



PJA94N03

30V N-CHANNEL ENHANCEMENT MODE MOSFET

VOLTAGE 30 Volts **CURRENT** 2.9 Amperes

SOT-23 Unit : inch(mm)

FEATURES

- $R_{DS(ON)}, V_{GS}@10V, I_D@3.1A < 57\text{ m}\Omega$
- $R_{DS(ON)}, V_{GS}@4.5V, I_D@2.8A < 94\text{ m}\Omega$
- Advanced Trench Process Technology
- High Density Cell Design For Ultra Low On-Resistance
- Specially Designed for DC/DC Converters
- Low Gate Charge
- Lead free in comply with EU RoHS 2002/95/EC directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: SOT-23 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Apporx. Weight : 0.0003 ounces, 0.0084grams
- Marking : 94

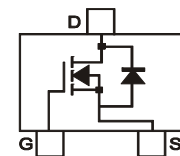
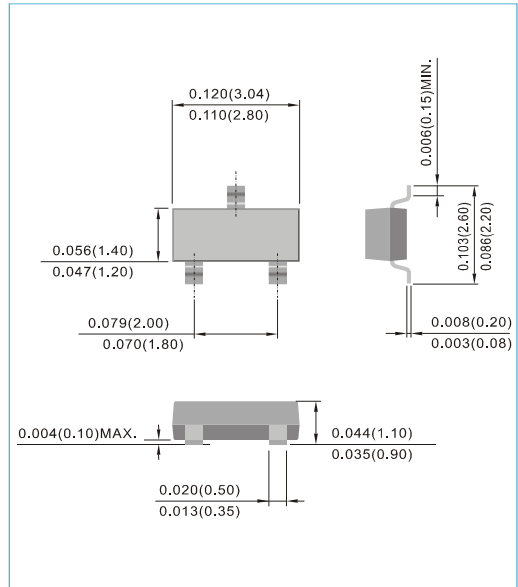


Fig.19 (TOP VIEW)



MAXIMUM RATINGS AND THERMAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER			SYMBOL	LIMIT	UNITS
Drain-Source Voltage			V_{DS}	30	V
Gate-Source Voltage			V_{GS}	± 20	V
Continuous Drain Current	Steady-State	$T_A=25^\circ\text{C}$	I_D	2.9	A
Pulsed Drain Current			I_{DM}	16	A
Power Dissipation (Notes 1)	Steady-State	$T_A=25^\circ\text{C}$	P_D	0.7	W
Typical Thermal Resistance (Notes 1)			$R_{\theta JA}$	111	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range			T_J, T_{STG}	-55 to + 150	$^\circ\text{C}$

NOTES:

1. Mounted on 7.5cm² FR-4 PCB .



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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 =250μA	30	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	2.0	3.0	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3.1A	-	27	57	mΩ
		V _{GS} =4.5V, I _D =2.8A	-	40	94	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	-	-	0.5	μA
Gate -Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Diode Forward Voltage	V _{SD}	I _S =1.25A, V _{GS} =0V	-	0.9	1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =15V, I _D =3.1A V _{GS} =10V	-	12.63	-	nC
Gate-Source Charge	Q _{gs}		-	2.25	-	
Gate-Drain Charge	Q _{gd}		-	2.62	-	
Turn-On Delay Time	td _{on}	V _{DS} =15V, V _{GS} =10V, R _G =6Ω, R _L =5Ω	-	11.6	-	ns
Turn-Off Delay Time	td _{off}		-	35.2	-	
Turn-On Rise Time	t _r		-	19.6	-	
Turn-Off Fall Time	t _f		-	8.2	-	
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V f=1.0MHz	-	607	-	pF
Output Capacitance	C _{oss}		-	66	-	
Reverse Transfer Capacitance	C _{rss}		-	59	-	



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RATING AND CHARACTERISTIC CURVES

