

# BRAD6315DSA

Rev.A Jun.-2019



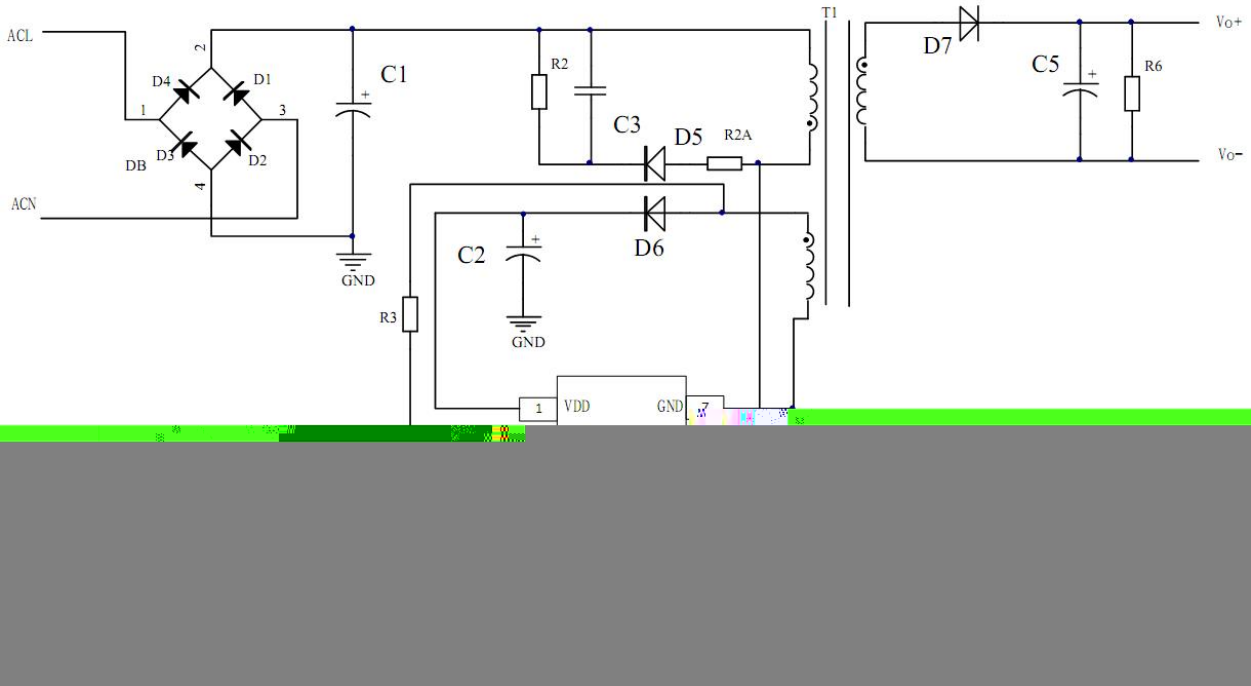
DATA SHEET

/ Revised record

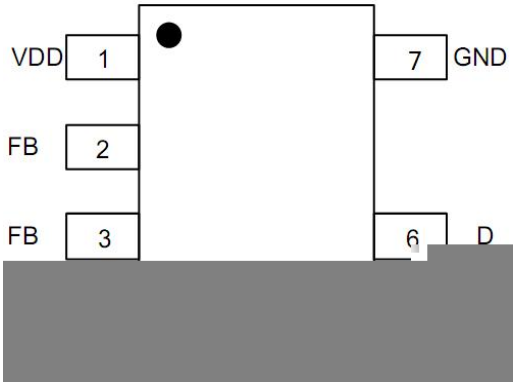
| A | 6/16 | ALL | YC-RM3354S<br>BRAD6315DSA |  |  |
|---|------|-----|---------------------------|--|--|
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |
|   |      |     |                           |  |  |

**BRAD6315DSA**

/ Typical Application Circuit



/ Pinning & Description



| Pin Number | Pin Name | Description |
|------------|----------|-------------|
| 1          | VDD      |             |
| 2 -3       | FB       |             |
| 4          | CS       |             |
| 5-6        | D        | MOS         |
| 7          | GND      |             |

