

PJP100N06SA-AU

60V N-Channel Enhancement Mode MOSFET

Voltage

60 V

Current

95 A

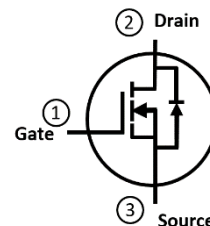
Features

- $R_{DS(ON)}$, $V_{GS}@10V$, $I_D@20A < 6.1m\Omega$
- $R_{DS(ON)}$, $V_{GS}@4.5V$, $I_D@10A < 10m\Omega$
- Excellent FOM
- Logic Level Drive
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : TO-220AB-L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 2.0948 grams

TO-220AB-L



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	
Continuous Drain Current ^(Note 3)	$T_C=25^{\circ}C$	I_D	95	A
	$T_C=100^{\circ}C$		68	
Pulsed Drain Current ^(Note 1)	$T_C=25^{\circ}C$	I_{DM}	345	
Power Dissipation	$T_C=25^{\circ}C$	P_D	100	W
	$T_C=100^{\circ}C$		50	
Continuous Drain Current ^(Note 4)	$T_A=25^{\circ}C$	I_D	15	A
	$T_A=70^{\circ}C$		12.4	
Power Dissipation	$T_A=25^{\circ}C$	P_D	2.4	W
	$T_A=70^{\circ}C$		1.7	
Single Pulse Avalanche Current ^(Note 5)		I_{AS}	27	A
Single Pulse Avalanche Energy ^(Note 5)		E_{AS}	69	mJ
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~175	$^{\circ}C$
Thermal Resistance ^(Note 4)	Junction to Case	$R_{\theta JC}$	1.5	$^{\circ}C/W$
	Junction to Ambient	$R_{\theta JA}$	62.5	

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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	60	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.5	2.1	3	
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A	-	4.9	6.1	mΩ
		V _{GS} =4.5V, I _D =10A	-	7.7	10	
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 6)						
Total Gate Charge	Q _g	V _{DS} =30V, I _D =20A, V _{GS} =10V	-	40	52	nC
Gate-Source Charge	Q _{gs}		-	9.6	-	
Gate-Drain Charge	Q _{gd}		-	8.3	-	
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHz	-	2039	2650	pF
Output Capacitance	C _{oss}		-	695	973	
Reverse Transfer Capacitance	C _{rss}		-	91	-	
Gate resistance	R _g	f=1MHz	-	0.88	-	Ω
Turn-On Delay Time	td _(on)	V _{DS} =30V, I _D =20A, V _{GS} =10V, R _G =3Ω (Note 2)	-	9	-	ns
Turn-On Rise Time	tr		-	35	-	
Turn-Off Delay Time	td _(off)		-	29	-	
Turn-Off Fall Time	tf		-	59	-	
Drain-Source Diode						
Diode Forward Current	I _S	T _C =25 ^o C	-	-	95	A
Pulsed Diode Forward Current	I _{SM}		-	-	345	
Diode Forward Voltage	V _{SD}	I _S =20A, V _{GS} =0V	-	0.85	1.3	V
Reverse Recovery Time	T _{rr}	V _{DD} =30V, V _{GS} =0V	-	37	-	ns
Reverse Recovery Charge	Q _{rr}	I _S =20A, dI _S /dt=100A/us	-	18	-	nC

NOTES :

1. Pulse width ≤ 100us, Duty cycle ≤ 2%.
2. Essentially independent of operating temperature typical characteristics.
3. Chip capability with an R_{θJC}=1.5°C/W.
4. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance.
5. E_{AS} is calculated based on the condition of L=1mH, I_{AS}=12A, V_{DD}=30V, V_{GS}=10V. 100% test at L=0.1mH, I_{AS}=27A in production.
6. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

