

BRCS080N04ZB

Rev.A May.-2022



DATA SHEET



/ Descriptions

DFN3×3A-8L 塑封封装 N 沟道 MOS 场效应管。

N-Channel Enhancement Mode Field Effect Transistor in a DFN3×3A-8L Plastic Package.

/ Features

$V_{DS} (V) = 40V$

$I_D = 40A (V_{GS} = \pm 20V)$

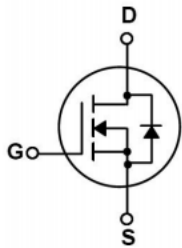
无卤产品。HF Product.

/ Applications

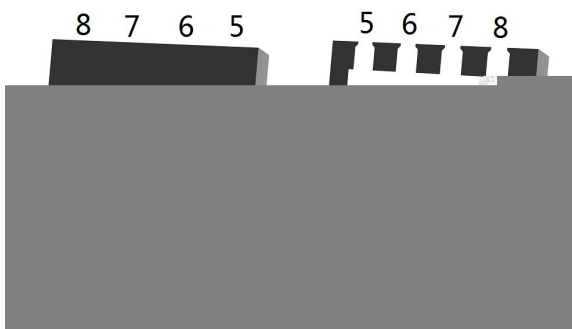
用于低压电路如：汽车电路、DC/DC 转换、便携式产品的电源高效转换。

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

/ Equivalent Circuit



/ Pinning



出脚	定义
Pin1	S
Pin2	S
Pin3	S
Pin4	G
Pin5	D
Pin6	D
Pin7	D
Pin8	D

/ Marking

见印章说明。See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	40	V
Drain Current		$I_D(T_c=25^{\circ}C)$	40	A
Drain Current - Pulsed		I_{DM}	105	A
Gate-Source Voltage		V_{GS}	± 20	V
Avalanche Current		I_{AS}	18.3	A
Single Pulsed Avalanche Energy		E_{AS}	117	mJ
Power Dissipation		$P_D(T_c=25^{\circ}C)$	27	W
Junction Temperature Range		T_j	150	$^{\circ}C$
Storage Temperature Range		T_{stg}	-55~150	$^{\circ}C$
Maximum Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$	25	$^{\circ}C/W$
	Steady-State		55	
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	4.6	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40	48		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$ $V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20.0A$		8.2	9.5	m Ω
		$V_{GS}=4.5V$ $I_D=10.0A$		12.3	14	m Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.6	2.5	V
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_F=1.0A$		0.73	1.2	V
Signal Source Resistance	R_g	$f=1MHz$		1.92		Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1570		pF
Output Capacitance	C_{oss}			490		
Reverse Transfer Capacitance	C_{rss}			120		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=20V$ $V_{GS}=10V$ $R_L=1.0\Omega$ $R_{GEN}=3\Omega$		7.5		ns
Turn-On Rise Time	t_r			2		
Turn-Off Delay Time	$t_{d(off)}$			23		
Turn-Off Fall Time	t_f			3		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{DS}=20V$ $V_{GS}=4.5V$ $I_D=20A$		20		nC
Total Gate Charge	$Q_{g(4.5V)}$			8.5		
Gate-Source Charge	Q_{gs}			5.5		
Gate-Drain Charge	Q_{gd}			3		

