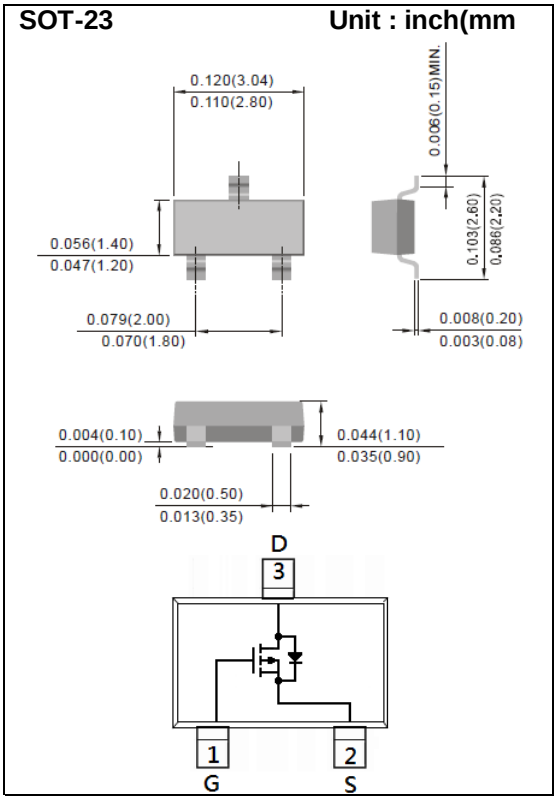
PJA3461

60V P-Channel Enhancement Mode MOSFET

Voltage	-60 V	Current	-1.9A



Features

- $R_{DS(ON)}$, V_{GS}@-10V, I_D@-1.9A<190mΩ
- $R_{DS(ON)}$, V_{GS}@-4.5V, I_D@-1.5A<240mΩ
- 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 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084 grams
- Marking: A61

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

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C	I_D	-1.9	A
	T_A=70°C		-1.5	
Pulsed Drain Current (Note 1)		I_{DM}	-7.6	A
Power Dissipation	T_A=25°C	P_D	1.25	W
	T_A=70°C		0.8	
Single Pulse Avalanche Energy (Note 5)		E_{AS}	32	mJ
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Typical Thermal resistance - Junction to Ambient (Note 6)		$R_{\theta JA}$	100	°C/W

PJA3461

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	-60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250uA	-1.0	-1.88	-2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-1.9A	-	140	190	mΩ
		V_{GS}=-4.5V, I_D=-1.5A	-	190	240	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V, V_{GS}=0V	-	-	-1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Dynamic (Note 7)						
Total Gate Charge	Q_g	V_{DS}=-30V, I_D=-1.9A, V_{GS}=-10V (Note 1,2)	-	8.3	-	nC
Gate-Source Charge	Q_{gs}		-	1.8	-	
Gate-Drain Charge	Q_{gd}		-	1.6	-	
Input Capacitance	Ciss	V_{DS}=-30V, V_{GS}=0V, f=1.0MHZ	-	430	-	pF
Output Capacitance	Coss		-	33	-	
Reverse Transfer Capacitance	Crss		-	29	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=-30V, I_D=-1.0A, V_{GS}=-10V, R_G=6Ω (Note 1,2)	-	5.1	-	ns
Turn-On Rise Time	tr		-	20	-	
Turn-Off Delay Time	$td_{(off)}$		-	36	-	
Turn-Off Fall Time	tf		-	11	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	-1.5	A
Diode Forward Voltage	V_{SD}	I_S=-1.0A, V_{GS}=0V	-	-0.78	-1.0	V

NOTES :

1. Pulse width≤300us, Duty cycle≤2%
2. Essentially independent of operating temperature typical characteristics.
3. The maximum current rating is package limited.
4. Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial TJ =25°C.
5. The test condition is L=1mH, I_{AS}=8A, V_{DD}=25V, V_{GS}=10V
6. $R_{\Theta JA}$ 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 $inch^2$ with 2oz.square pad of copper.
7. Guaranteed by design, not subject to production testing.

