

## / Revised record

| A | 2020.05.27 | All | BRCS200N04DSC<br>AOS-AONR32320C                                                     |  |  |
|---|------------|-----|-------------------------------------------------------------------------------------|--|--|
| B | 2021-6-9   | 1   |  |  |  |
|   |            |     |                                                                                     |  |  |
|   |            |     |                                                                                     |  |  |
|   |            |     |                                                                                     |  |  |
|   |            |     |                                                                                     |  |  |
|   |            |     |                                                                                     |  |  |
|   |            |     |                                                                                     |  |  |
|   |            |     |                                                                                     |  |  |
|   |            |     |                                                                                     |  |  |



DFN 3\*3A-8L                      N              MOS

N-Channel Enhancement Mode Field Effect Transistor in a DFN 3\*3A-8L Plastic Package.

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

$I_D = 12 A (V_{GS} = \pm 20V)$

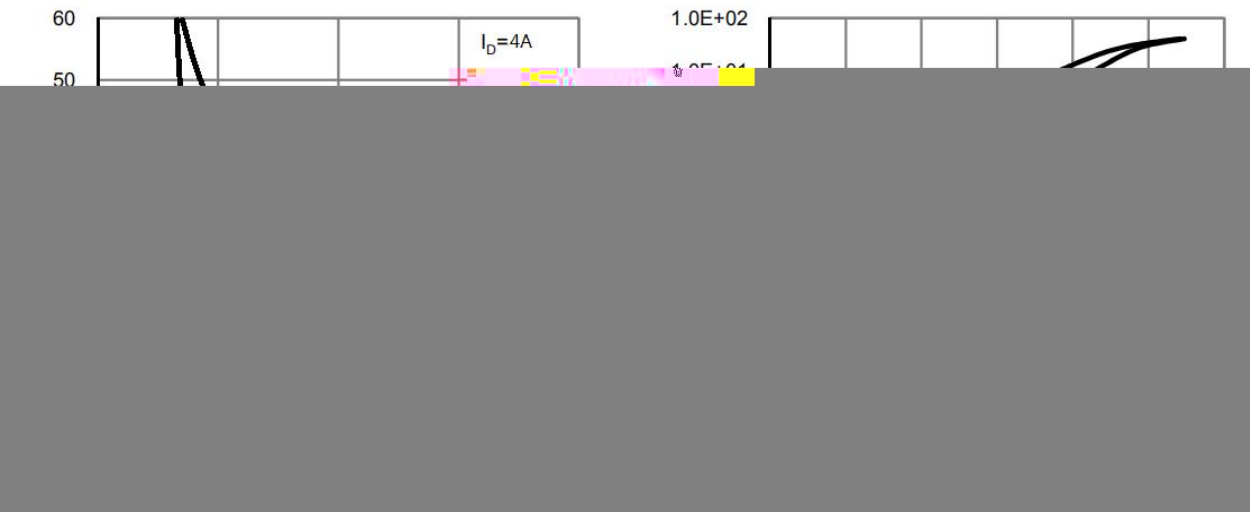
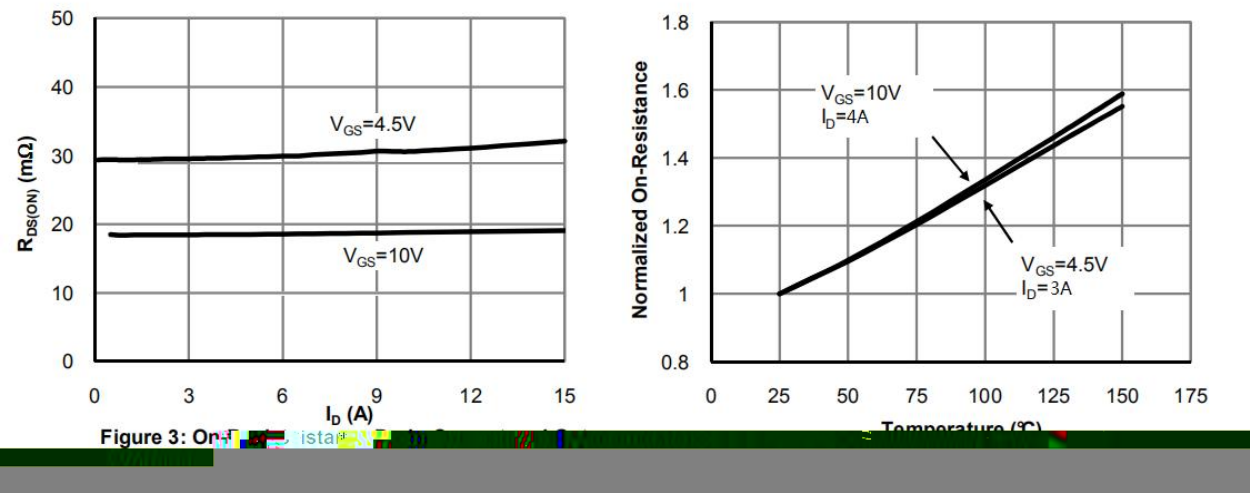
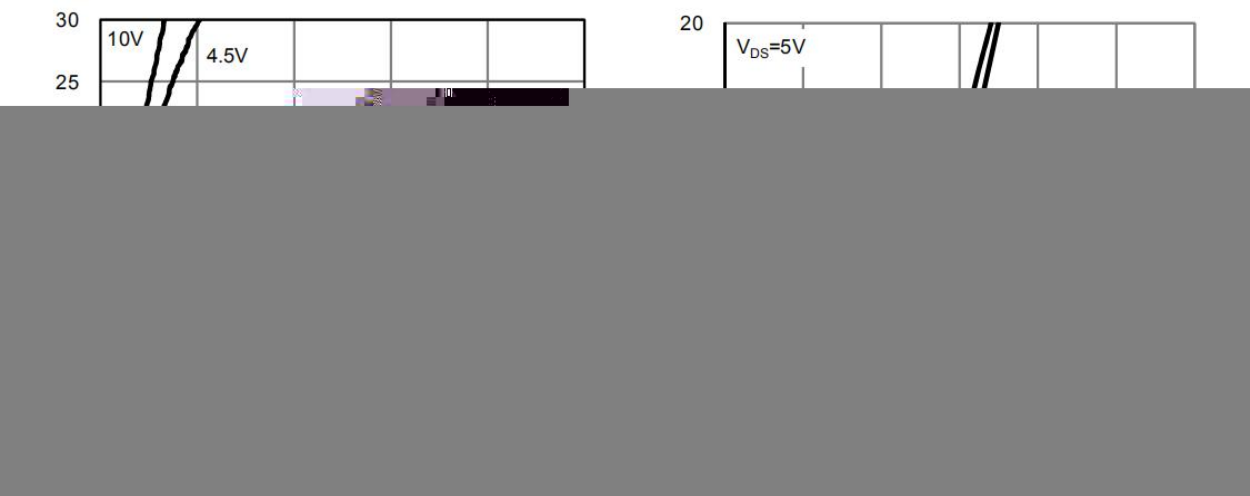
| 参数<br>Parameter                      | 符号<br>Symbol                  | 数值<br>Rating    | 单位<br>Unit         |
|--------------------------------------|-------------------------------|-----------------|--------------------|
| Drain-Source Voltage                 | $V_{DSS}$                     | 40              | V                  |
| Drain Current                        | $I_D(T_c=25^{\circ}\text{C})$ | 12              | A                  |
