

BRCS080N04ZB

Rev.A May.-2022



DATA SHEET



/ Descriptions

DFN3×3A-8L N MOS

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

/ Features

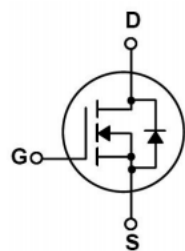
- $V_{DS} (V) = 40V$
- $I_D = 40A (V_{GS} = \pm 20V)$
 - HF Product.

/ Applications

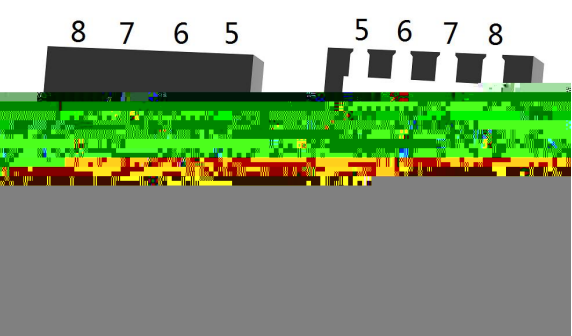
DC/DC

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

See Marking Instructions.

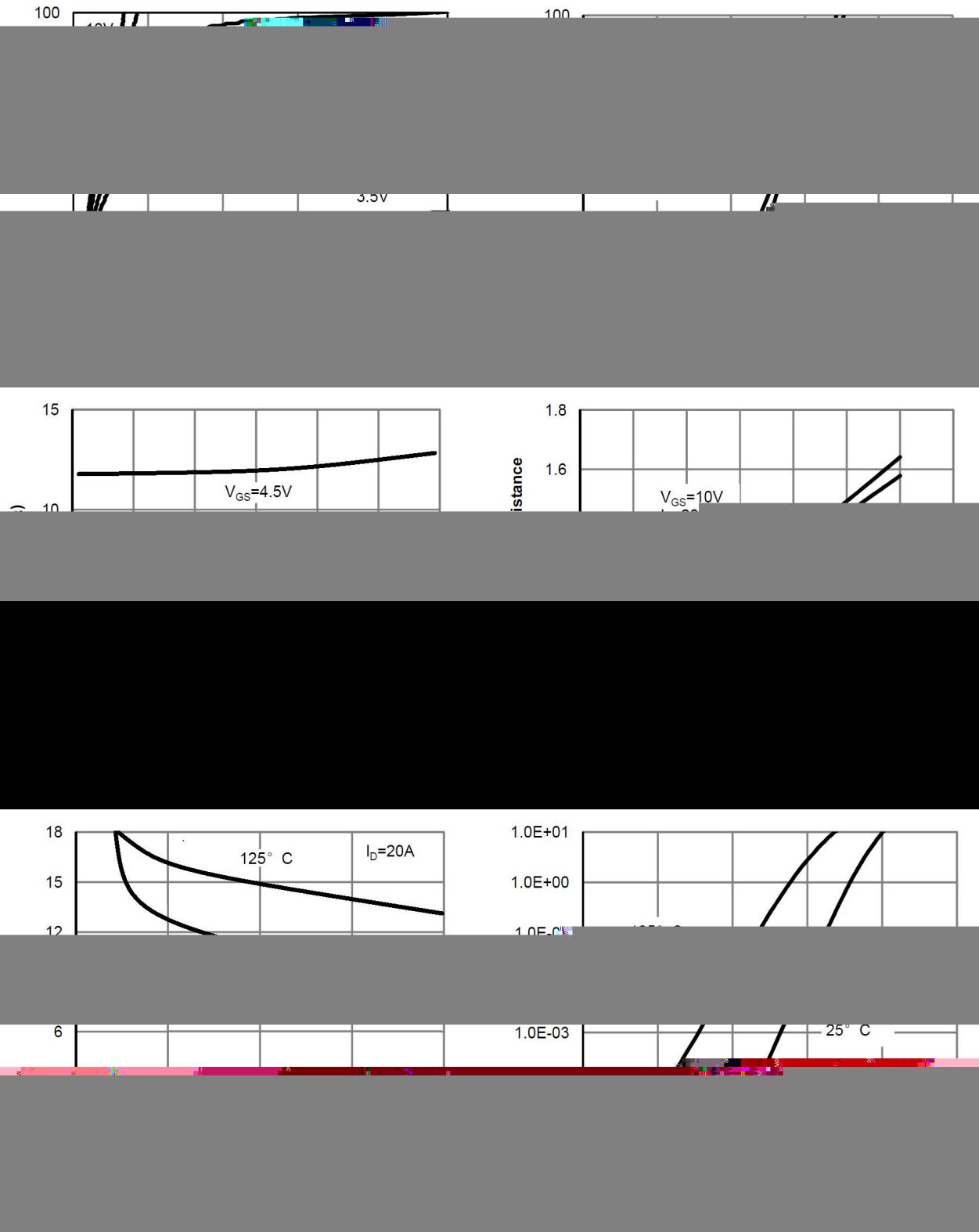
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	40	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	40	A
Drain Current - Pulsed		I_{DM}	105	A
Gate-Source Voltage		V_{GS}	± 20	V
Avalanche Current		I_{AS}	18.3	A
Single Pulsed Avalanche Energy		E_{AS}	117	mJ
Power Dissipation		$P_D(T_c=25^\circ\text{C})$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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}$	$I_D=250\mu\text{A}$	40	48		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40\text{V}$	$V_{GS}=0\text{V}$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$	$V_{DS}=0\text{V}$			± 0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$	$I_D=20.0\text{A}$		8.2	9.5	m Ω
		$V_{GS}=4.5\text{V}$	$I_D=10.0\text{A}$		12.3	14	m Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu\text{A}$	1.0	1.6	2.5	V
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$	$I_F=1.0\text{A}$		0.73	1.2	V
Signal Source Resistance	R_g	$f=1\text{MHz}$			1.92		Ω