/ Electrical Characteristic Curve

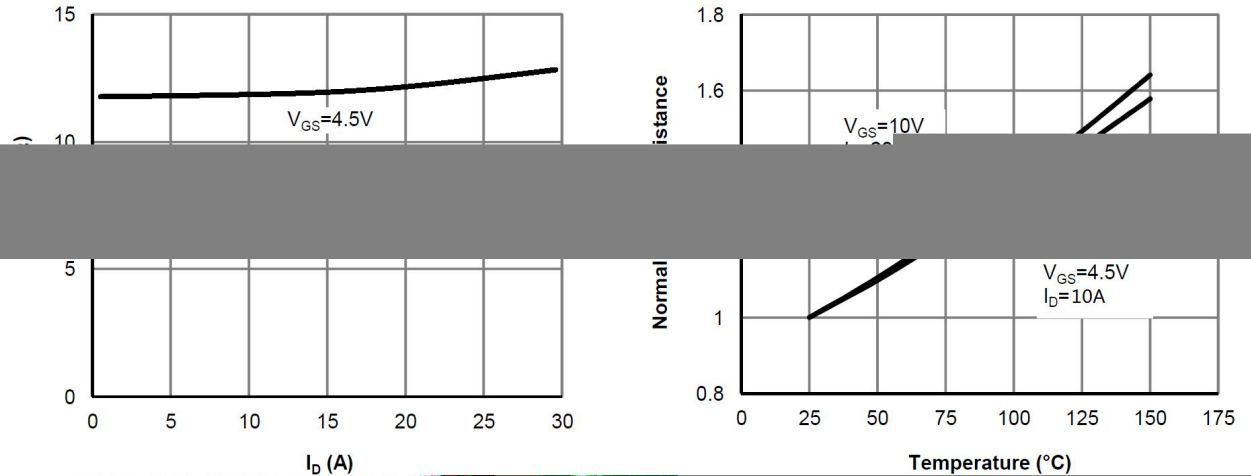
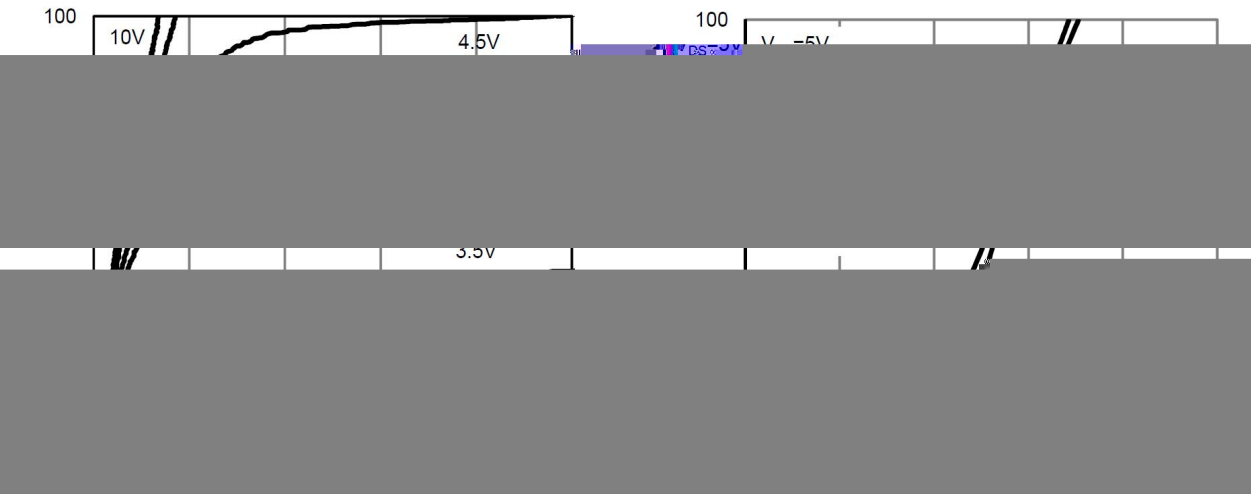
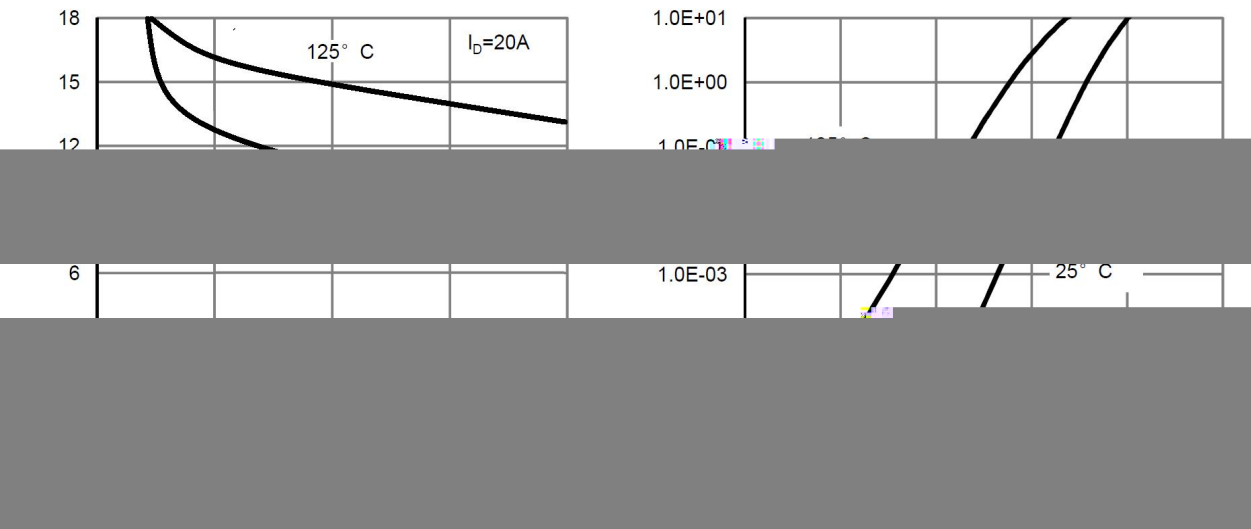
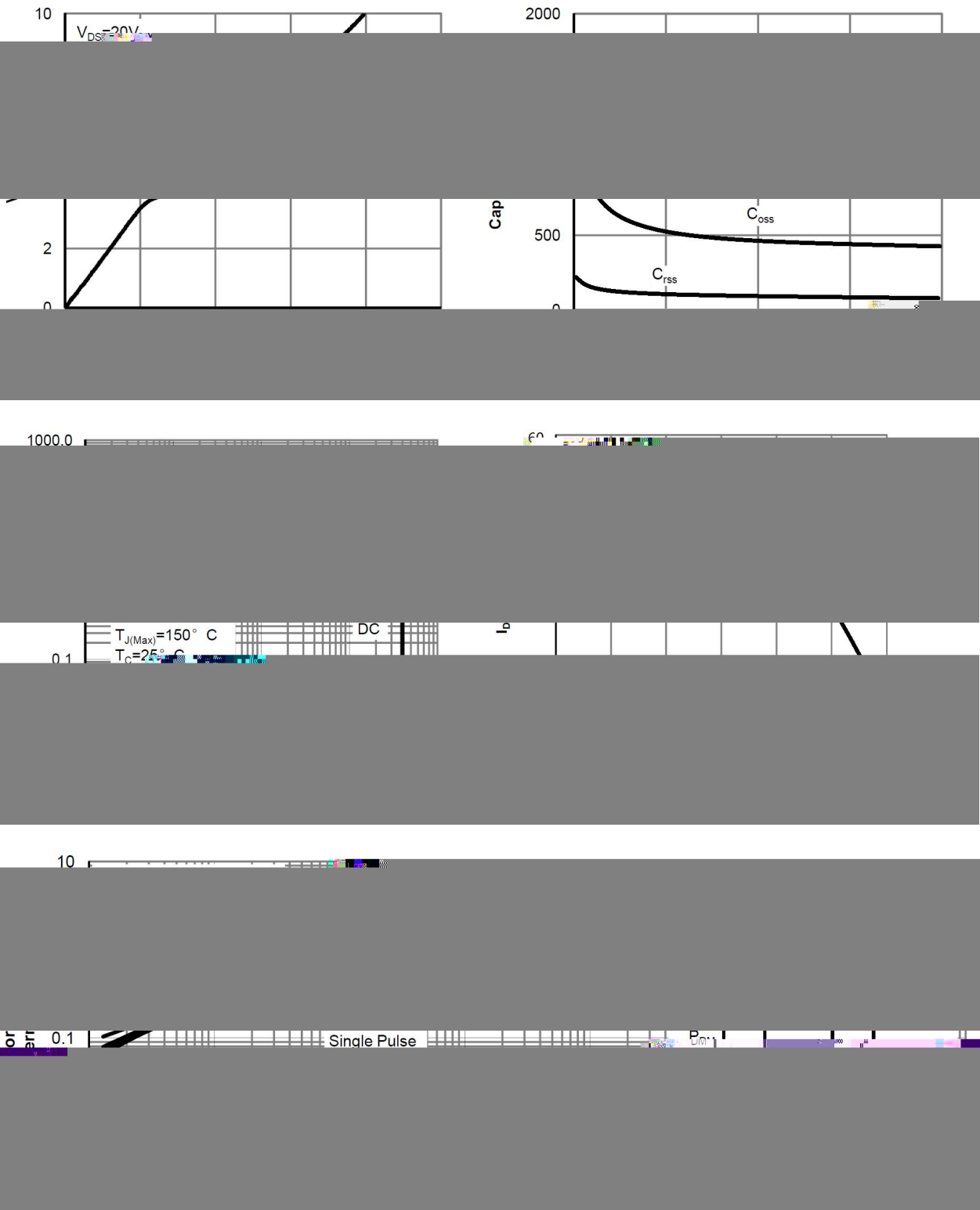