## / Block Diagram



## / Absolute Maximum Ratings(Ta=25 )

| Parameter                            | Value        | Unit |
|--------------------------------------|--------------|------|
| D Pin Voltage Range                  | -0.3 to 650  | V    |
| V <sub>DD</sub> DC Clamping Current  | 10           | mA   |
| V <sub>DD</sub> DC Supply Voltage    | -0.3 to 34.5 | V    |
| CS Voltage Range                     | -0.3 to 7    | V    |
| FB Voltage Range                     | -0.7 to 7    | V    |
| Package Thermal Resistance           | 80           | °C/W |
| Maximum Junction Temperature         | 150          | °C   |
| Operating Temperature Range          | 0 to +125    | °C   |
| Storage Temperature Range            | -65 to +150  | °C   |
| Lead Temperature (Soldering,10sec.)  | 260          | °C   |
| ESD Capability,HBM(Human Body Model) | 3000         | V    |
| ESD Capability,MM(Machine Model)     | 250          | V    |

1

Note 1: If the device operating conditions over the maximum rating of the above-mentioned conditions, may cause permanent damage to the device. The above parameters is only part of the operating conditions the maximum, we do not recommend the device running outside the scope of this specification. If the device to work long hours under the condition of absolute maximum limit, its stability may be affected.

| Parameter                                         | Symbol              | Test Conditions                   | Min | Typ | Max | Unit |
|---------------------------------------------------|---------------------|-----------------------------------|-----|-----|-----|------|
| <b>Supply Voltage Section(V<sub>DD</sub> Pin)</b> |                     |                                   |     |     |     |      |
| Start-up current into VDD pin                     | I <sub>VDD_st</sub> |                                   |     | 2   | 25  | uA   |
| Quiescent current into VDD pin                    | I <sub>Q</sub>      |                                   |     | 0.5 | 1   | mA   |
| Operation Current                                 | I <sub>VDD_Op</sub> | V <sub>FB</sub> =1.1V,<br>VDD=18V | 0.3 | 0.7 | 0.9 | mA   |