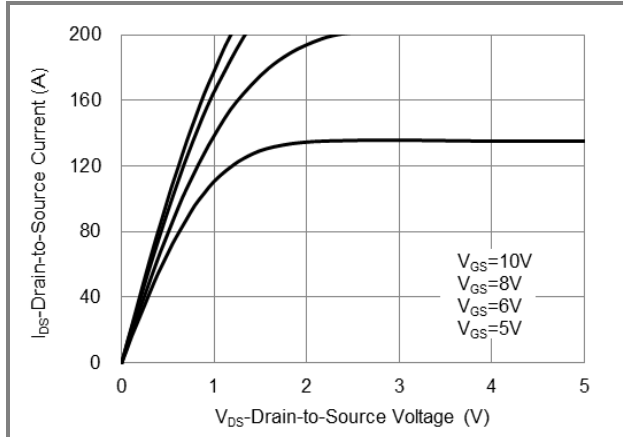


Fig.1 On-Region Characteristics

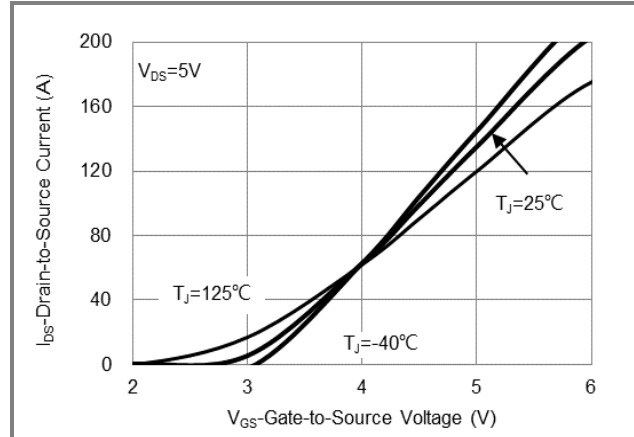


Fig.2 Transfer Characteristics

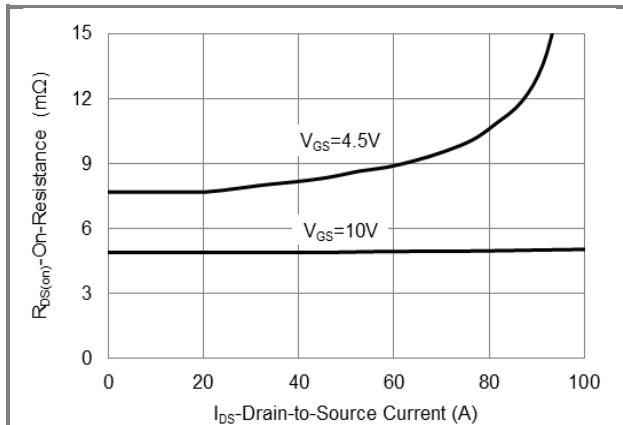


Fig.3 On-Resistance vs. Drain Current

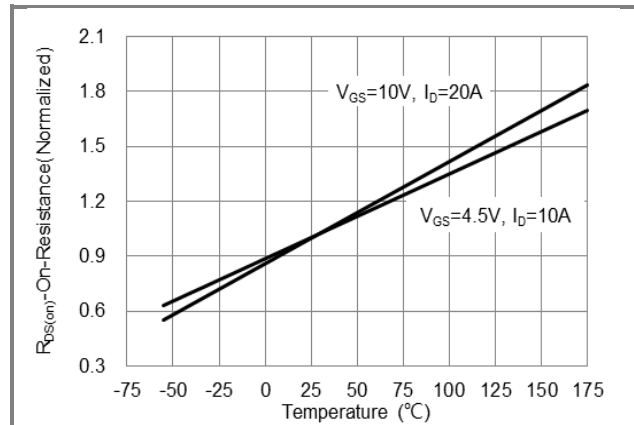


Fig.4 On-Resistance vs. Junction temperature

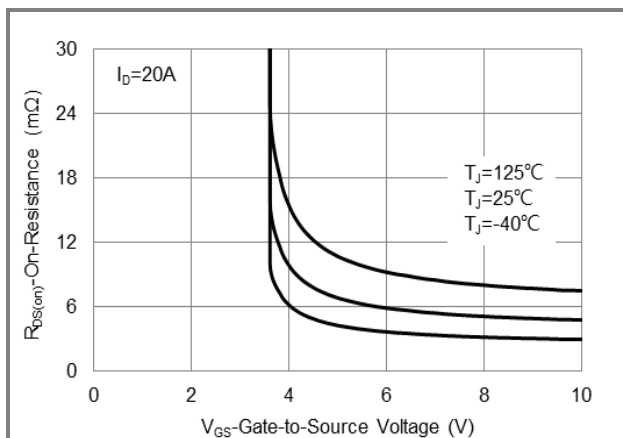