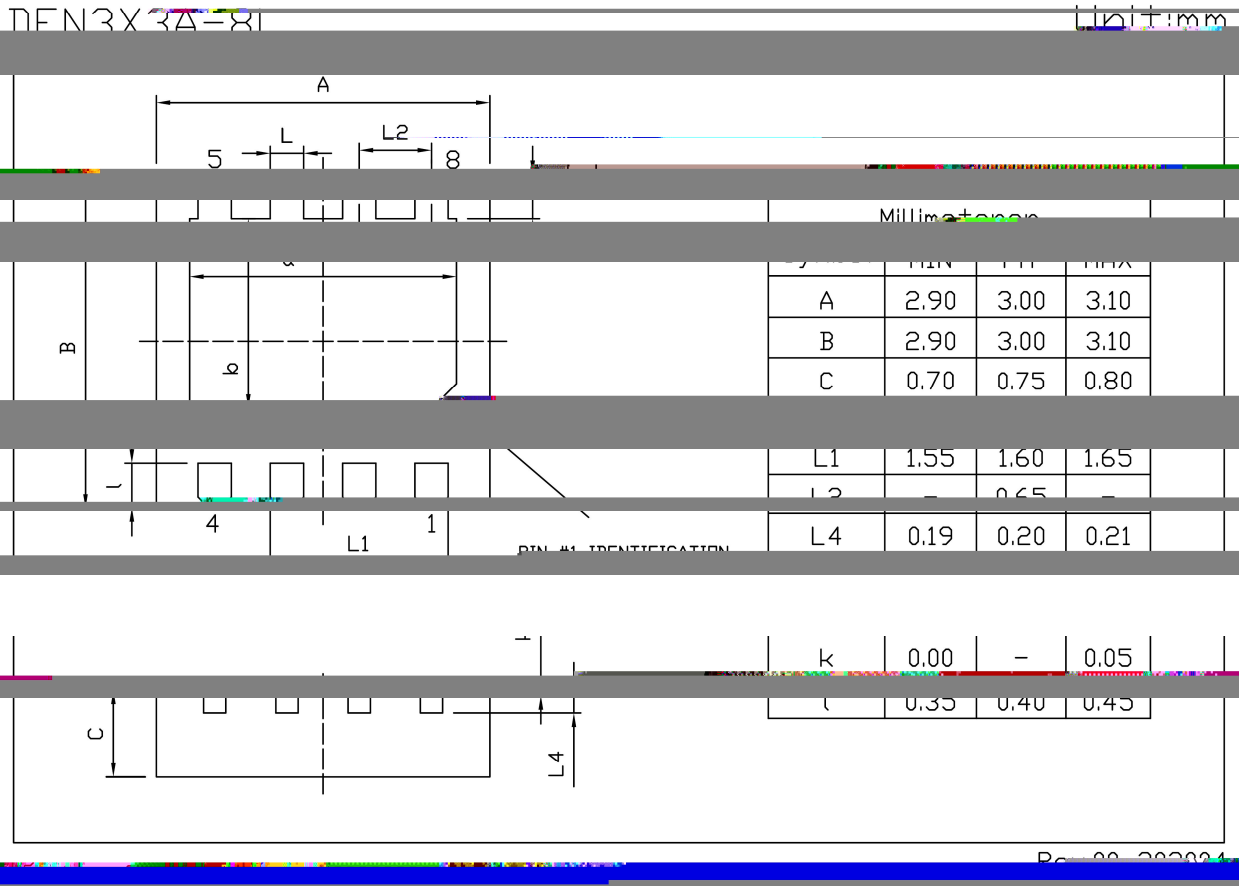
Figure 3: On-Resistance vs. Drain Current