| Gate-Source Voltage                  | $V_{GS}$                      | $\pm 20$        | V                  |
| Avalanche Current                    | $I_{AS}$                      | 11.7            | A                  |
| Avalanche energy( $L=0.5\text{mH}$ ) | $E_{AS}$                      | 54.8            | mJ                 |
| Power Dissipation                    | $P_D(T_c=25^{\circ}\text{C})$ | 11              | W                  |
| Junction Temperature Range           | $T_J$                         | 150             | $^{\circ}\text{C}$ |
| Storage Temperature Range            | $T_{stg}$                     | -55~150         | $^{\circ}\text{C}$ |
| Maximum Junction-to-Ambient          | $t \leq 10\text{s}$           | $R_{\theta JA}$ | 40                 |
|                                      | Steady-State                  | $R_{\theta JA}$ | 75                 |
| Maximum Junction-to-Case             | Steady-State                  | $R_{\theta JC}$ | 11                 |

| 参数<br>Parameter                   | 符号<br>Symbol | 测试条件<br>Test Conditions                    | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit    |
|-----------------------------------|--------------|--------------------------------------------|------------|------------|------------|---------------|
| Drain-Source Breakdown Voltage    | $BV_{DSS}$   | $V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$    | 40         | 45         |            | V             |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS}=40\text{V}$ $V_{GS}=0\text{V}$     |            |            | 1.0        | $\mu\text{A}$ |
| Gate-Body Leakage Current Forward | $I_{GSS}$    | $V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$ |            |            | $\pm 100$  | nA            |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$       | 1.0        | 1.7        | 2.5        | V             |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=10\text{V}$ $I_D=4\text{A}$        |            | 19.9       | 22         | m $\Omega$    |