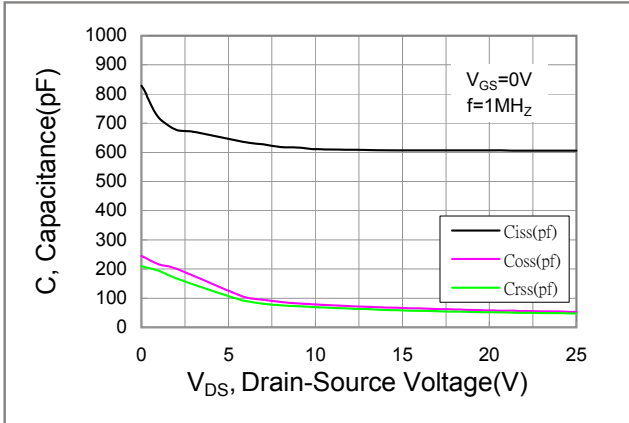


Fig.1 Capacitance Variation

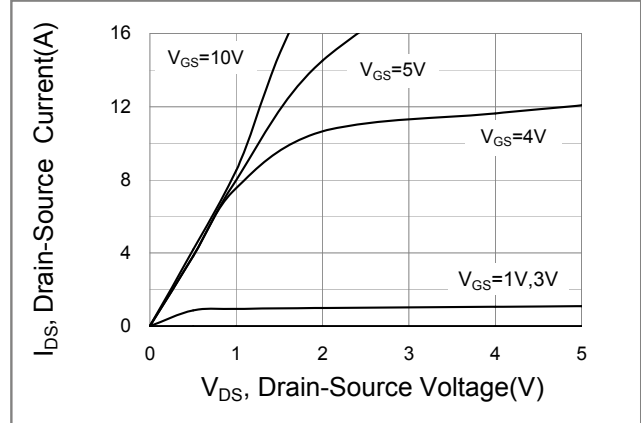


Fig.2 Drain-Source Current VS Drain-Source Voltage

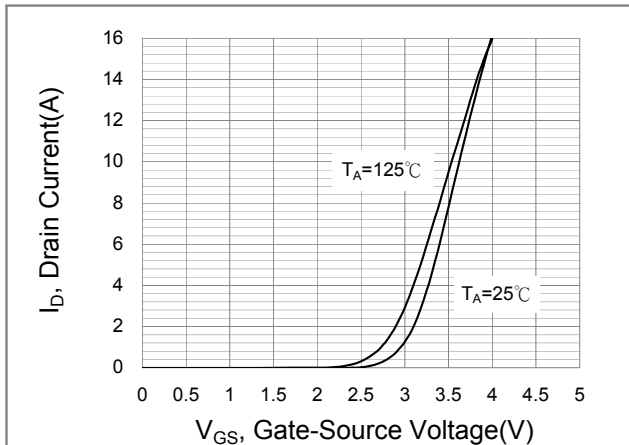


Fig.3 Drain Current VS Gate-Source Voltage

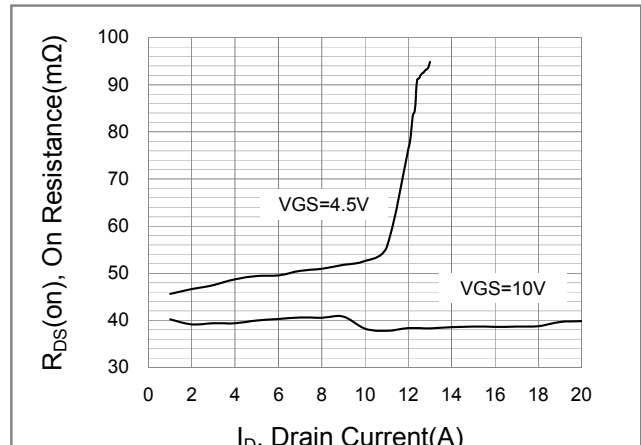


Fig.4 On-Resistance VS Drain Current

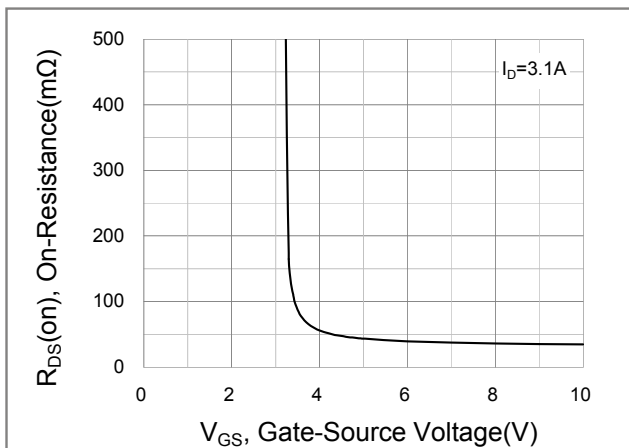


Fig.5 On-Resistance VS Gate-Source Voltage

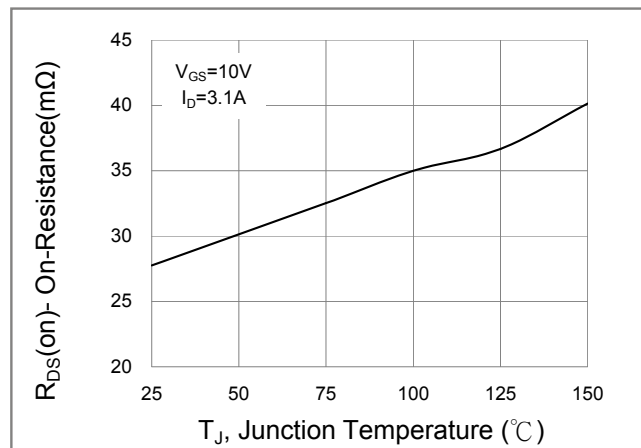


Fig.6 On-Resistance VS Junction Temperature



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RATING AND CHARACTERISTIC CURVES

