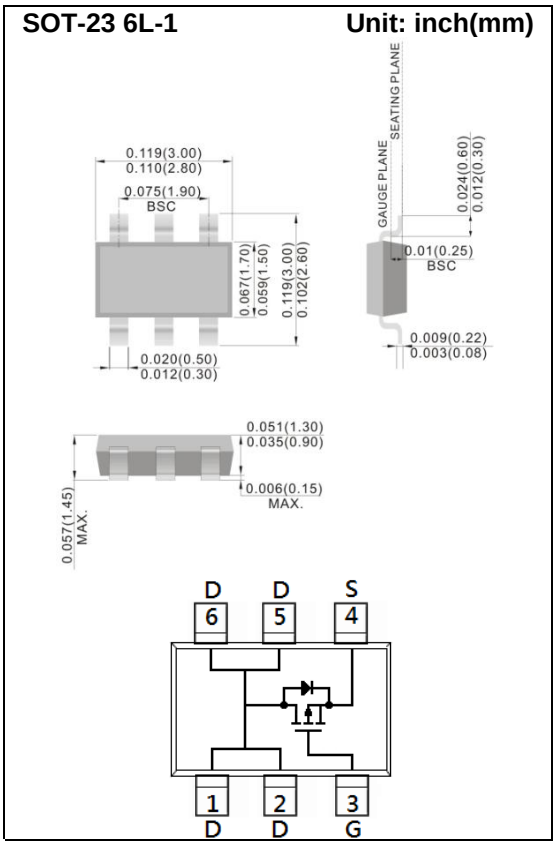
PJS6417

20V P-Channel Enhancement Mode MOSFET

Voltage	-20 V	Current	-6.5A



Features

- $R_{DS(ON)}$, V_{GS}@-4.5V, I_D@-6.5A<35mΩ
- $R_{DS(ON)}$, V_{GS}@-2.5V, I_D@-4.6A<40mΩ
- $R_{DS(ON)}$, V_{GS}@-1.8V, I_D@-2.6A<50mΩ
- Advanced Trench Process Technology
- Specially Designed for Switch Load, PWM Application, etc
- 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 6L-1 Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0005 ounces, 0.0141 grams
- Marking: S17

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}	±8	V
Continuous Drain Current		I_D	-6.5	A
Pulsed Drain Current		I_{DM}	-26	A
Power Dissipation	T_a=25°C	P_D	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 - Junction to Ambient (Note 3)		$R_{\theta JA}$	62.5	°C/W

PJS6417

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	-0.35	-0.59	-0.9	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-6.5A	-	29	35	mΩ
		V_{GS}=-2.5V, I_D=-4.6A	-	33	40	
		V_{GS}=-1.8V, I_D=-2.6A	-	40	50	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V	-	-0.01	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V	-	±10	±100	nA
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-6.5A, V_{GS}=-4.5V (Note 1,2)	-	18.9	-	nC
Gate-Source Charge	Q_{gs}		-	2.8	-	
Gate-Drain Charge	Q_{gd}		-	4.2	-	
Input Capacitance	Ciss	V_{DS}=-10V, V_{GS}=0V, f=1.0MHZ	-	1760	-	pF
Output Capacitance	Coss		-	148	-	
Reverse Transfer Capacitance	Crss		-	120	-	
Switching						
Turn-On Delay Time	$td_{(on)}$	V_{DS}=-10V, I_D=-6.5A, V_{GS}=-4.5V, R_G=6Ω (Note 1,2)	-	12	-	ns
Turn-On Rise Time	tr			68		
Turn-Off Delay Time	$td_{(off)}$		-	82	-	
Turn-Off Fall Time	tf		-	35	-	
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	-	-0.69	-1.2	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