## / Electrical Characteristics(Ta=25 )

| 参数<br>Parameter              | 符号<br>Symbol | 测试条件<br>Test Conditions                                        | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|------------------------------|--------------|----------------------------------------------------------------|------------|------------|------------|------------|
| Input Capacitance            | $C_{iss}$    | $V_{DS}=10V$ $V_{GS}=0V$<br>$f=1.0MHz$                         |            | 880        |            | pF         |
| Output Capacitance           | $C_{oss}$    |                                                                |            | 790        |            |            |
| Reverse Transfer Capacitance | $C_{rss}$    |                                                                |            | 260        |            |            |
| Turn-On Delay Time           | $t_{d(on)}$  | $V_{GS}=10V$ $V_{DS}=20V$<br>$R_{GEN}=3\Omega$ $R_L=2.5\Omega$ |            | 4          |            | ns         |
| Turn-On Rise Time            | $t_r$        |                                                                |            | 3          |            |            |
| Turn-Off Delay Time          | $t_{d(off)}$ |                                                                |            | 15         |            |            |
| Turn-Off Fall Time           | $t_f$        |                                                                |            | 2          |            |            |
| Total Gate Charge            | $Q_g(10V)$   | $V_{GS}=10V$ $V_{DS}=20V$<br>$I_D=8A$                          |            | 6.5        |            | nC         |
| Total Gate Charge            | $Q_g(4.5V)$  |                                                                |            | 3          |            |            |
| Gate-Source Charge           | $Q_{gs}$     |                                                                |            | 1.2        |            |            |
| Gate-Drain Charge            | $Q_{gd}$     |                                                                |            | 1,1        |            |            |

