

PJA3460

60V N-Channel Enhancement Mode MOSFET

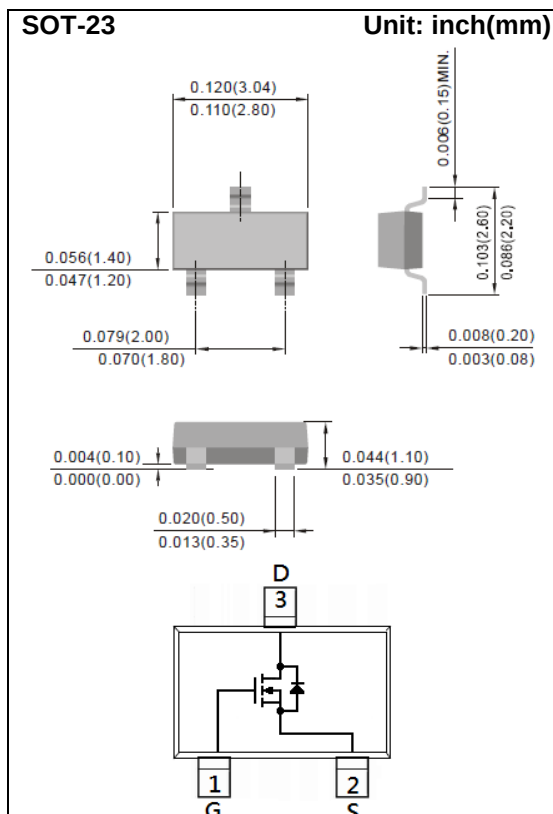
Voltage	60 V	Current	2.5 A
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Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@2.0A < 75m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_D@1.0A < 90m\Omega$
- 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: A60



Maximum Ratings and Thermal Characteristics ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V _{DS}	60	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current		I _D	2.5	A
Pulsed Drain Current (Note 4)		I _{DM}	10	A
Power Dissipation	T _a =25°C	P _D	1.25	W
	Derate above 25°C		10	mW/°C
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 ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

