

BRCs250N03YAQ

Rev.A Jun.-2023



DATA SHEET

PDFN 3×3-8L N MOS

Double N-CHANNEL MOSFET in a PDFN 3×3-8L Plastic Package.

N-channel

VDS(V)=30V

ID=20A

RDS(ON)<25mΩ (VGS=10V)

RDS(ON)<40mΩ (VGS=4.5V)

AEC-Q101

Qualified to AEC-Q101 Standards for High Reliability, HF Product.

A

A

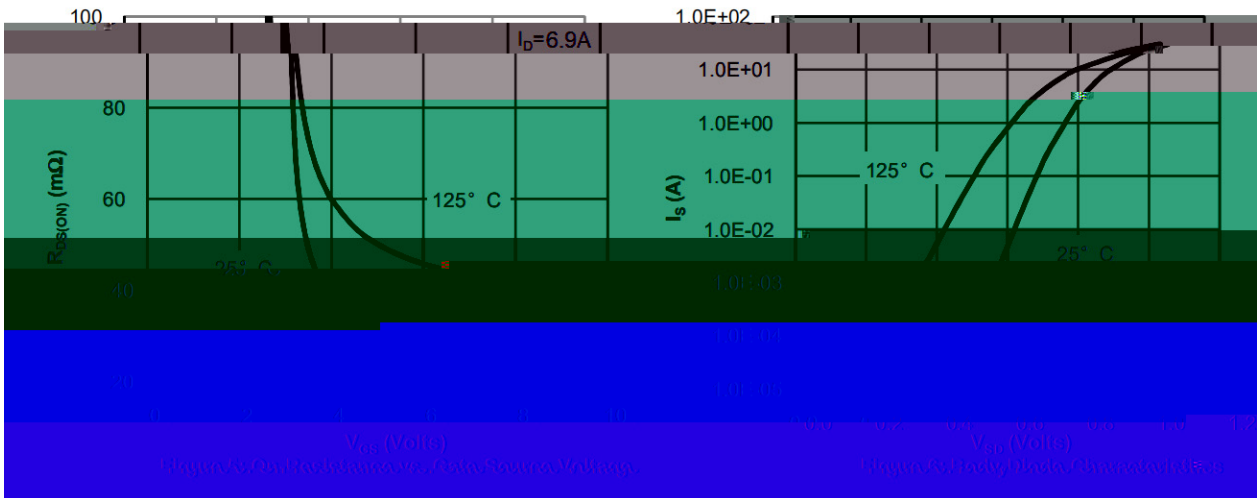
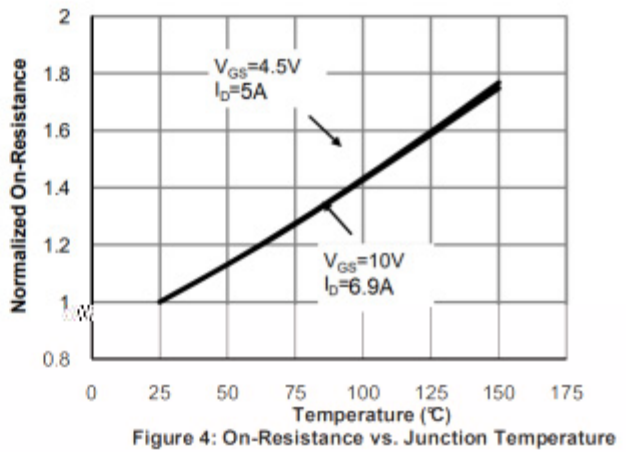