PJA3461

TYPICAL CHARACTERISTIC CURVES

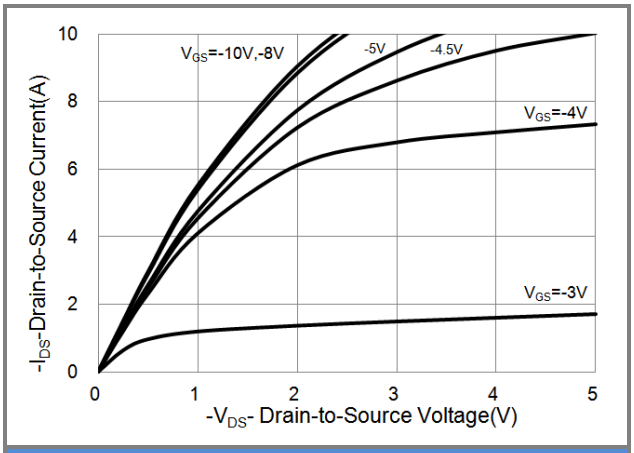


Fig.1 On-Region Characteristics

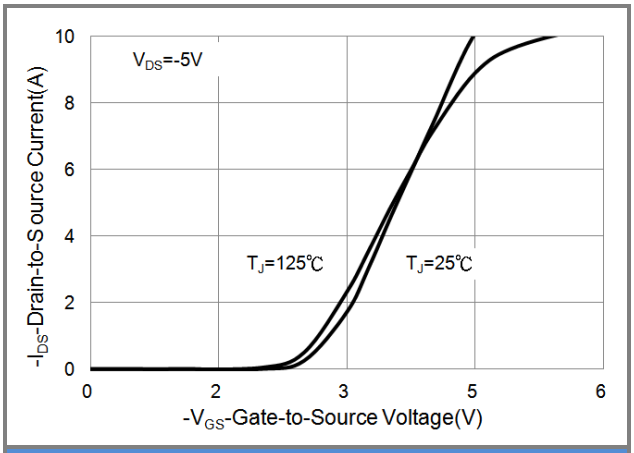


Fig.2 Transfer Characteristics

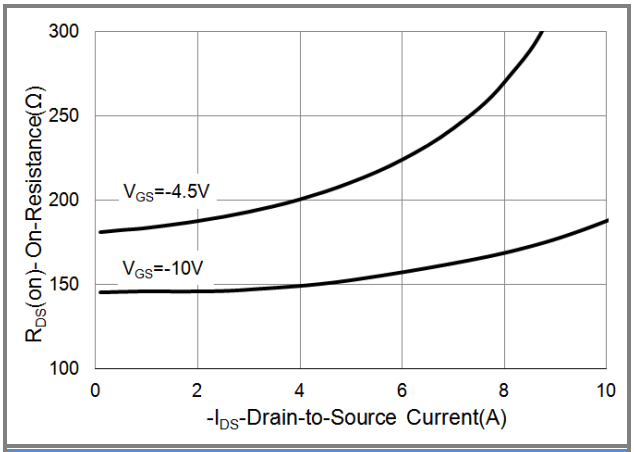


Fig.3 On-Resistance vs. Drain Current

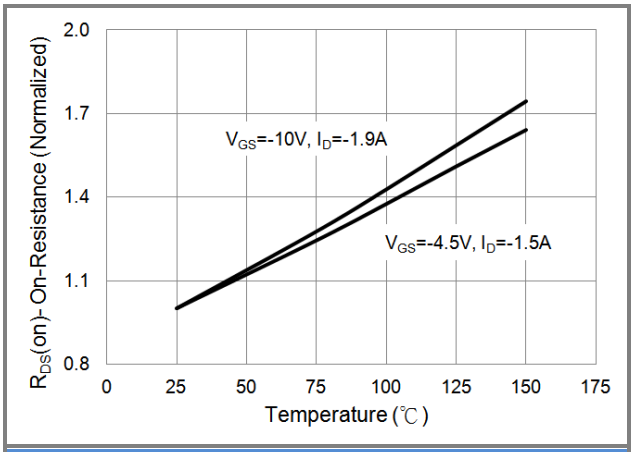


Fig.4 On-Resistance vs. Junction temperature

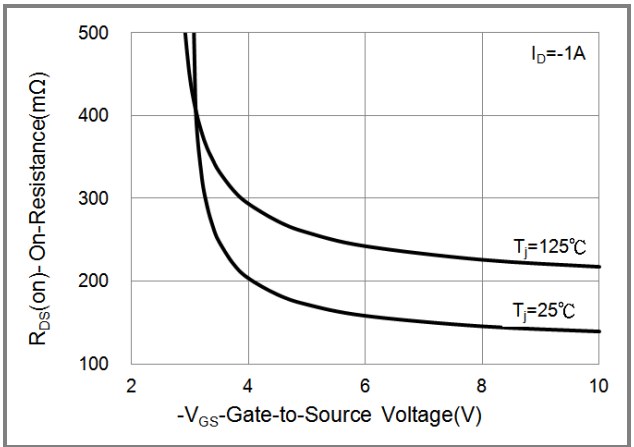


Fig.5 On-Resistance Variation with VGS.