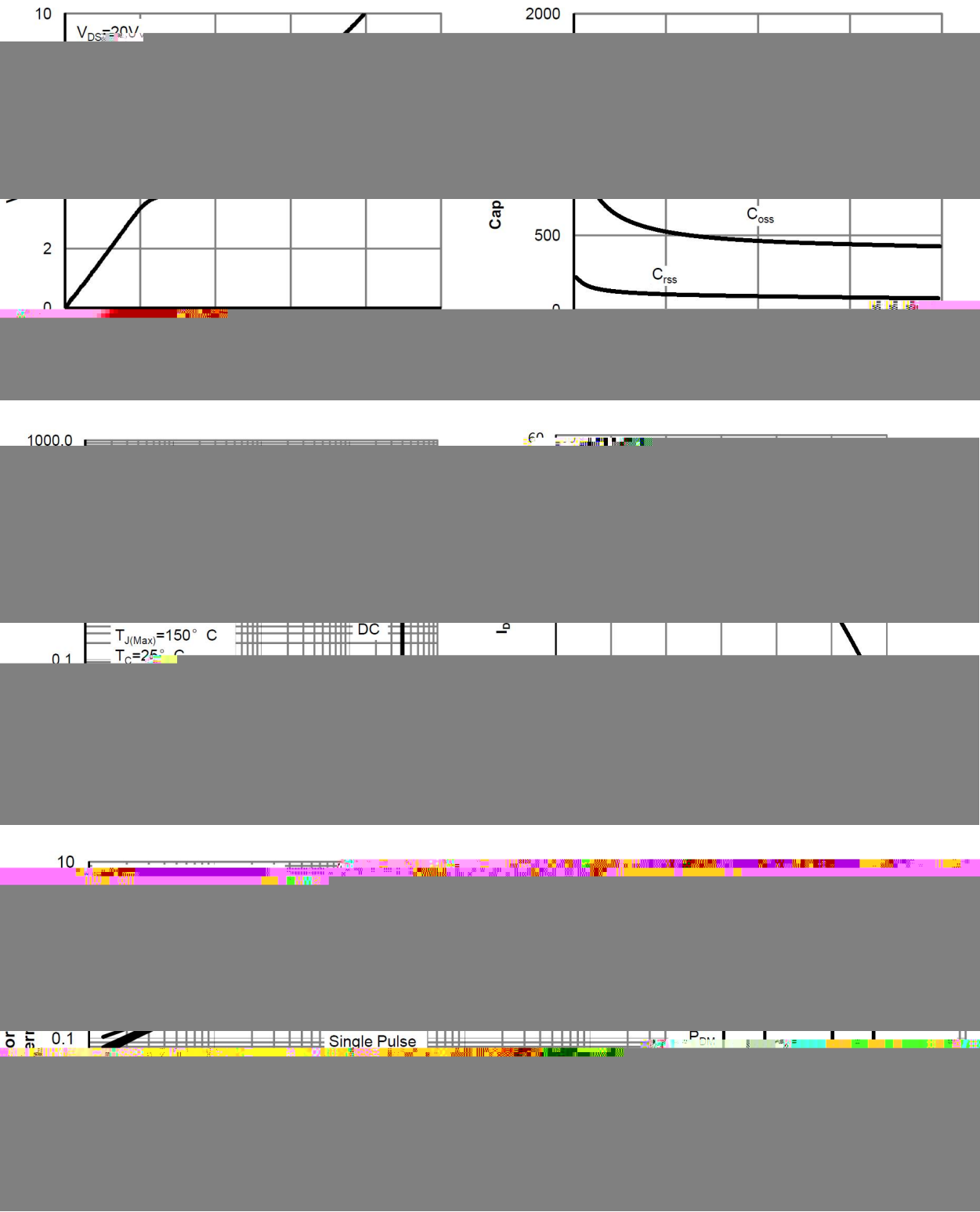
/ Electrical Characteristics(Ta=25)