Fig.5 On-Resistance Variation with V_{GS}

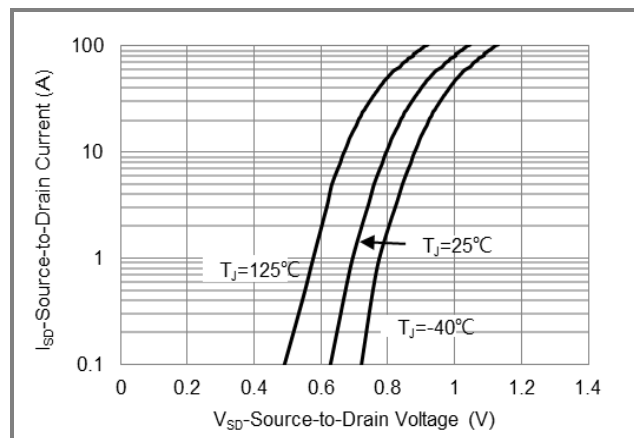
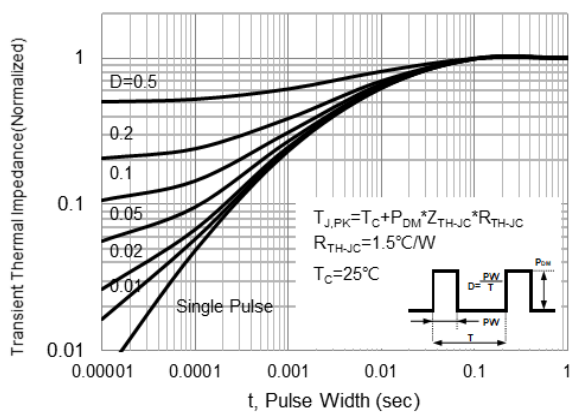
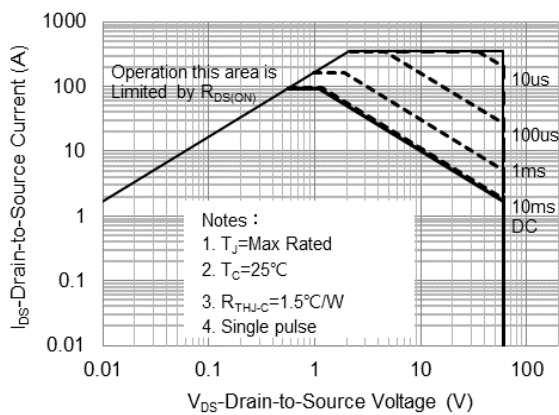
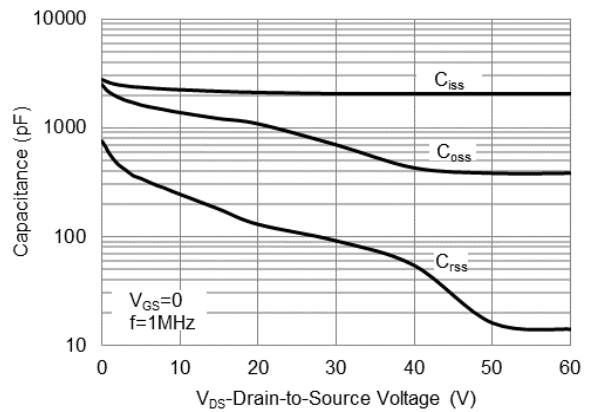
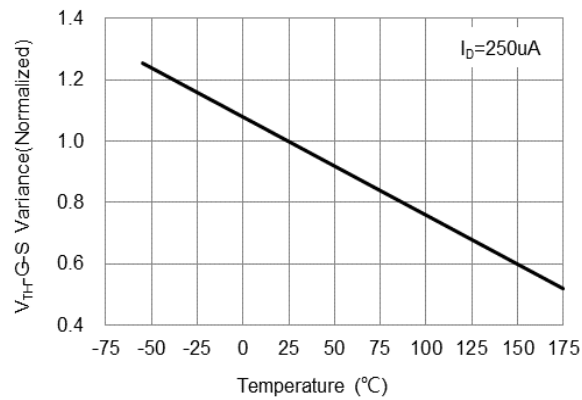
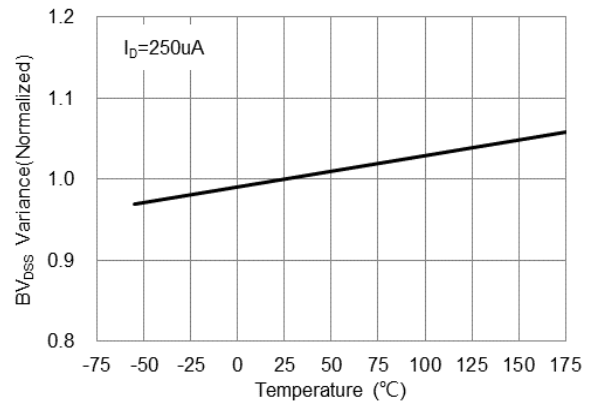
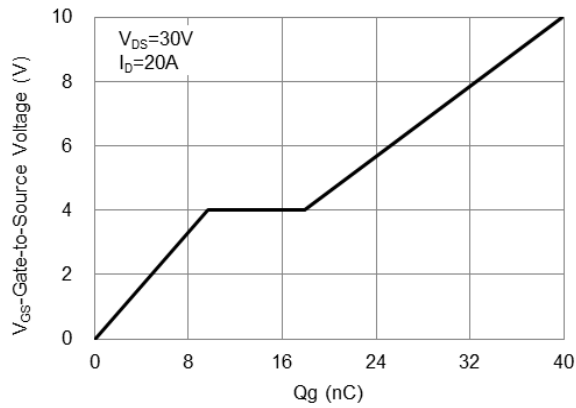