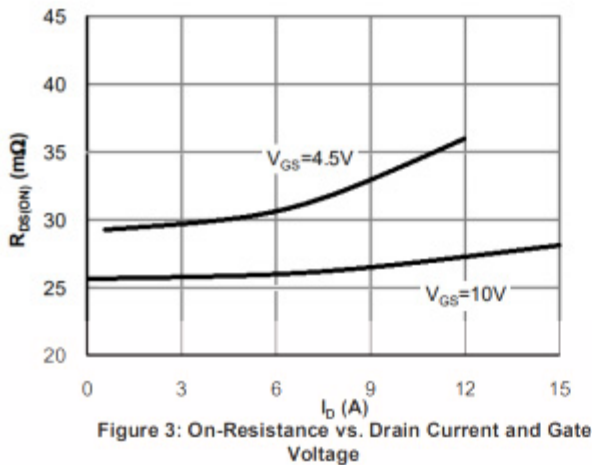
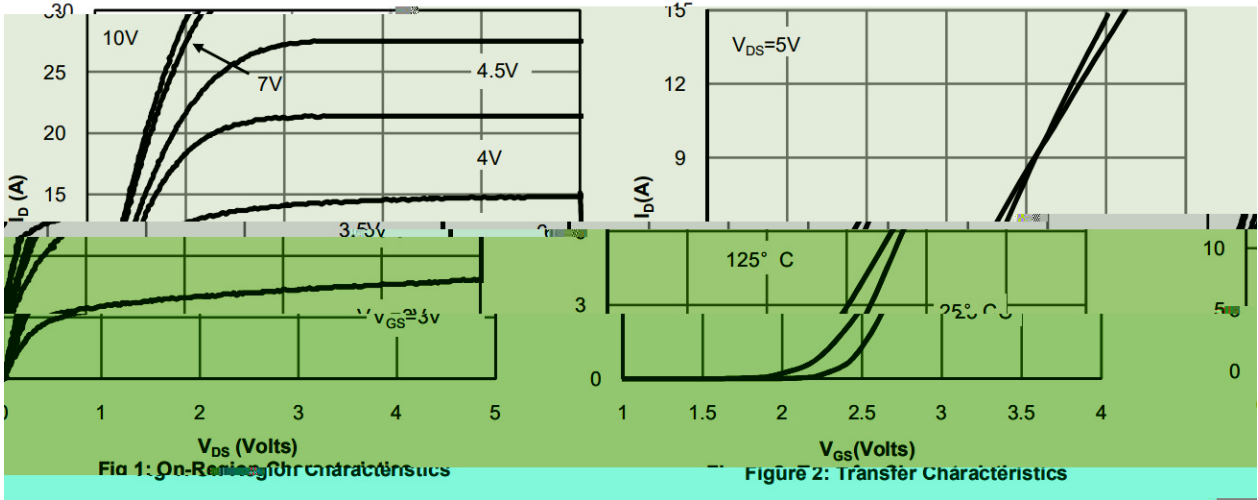
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	$I_D (T_A=25^\circ C)$	20	A
Power Dissipation	$P_D (T_A=25)$	11.2	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	
Maximum Junction-to-Case	$R_{\theta JC}(\text{Steady-State})$	11.2	/W
Maximum Junction-to-Ambient	$R_{\theta JA}(\text{Steady-State})$	45	/W