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		

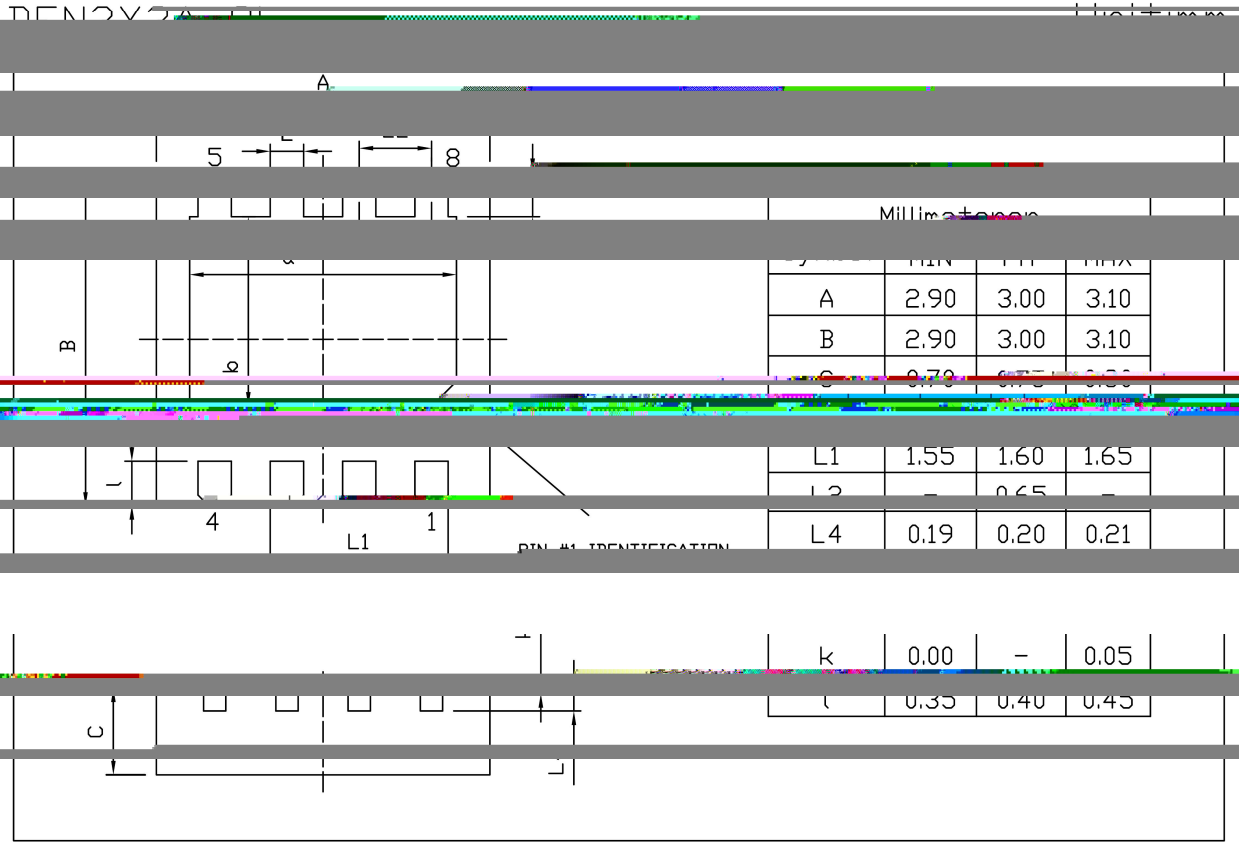
/ Electrical Characteristic Curve



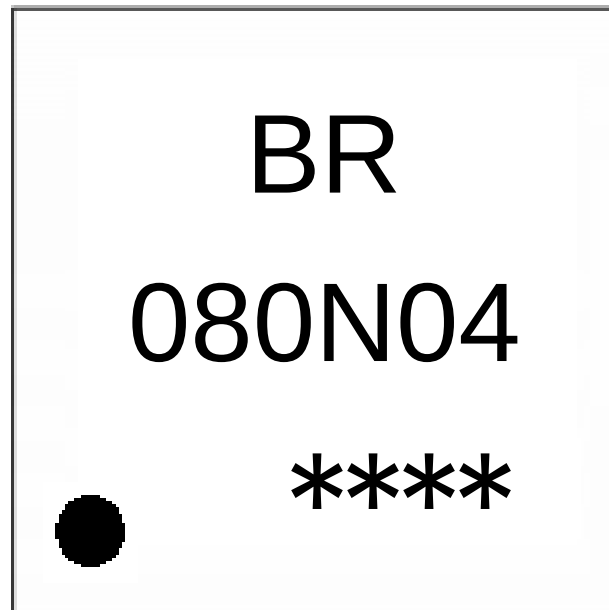
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

080N04

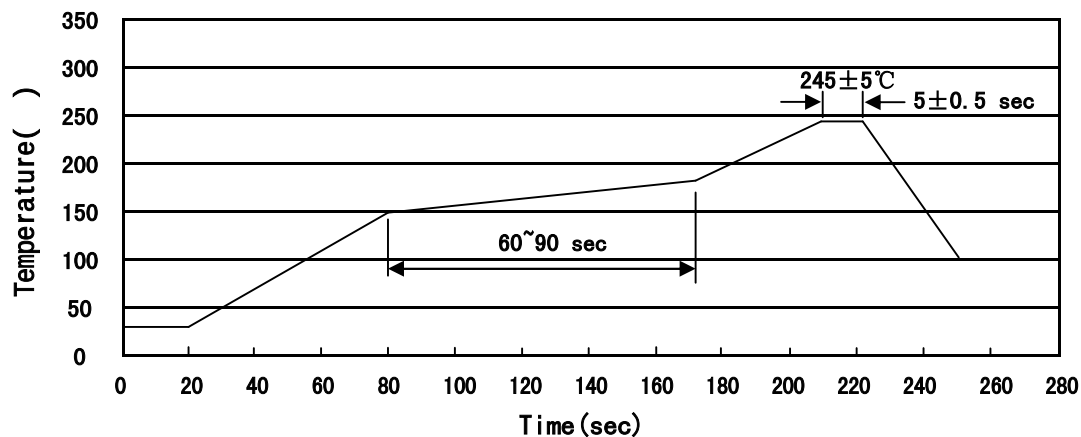
Note:

BR: Company Code.

080N04: Product Type

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

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



Note:

- | | | | | | |
|---|-------|-----|----|-----------|--|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180°C, Time:60~90sec. |
| 2 | 245±5 | | | 5±0.5sec; | 2.Peak Temp.:245±5°C, Duration:5±0.5sec. |
| 3 | | | 2 | 10°C/sec. | 3. Cooling Speed: 2~10°C/sec. |

/ Resistance to Soldering Heat Test Conditions

260±5°C

10±1 sec.

Temp.:260±5°C

Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box	Outer Box
DFN3×3A-8L	5,000	2	10,000	6	60,000	13" ×12	360×360×50	380×335×366

/ Notices