}		-	34	-	
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} =15V, I _D =6.8A, V _{GS} =10V, R _G =6Ω(Notes 1,2)	-	3.1	-	ns
Turn-On Rise Time	t _r		-	40	-	
Turn-Off Delay Time	t _{d(off)}		-	38	-	
Turn-Off Fall Time	t _f		-	39	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	2.0	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V	-	0.75	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



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TYPICAL CHARACTERISTIC CURVES

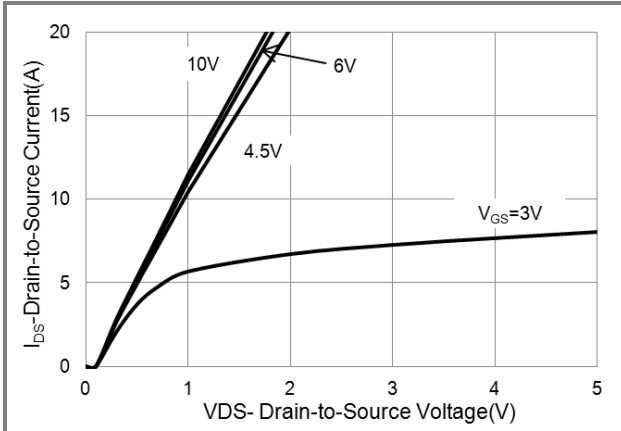


Fig.1 On-Region Characteristics

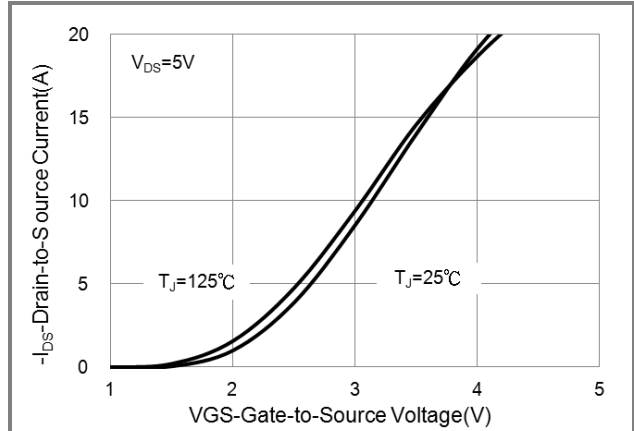


Fig.2 Transfer Characteristics

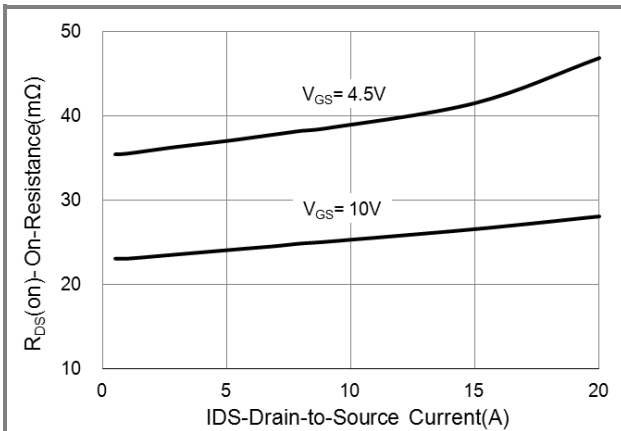


Fig.3 On-Resistance vs. Drain Current

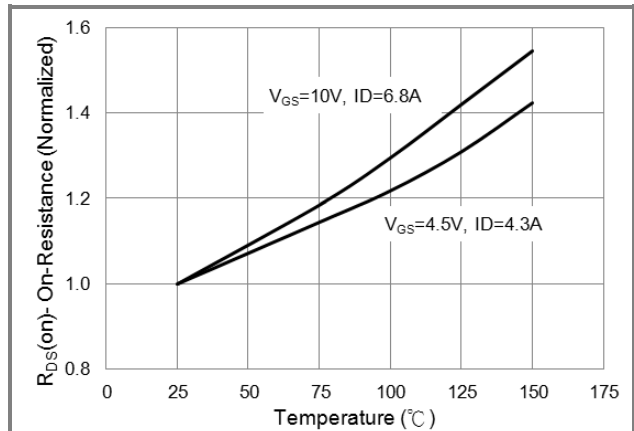


Fig.4 On-Resistance vs. Junction temperature

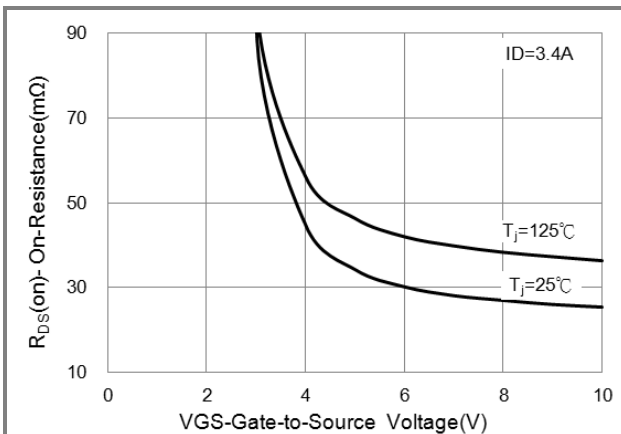


Fig.5 On-Resistance Variation with VGS.