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DATA SHEET

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1

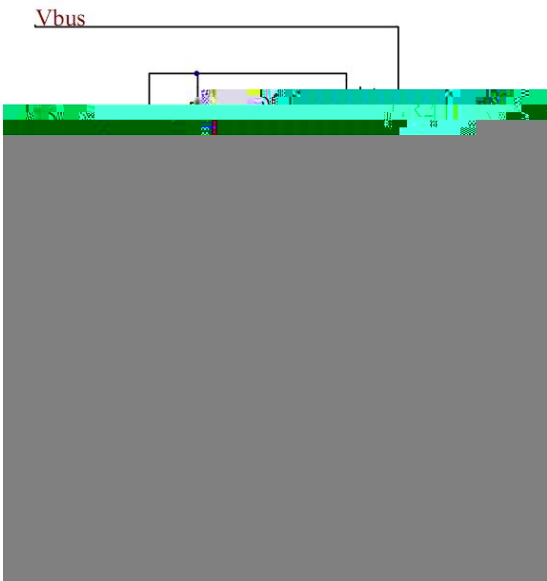
/ Functional Description

BRAD6315DSA DCM

BRAD6315DSA 2uA IC

16.3V BRAD6315DSA 1mA VDD VDD

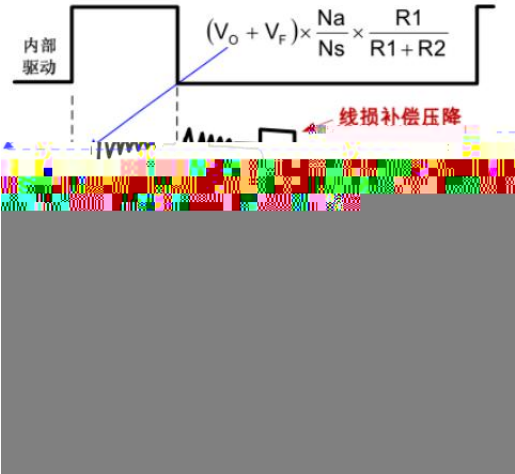
BRAD6315DSA 0.5mA



PSR-CVM

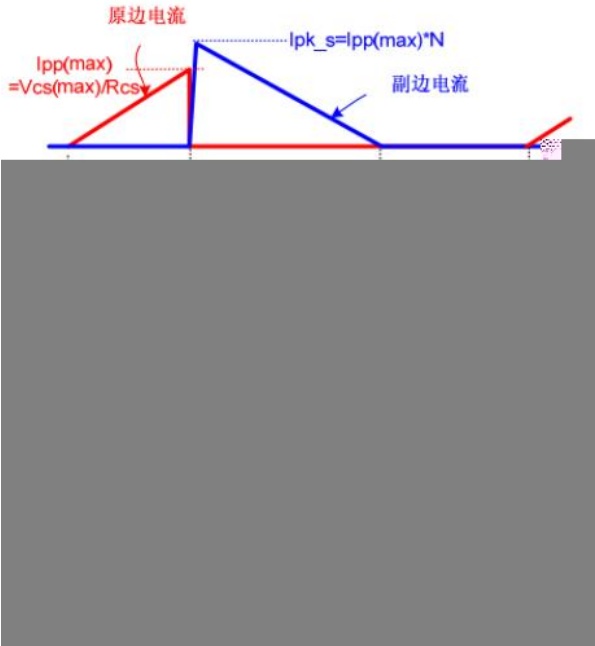
2 BRAD6315DSA CV  
VF

2V



Functional Description

|                                                                       |                |    |    |
|-----------------------------------------------------------------------|----------------|----|----|
|                                                                       | BRAD6315DSA    | FB | 2  |
| FB                                                                    | 2              | FB |    |
| $V_{FB} = (V_O + V_F) \times \frac{N_a}{N_s} \times \frac{R1}{R1+R2}$ |                |    |    |
| V <sub>O</sub>                                                        | V <sub>F</sub> | R1 | R2 |
| N <sub>s</sub>                                                        | N <sub>a</sub> |    | FB |
| FB                                                                    | 2V             |    |    |
| PSR-CCM                                                               |                |    |    |
| FB                                                                    | CS             |    | 3  |



|                                                                               |     |             |     |
|-------------------------------------------------------------------------------|-----|-------------|-----|
| 3                                                                             |     | Tdem        | 3   |
|                                                                               |     |             | Tsw |
| VDD                                                                           |     | BRAD6315DSA |     |
| Tdem                                                                          | Tsw | 1/2         |     |
| $I_{CC\_OUT}(mA) \cong \frac{1}{4} \times N \times \frac{500mV}{Rcs(\Omega)}$ |     |             |     |
| N----                                                                         |     |             |     |
| Rcs---                                                                        | MOS | GND         |     |

## / Functional Description

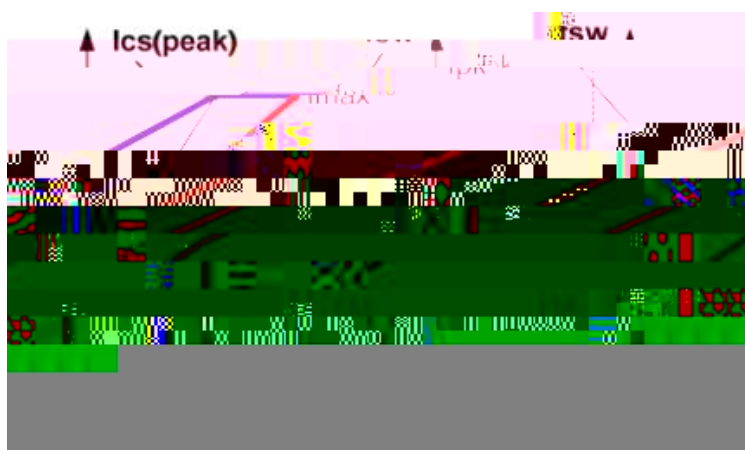
4

FM

BRAD6315DSA

AM

70mW



CDC

,

5

BRAD6315DSA

FB

,

FB

R1 R2

$$\frac{\Delta V(\text{cable})}{V_{\text{out}}} \approx \frac{I_{\text{cable\_max}} \times (R1/R2)}{V_{\text{FB\_REF}}} \times 100\%$$

R1=3KΩ R2=18KΩ

$$\frac{\Delta V(\text{cable})}{V_{\text{out}}} = \frac{36\mu\text{A} \times (3\text{K}/18\text{K})}{2\text{V}} \times 100\% = 4.6\%$$