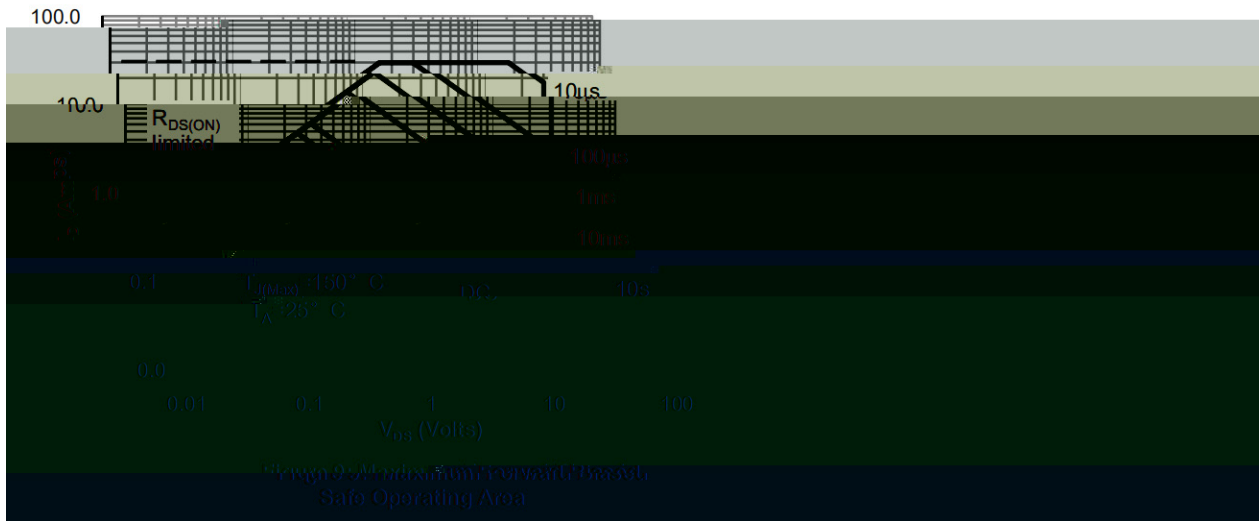
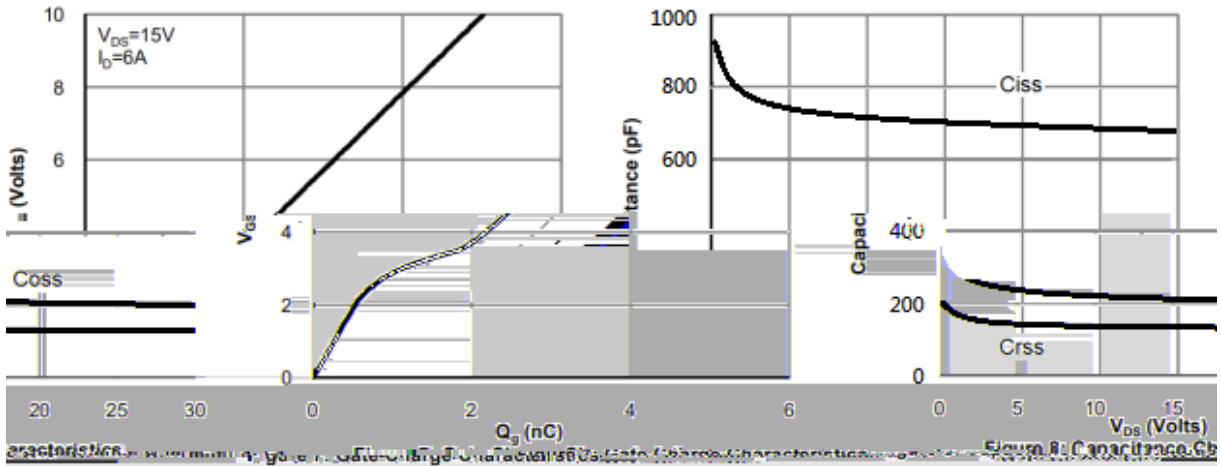
Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250 A$	30	35		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1.0	A
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250 A$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=6.9A$		20	25	m
		$V_{GS}=4.5V$ $I_D=5.0A$		28	40	m
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1.0A$		0.78	1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		690		pF
Output Capacitance	C_{oss}			200		pF
Reverse Transfer Capacitance	C_{rss}			130		pF
Gate resistance	R_g	$V_{DS}=0V$ $f=1.0MHz$ $V_{GS}=0V$		2.7		
Total Gate Charge(10V)	Q_g	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=6A$		5.2		nC
Total Gate Charge(4.5V)				2.5		nC
Gate-Source Charge	Q_{gs}			0.8		nC
Gate-Drain Charge	Q_{gd}			1.3		nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15 V$ $V_{GS}=10V$ $R_L=2.5$ $R_{GEN}=3$		4.5		ns
Turn-On Rise Time	t_r			2.5		ns
Turn-Off Delay Time	$t_{d(off)}$			14.5		ns
Turn-Off Fall Time	t_f			3.5		ns