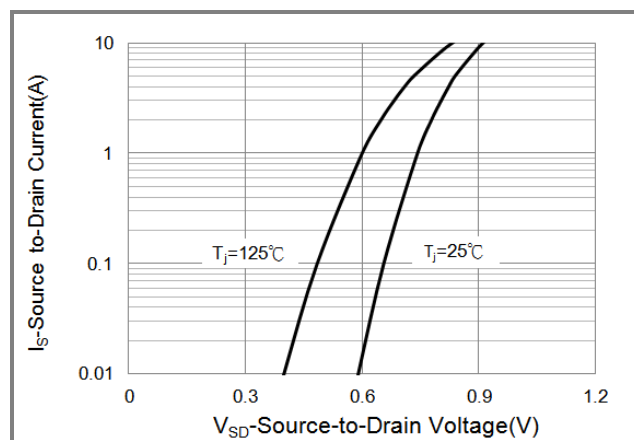
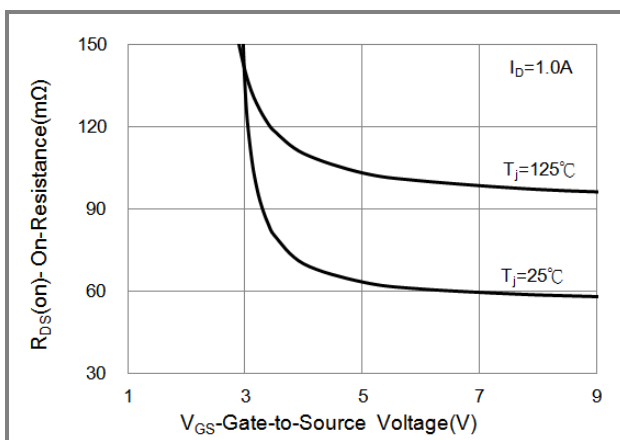
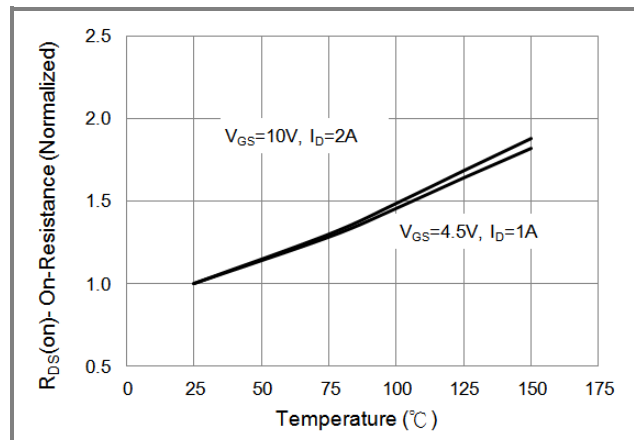
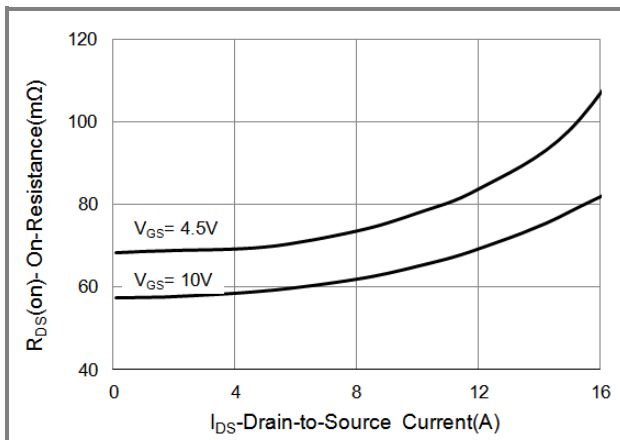
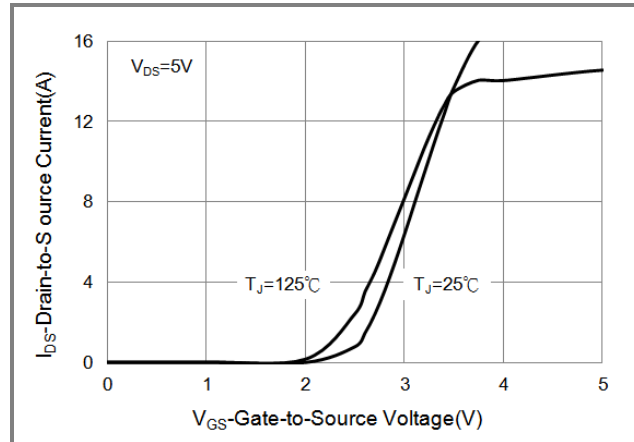
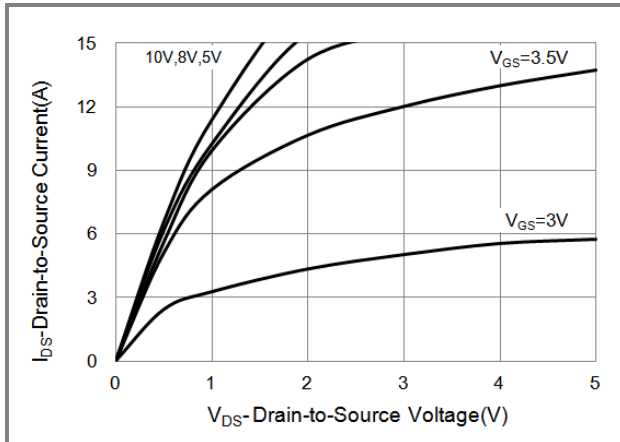
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	60	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.75	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =2.0A	-	55	75	mΩ
		V _{GS} =4.5V, I _D =1.0A	-	63	90	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V	-	-	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Dynamic ^(Note 5)						
Total Gate Charge	Q _g	V _{DS} =48V, I _D =2.0A, V _{GS} =10V ^(Note 1,2)	-	9.3	-	nC
Gate-Source Charge	Q _{gs}		-	2.2	-	
Gate-Drain Charge	Q _{gd}		-	1.9	-	
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHZ	-	509	-	pF
Output Capacitance	C _{oss}		-	47	-	
Reverse Transfer Capacitance	C _{rss}		-	23	-	
Turn-On Delay Time	td _(on)	V _{DD} =30V, I _D =2.0A, V _{GS} =10V, R _G =3.3Ω ^(Note 1,2)	-	3.2	-	ns
Turn-On Rise Time	tr		-	9.7	-	
Turn-Off Delay Time	td _(off)		-	18.5	-	
Turn-Off Fall Time	tf		-	6.4	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I _S	---	-	-	2.5	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V	-	0.77	1.2	V