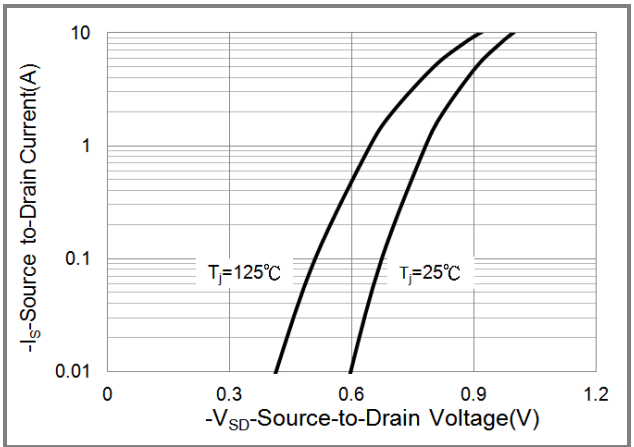


Fig.6 Body Diode Characteristics

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TYPICAL CHARACTERISTIC CURVES

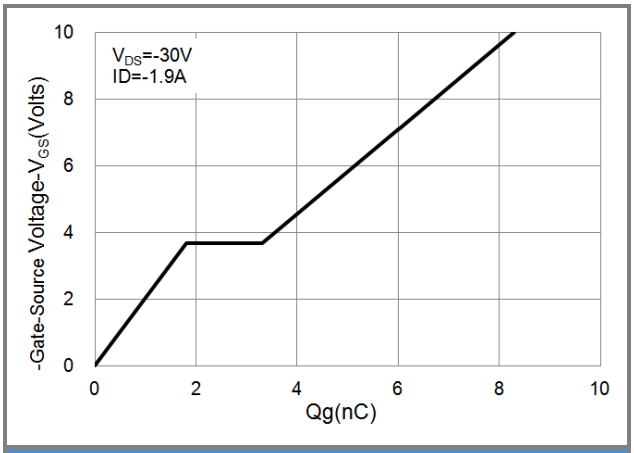


Fig.7 Gate-Charge Characteristics

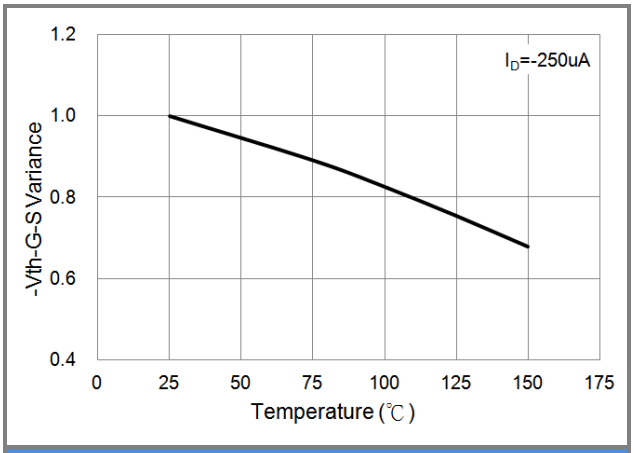


Fig.8 Threshold Voltage Variation with Temperature.

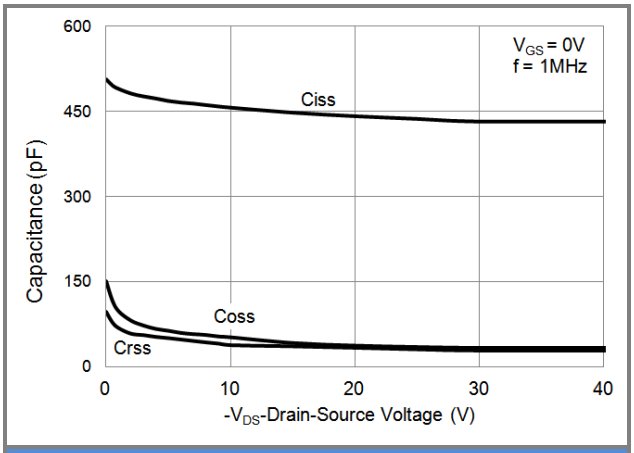


Fig.9 Capacitance vs. Drain-Source Voltage.