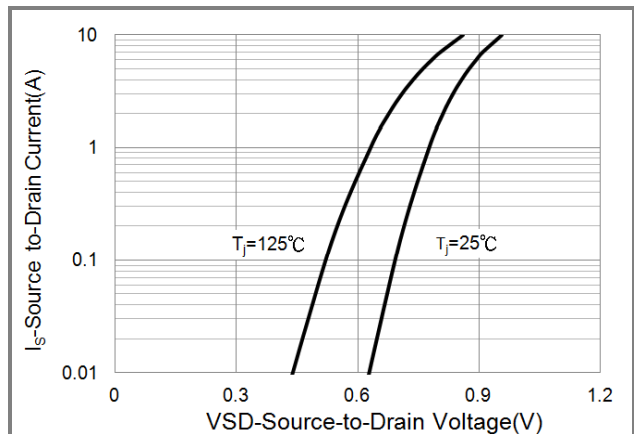


Fig.6 Body Diode Characteristics



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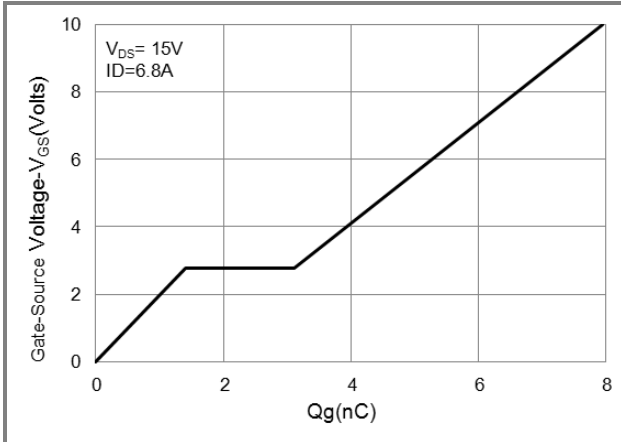


Fig.7 Gate-Charge Characteristics

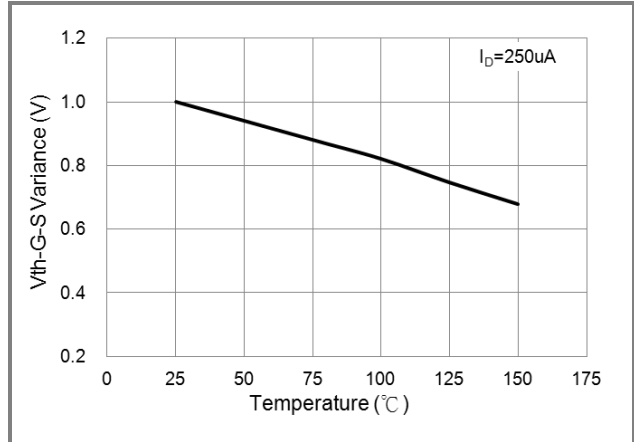


Fig.8 Threshold Voltage Variation with Temperature.

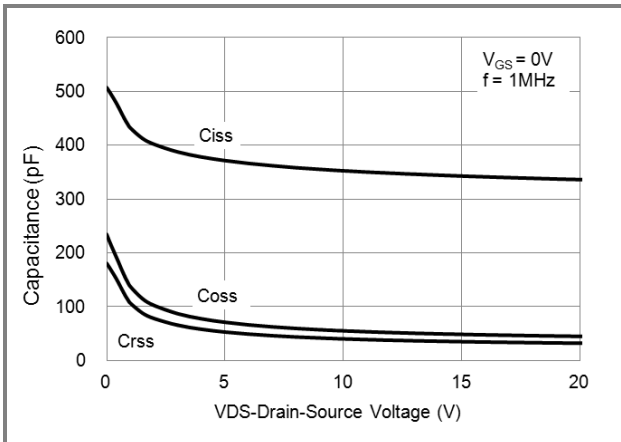


Fig.9 Capacitance vs. Drain-Source Voltage.



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PART NO. PACKING CODE VERSION

Part No. Packing Code	Package Type	Packing Type	Marking	Version
PJS6404_S1_00001	SOT-23 6L	3K pcs / 7" reel	S04	Halogen free RoHS compliant

MOUNTING PAD LAYOUT