/ Electrical Characteristic Curve



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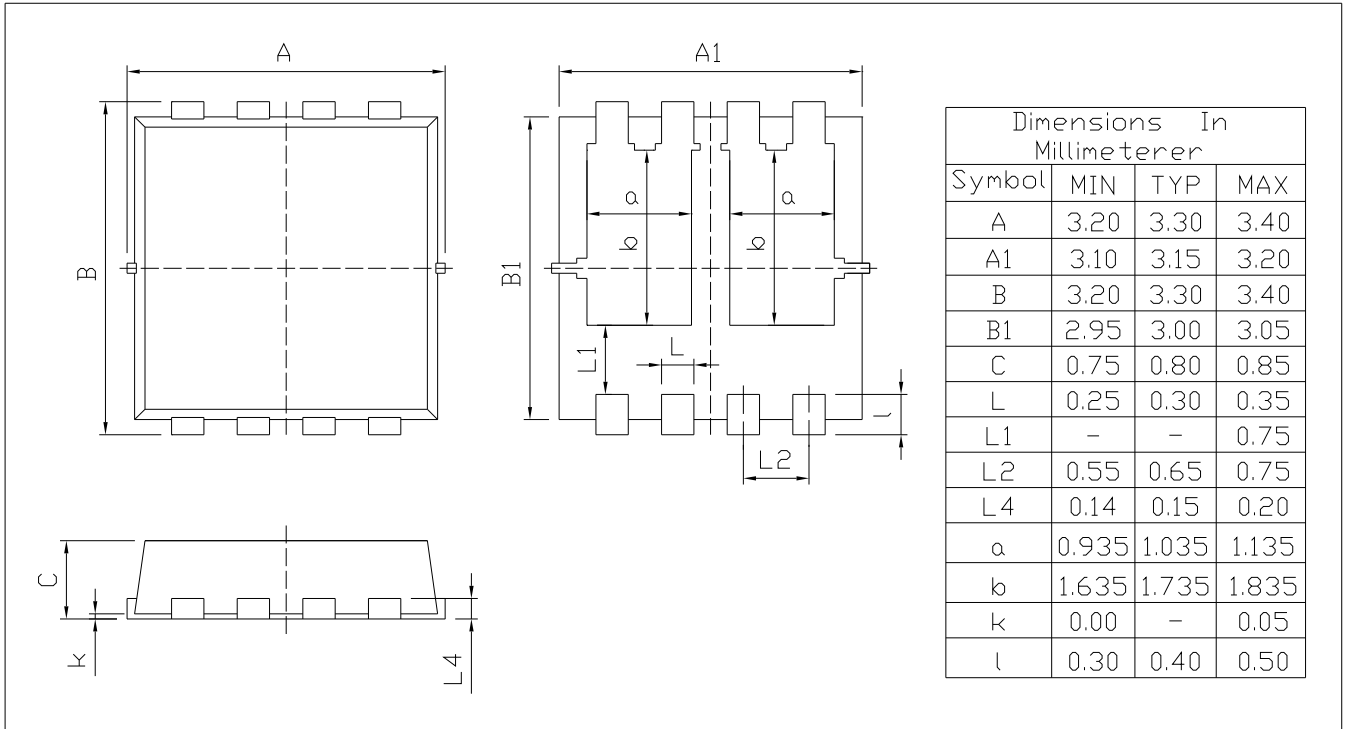
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/ Package Dimensions

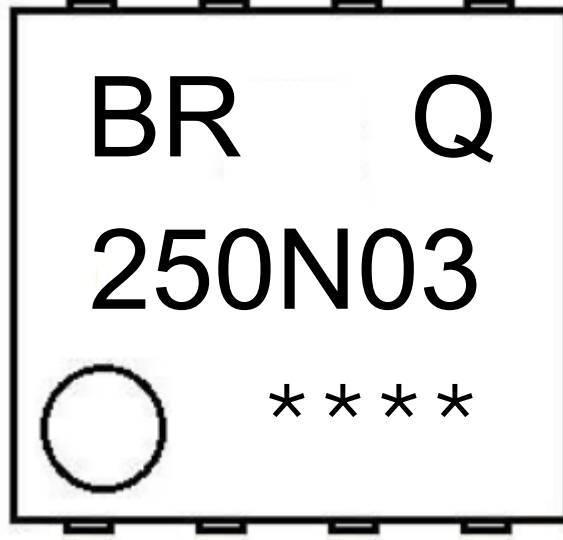
PDFN3X3-8L

Unit:mm



Rev.00 202011

/ Marking Instructions



BR

Q

250N03

Note:

BR: Company Code

Q: Automobile halogen-free product Code

250N03: Product Type Code

****: Lot No. Code, code change with Lot No

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