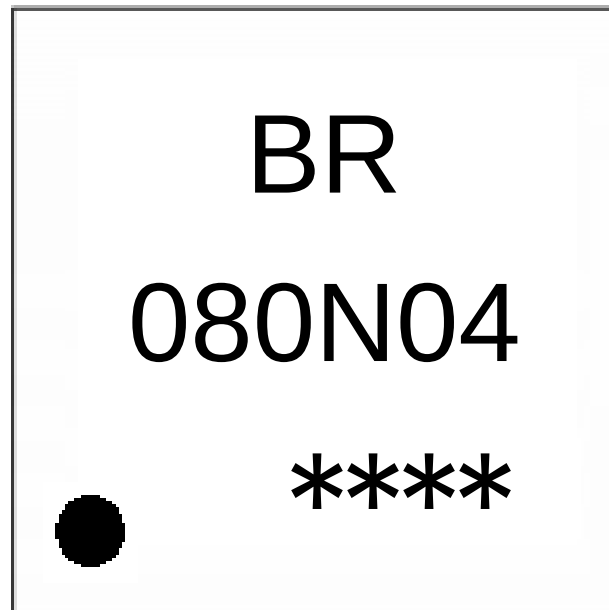
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

080N04

Note:

BR: Company Code.

080N04: Product Type

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



() / Temperature Profile for IR Reflow Soldering(Pb-Free)