NOTES :

1. Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
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.
5. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES





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TYPICAL CHARACTERISTIC CURVES

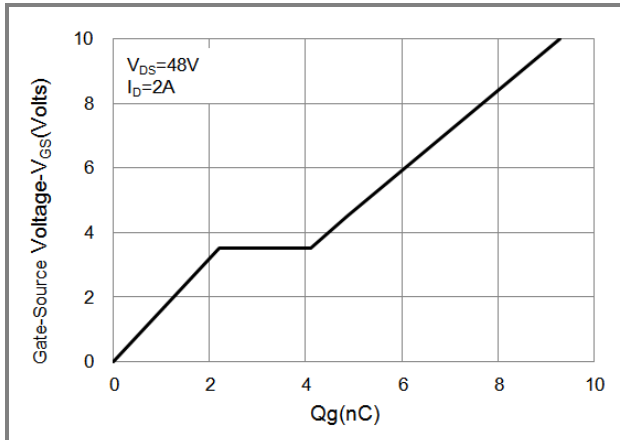


Fig.7 Gate-Charge Characteristics

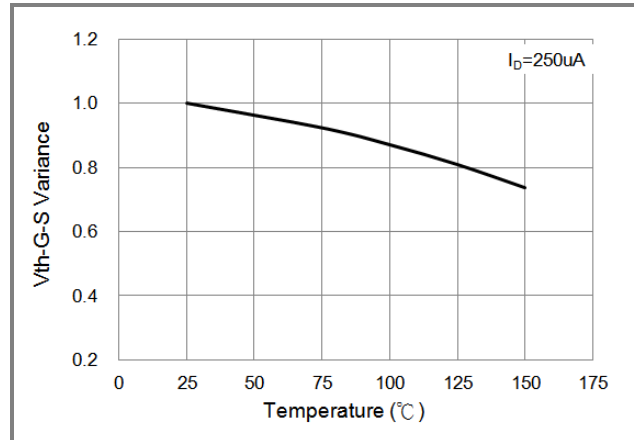


Fig.8 Threshold Voltage Variation with Temperature.

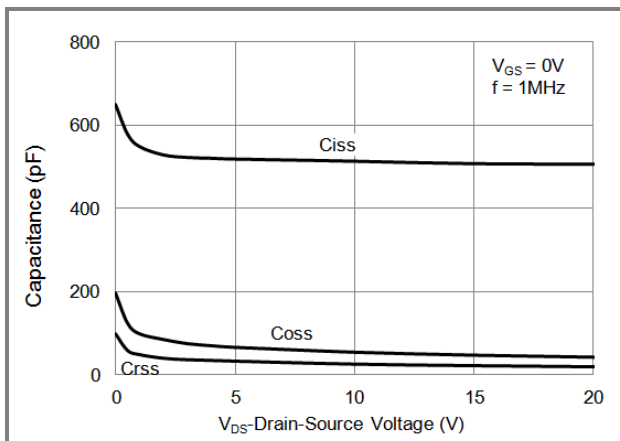


Fig.9 Capacitance vs. Drain-Source Voltage.

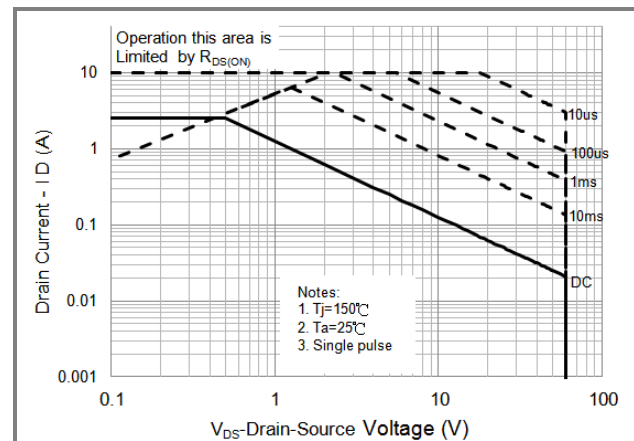


Fig.10 Maximum Safe Operating Area.