Fig.6 Source-Drain Diode Forward Voltage

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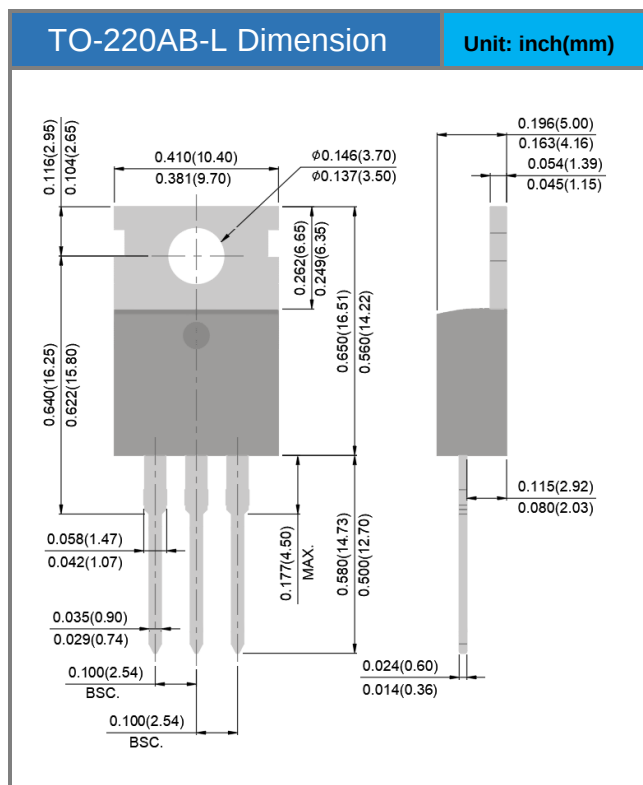


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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PJP100N06SA-AU	TO-220AB-L	50 pcs / Tube	100N06SA

Packaging Information



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