/ Electrical Characteristic Curve



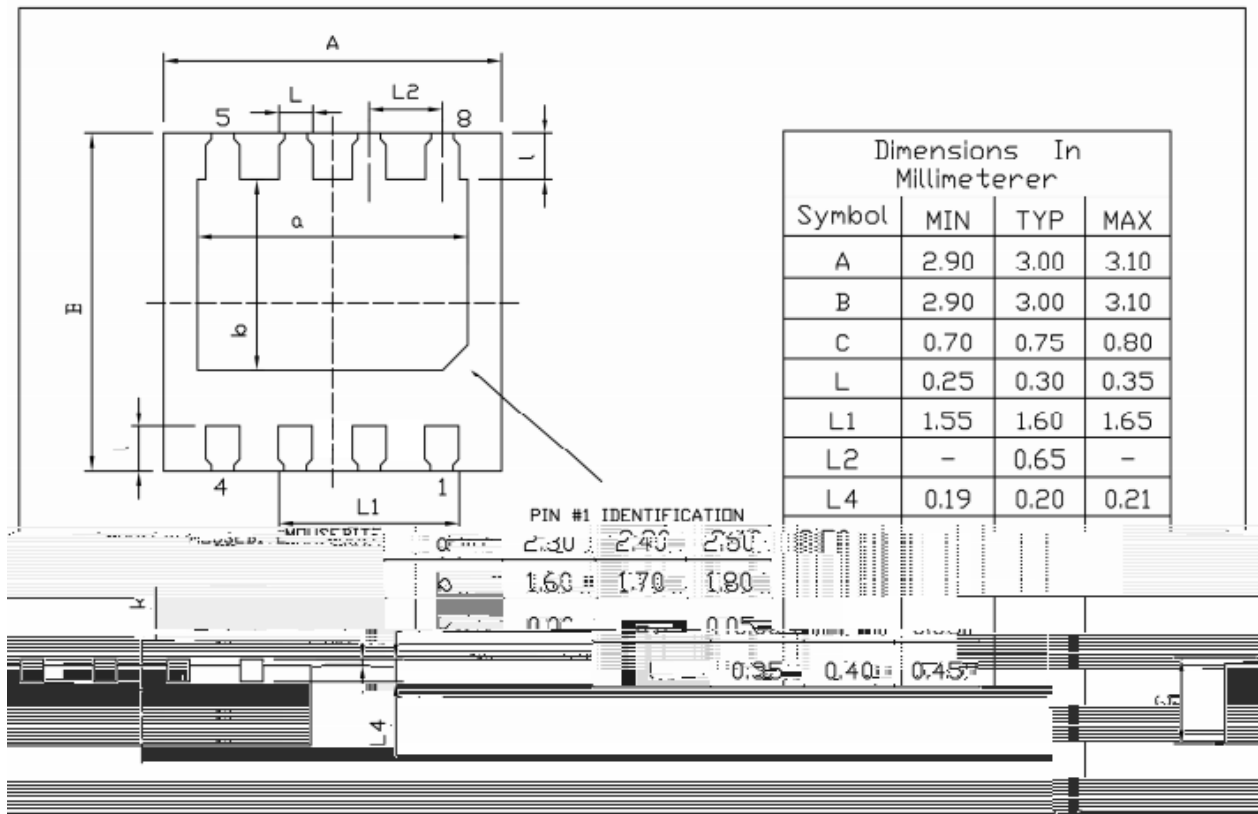
**BRCS200N04ZB**

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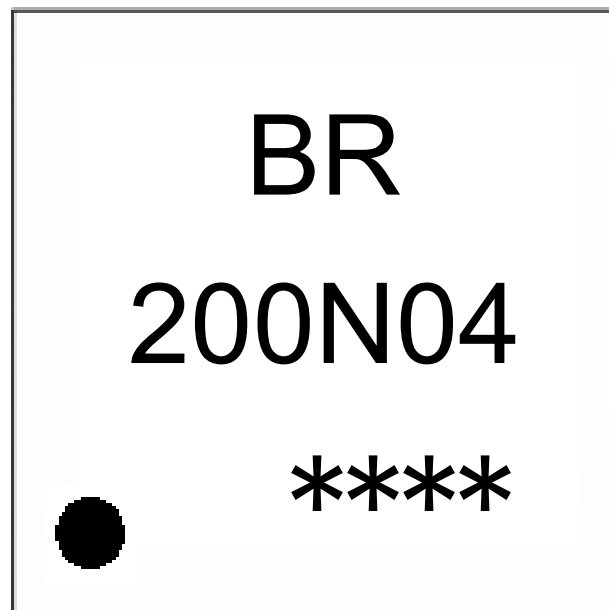
## / Package Dimensions

DFN3X3A-8L

Unit:mm



/ Marking Instructions



说明：

BR： 为公司代码

200N04： 为型号代码

\*\*\*\*： 为生产批号代码，随生产批号变化。

Note:

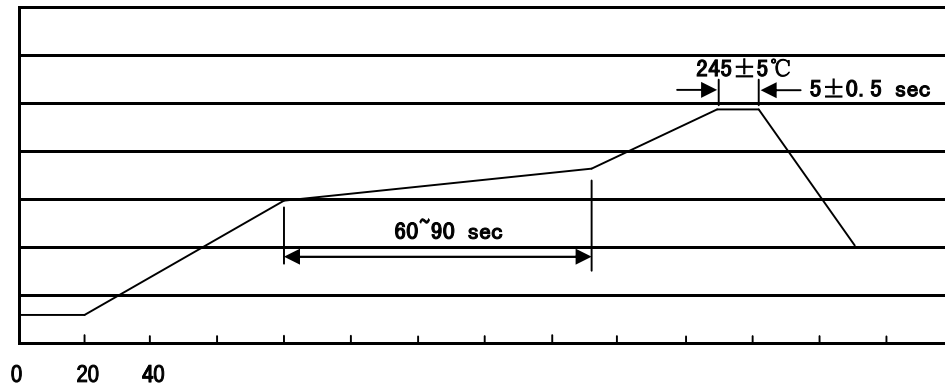
BR: Company Code.

200N04: 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 , Time:60~90sec.   |
| 2 | 245±5   | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | 2 10    | /sec.     | 3. Cooling Speed: 2~10 /sec.            |

## / Resistance to Soldering Heat Test Conditions

260±5      10±1 sec.      Temp.:260±5°C      Time:10±1 sec

## / Packaging SPEC.

/ REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| DFN 3*3A-8L          | 5,000              | 2                       | 10,000                 | 6                            | 60,000                 | 13" ×12                                 | 360×360×50  | 380×335×366 |

## / Notices