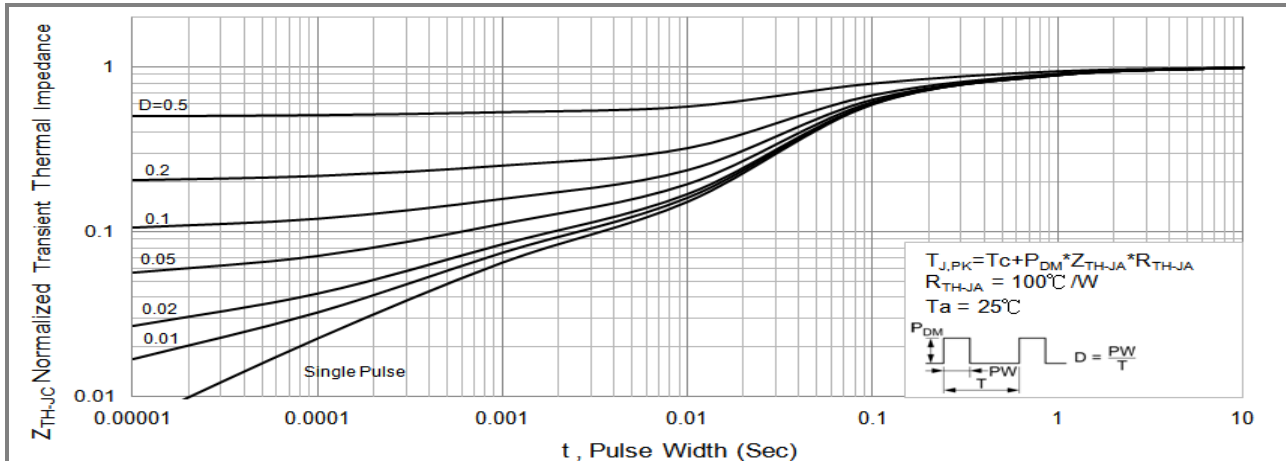


Fig.11 Normalized Transient Thermal Impedance vs. Pulse Width

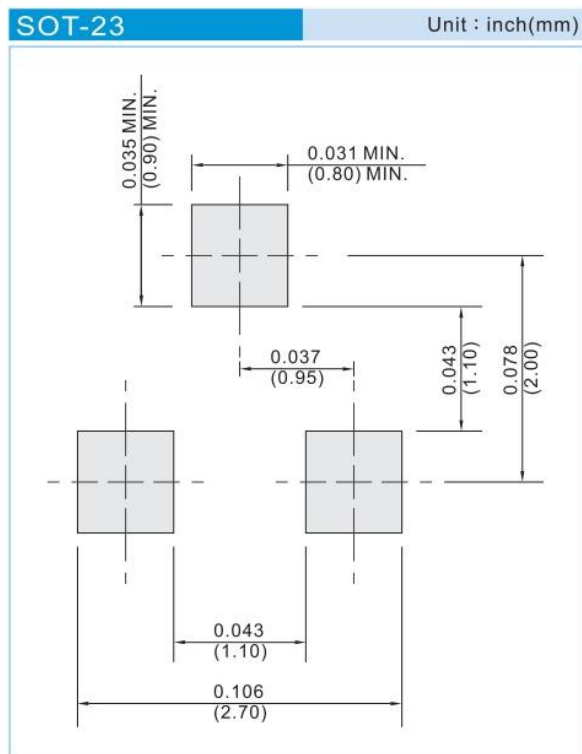


PJA3460

PART NO PACKING CODE VERSION

PART NO PACKING CODE	Package Type	Packing type	Marking	Version
PJA3460_R1_00001	SOT-23	3K pcs / 7" reel	A60	Halogen free
PJA3460_R2_00001	SOT-23	12K pcs / 13" reel	A60	Halogen free

MOUNTING PAD LAYOUT





PJA3460

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