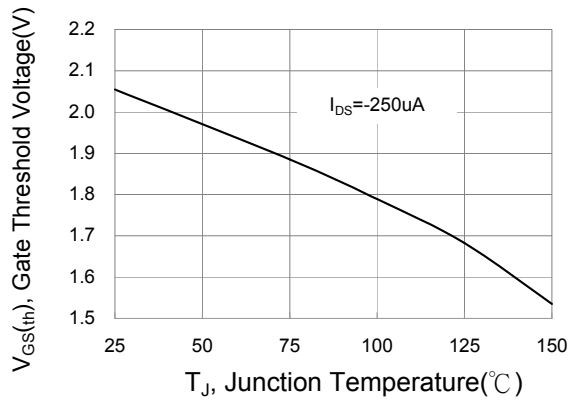


Fig.7 Gate Threshold Voltage VS Junction Temperature

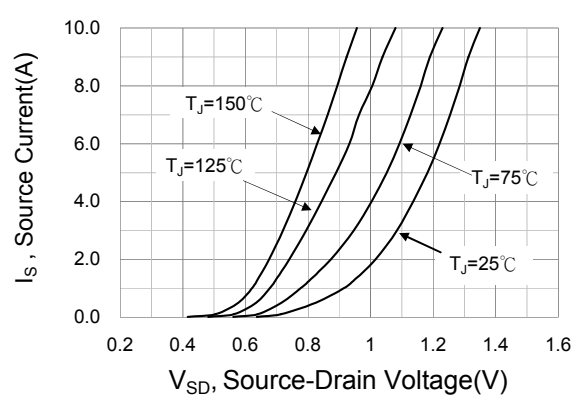
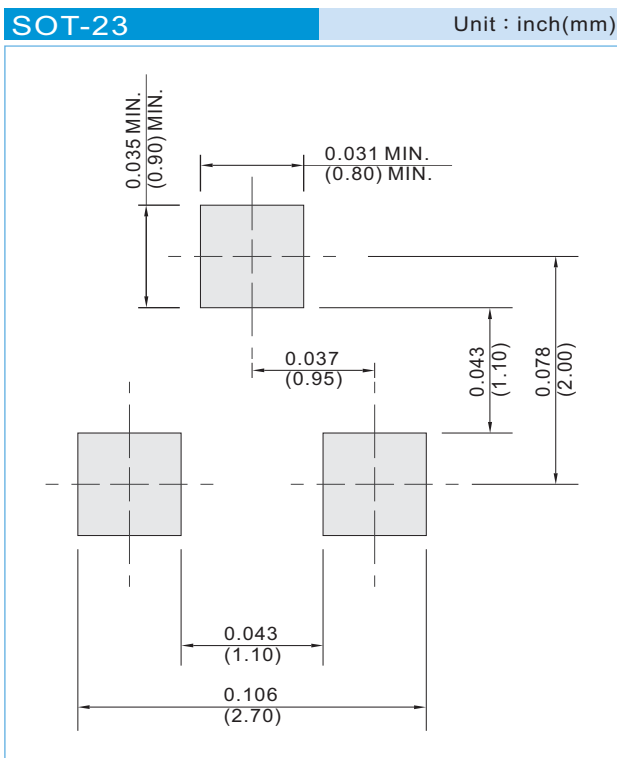


Fig.8 Body diode forward voltage



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 12K per 13" plastic Reel
 - T/R - 3K per 7" plastic Reel

LEGAL STATEMENT

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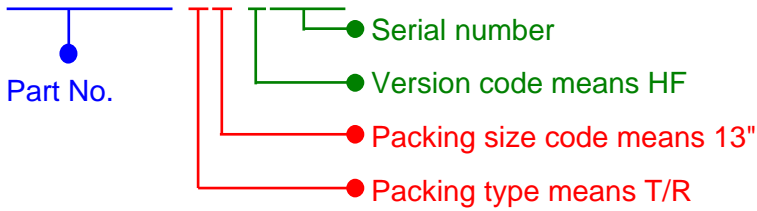
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For example :

RB500V-40_R2_0000%



Part No_packing code_Version

D>5 - (B\$' SF %S\$\$\$\$%

D>5 - (B\$' SF &S\$\$\$\$%

D>5 - (B\$' S\$\$\$\$%''

Packing Code XX				Version Code XXXXX		
Packing type	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th Code
T/B	A	N/A	0	HF	0	serial number
T/R	R	7"	1	RoHS	1	serial number
B/P	B	13"	2			
T/P	T	26mm	X			
TRR	S	52mm	Y			
TRL	L	PBCU	U			
FORMING	F	PBCD	D			