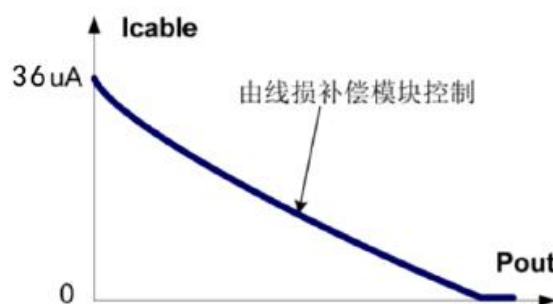
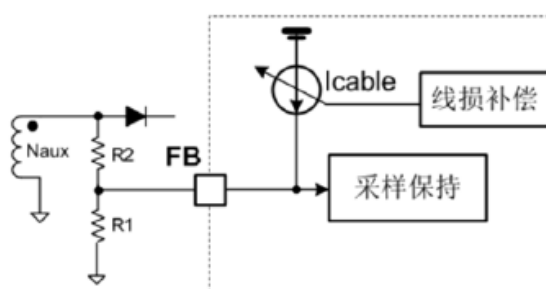


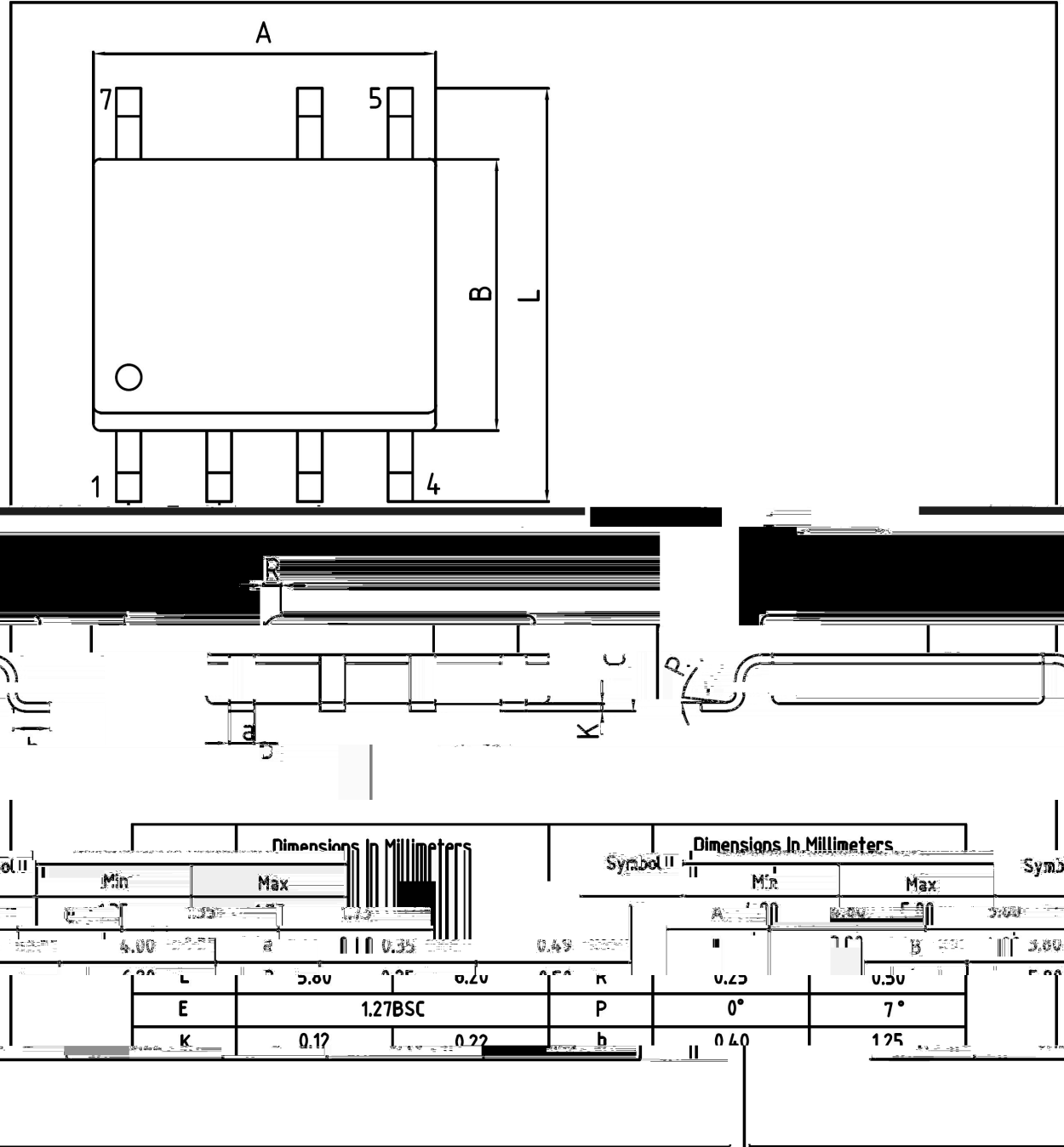
图 5



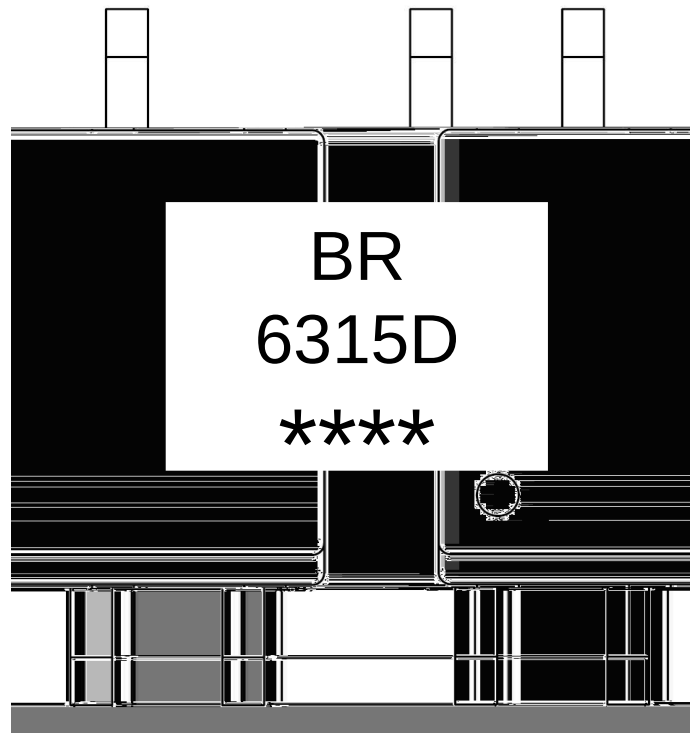
/ Package Dimensions

SOP-7

単位: mm



## / Marking Instructions



BR

6315D

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Note

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Company Code

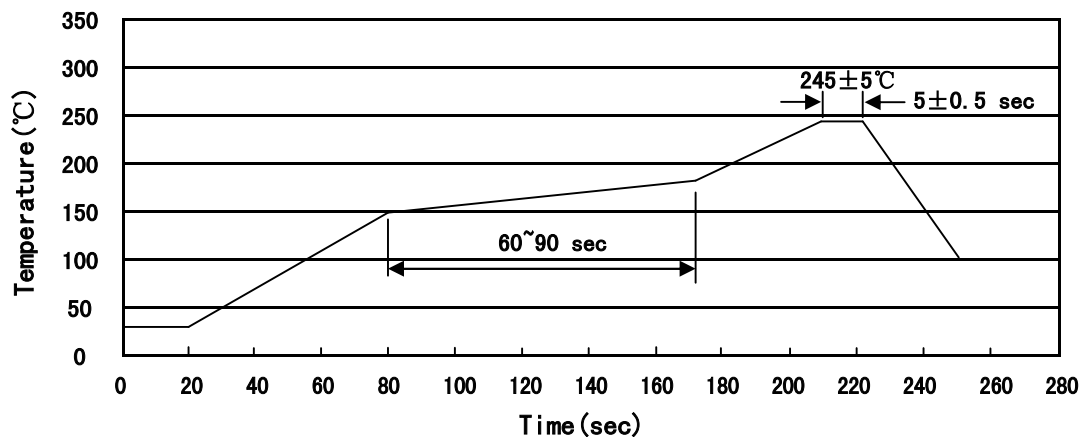
6315D

Product Typ

\*\*\*\*

Lot No.Code,code change with Lot No

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



说明：

- 1、预热温度 150 ~ 180°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

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

## / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

## / Packaging SPEC.

卷盘包装 / REEL

| Package Type | Units              |                         |                        |                              |                        | Dimension (unit mm) |            |             |
|--------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---------------------|------------|-------------|
|              | 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  | Outer Box   |
| SOP-7        | 4,000              | 2                       | 8,000                  | 6                            | 48,000                 | 13" ×12             | 360×360×50 | 380×335×366 |

## / Notices