PJS6417

TYPICAL CHARACTERISTIC CURVES

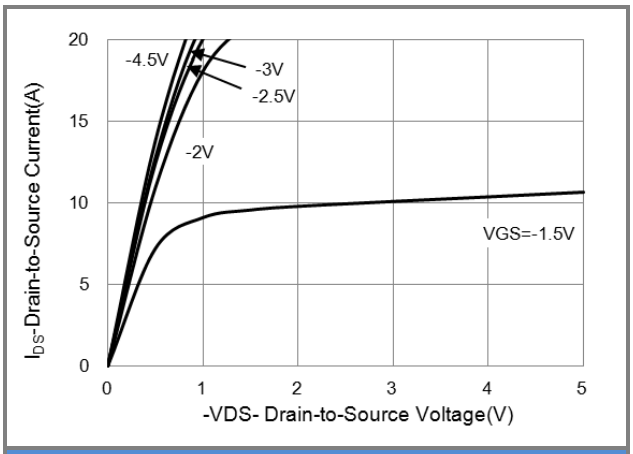


Fig.1 On-Region Characteristics

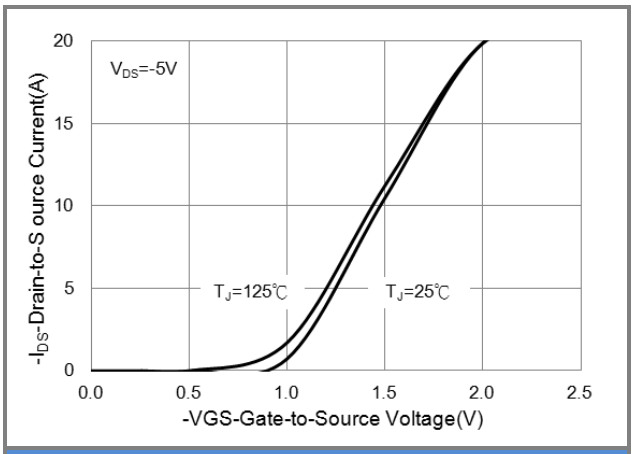


Fig.2 Transfer Characteristics

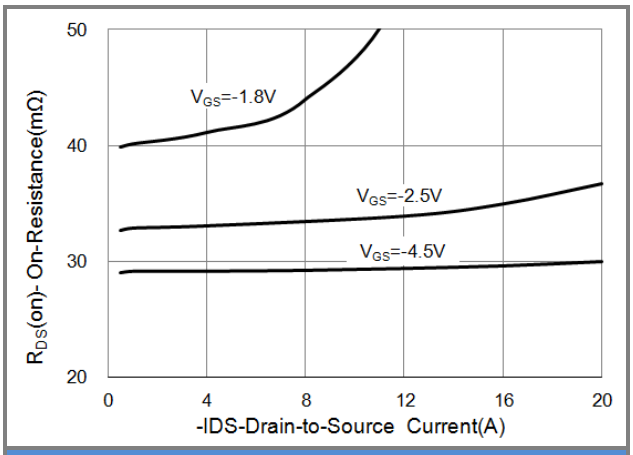


Fig.3 On-Resistance vs. Drain Current

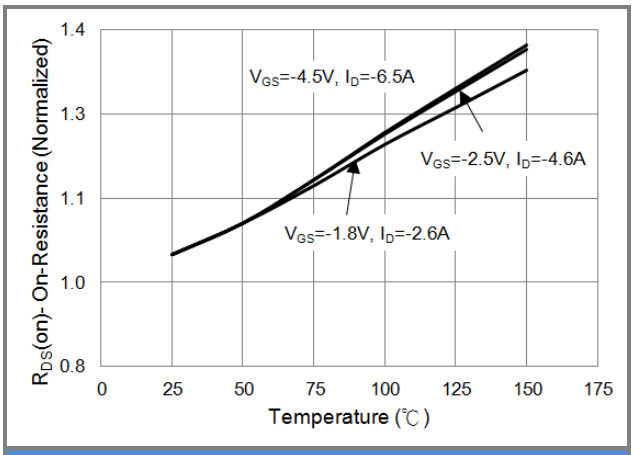


Fig.4 On-Resistance vs. Junction temperature

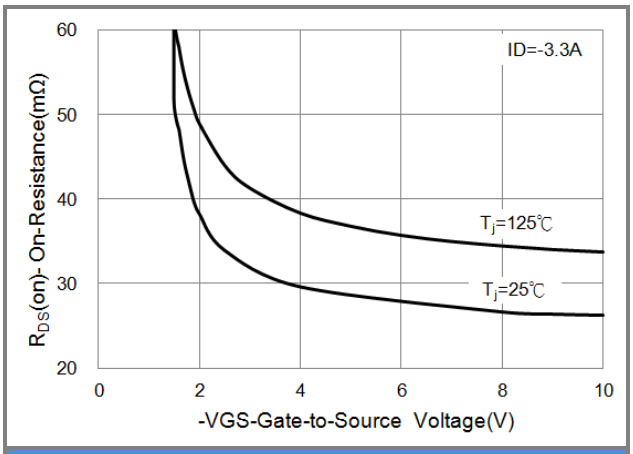


Fig.5 On-Resistance Variation with VGS.