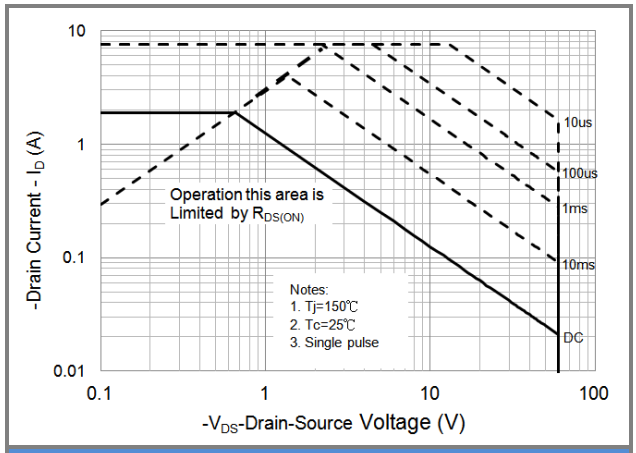


Fig.10 Maximum Safe Operating Area.

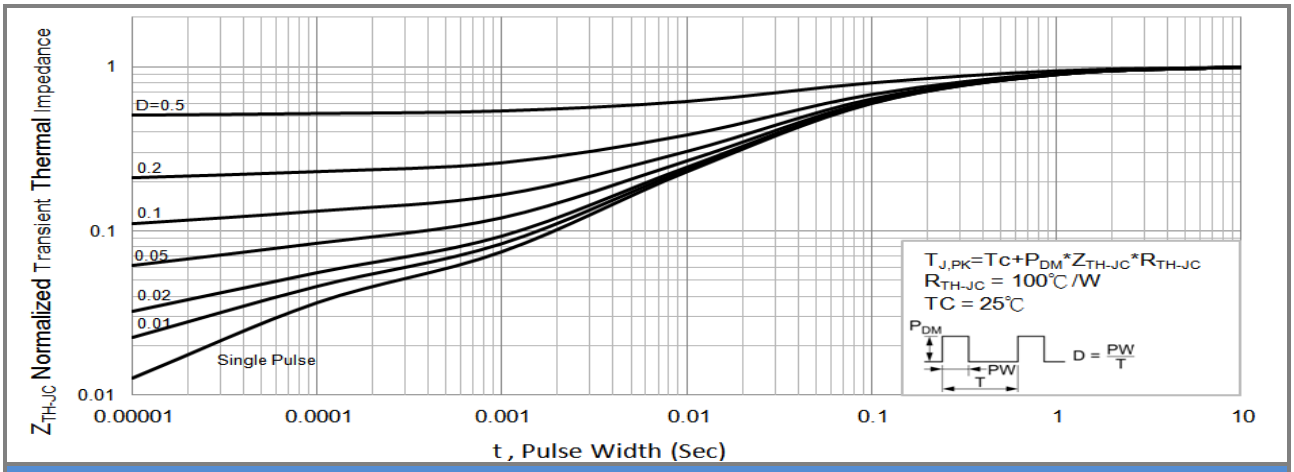


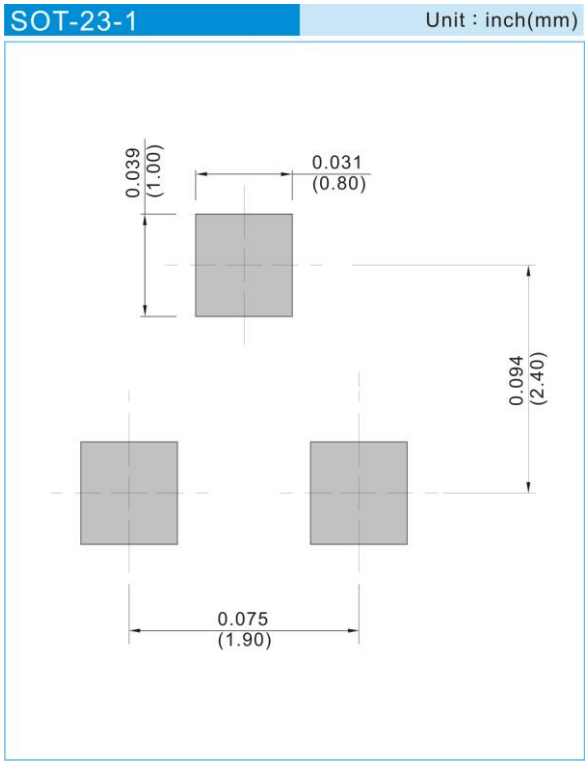
Fig.11 Normalized Transient Thermal Impedance vs. Pulse Width

PJA3461

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PJA3461_R1_00001	SOT-23	3K pcs / 7” reel	A61	Halogen free
PJA3461_R2_00001	SOT-23	12K pcs / 13” reel	A61	Halogen free

MOUNTING PAD LAYOUT



PJA3461

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