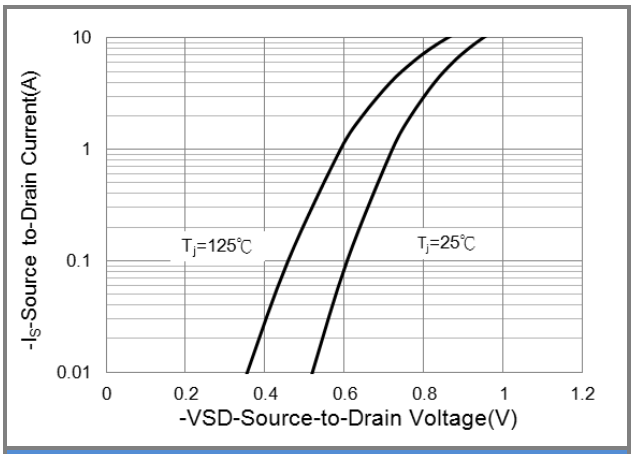


Fig.6 Body Diode Characteristics

PJS6417

TYPICAL CHARACTERISTIC CURVES

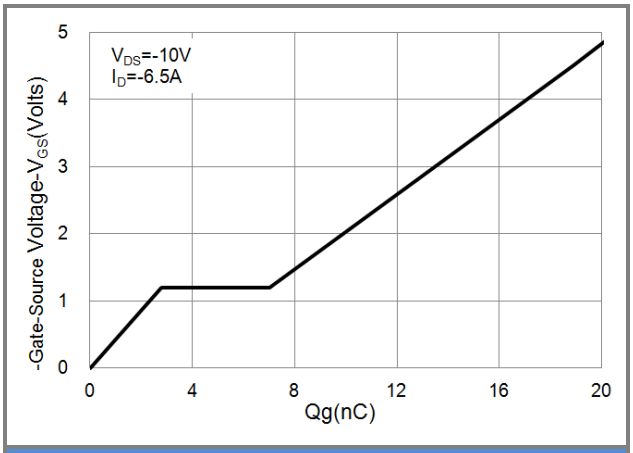


Fig.7 Gate-Charge Characteristics

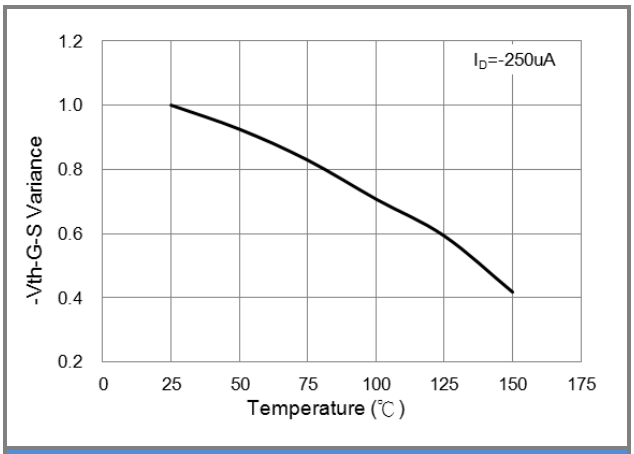


Fig.8 Threshold Voltage Variation with Temperature

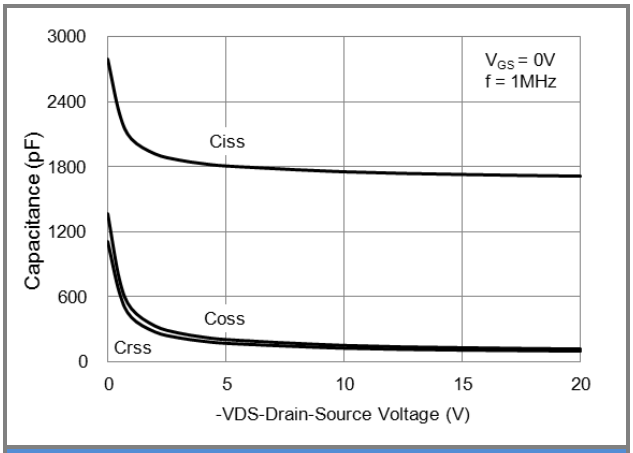


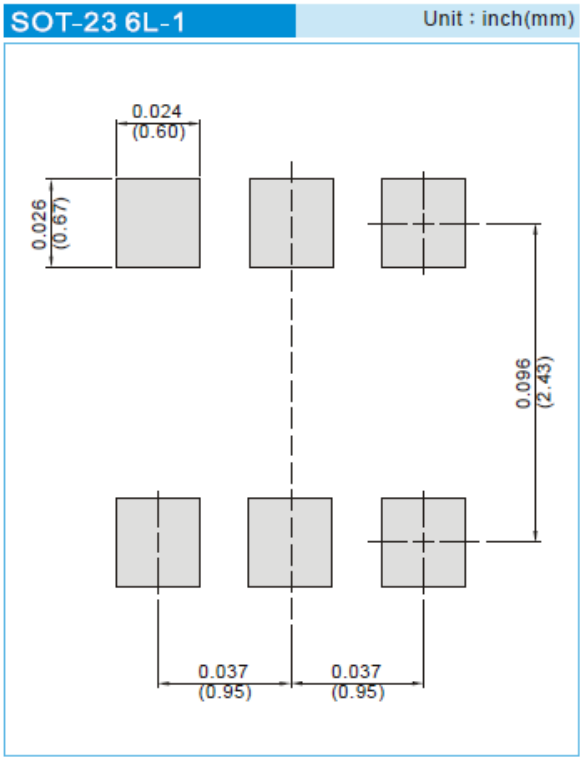
Fig.9 Threshold Voltage Variation with Temperature.

PJS6417

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJS6417_S1_00001	SOT-23 6L-1	3K pcs / 7” reel	S17	Halogen free

MOUNTING PAD LAYOUT



PJS6417

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