

Rev.A Qct.-2023

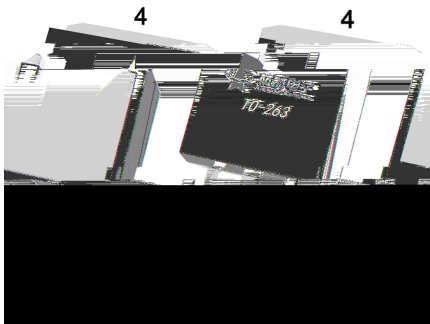
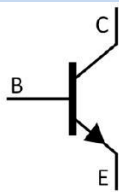
TO-263 NPN

Silicon NPN transistor in a TO-263 Plastic Package.

BRMJB42CQ AEC-Q101

Complement to BRMJB42CQ, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

Medium power linear switching applications, Meet the stringent requirements of automotive applications.



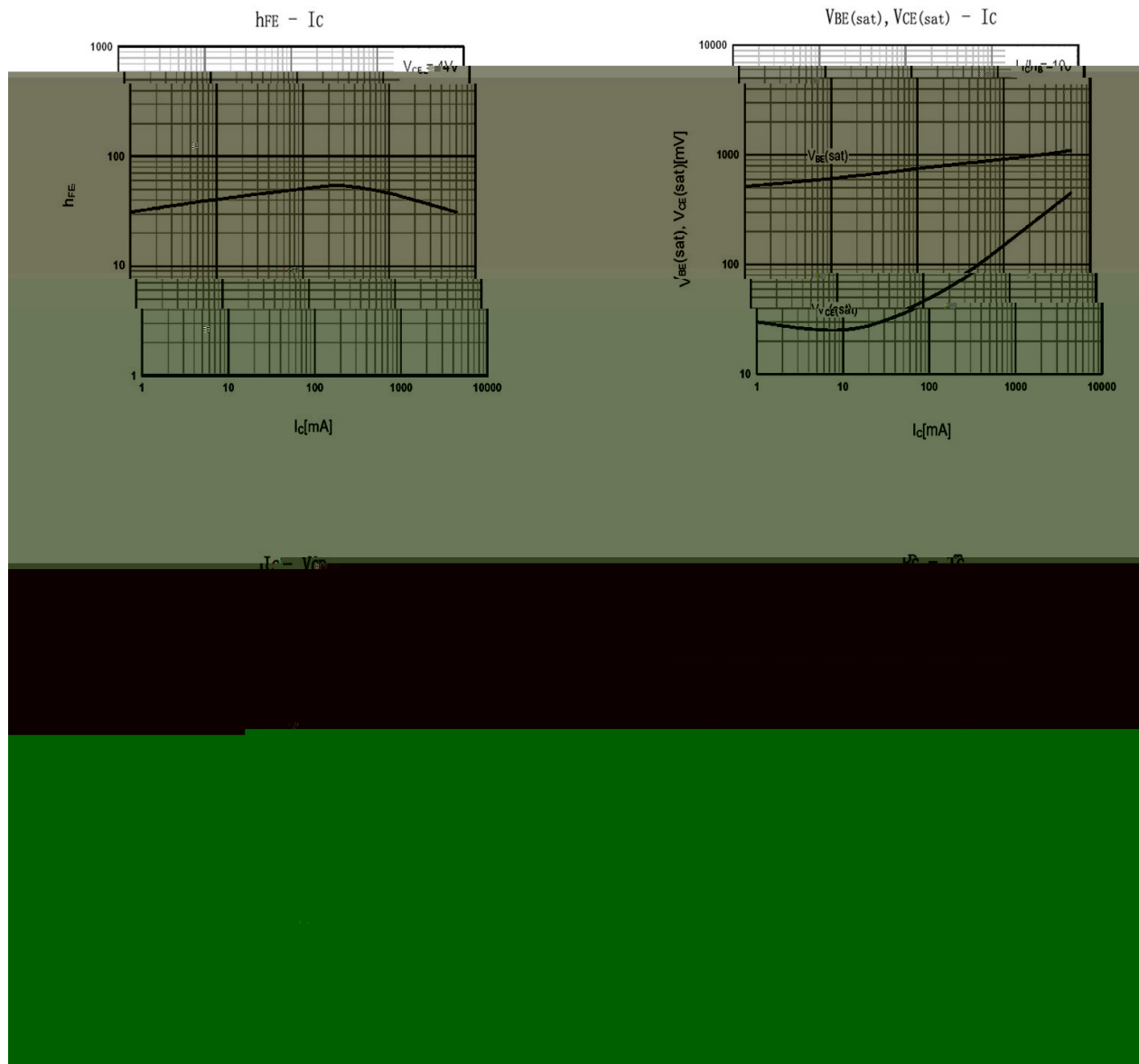
PIN1 Base PIN 2 4 Collector PIN 3 Emitter

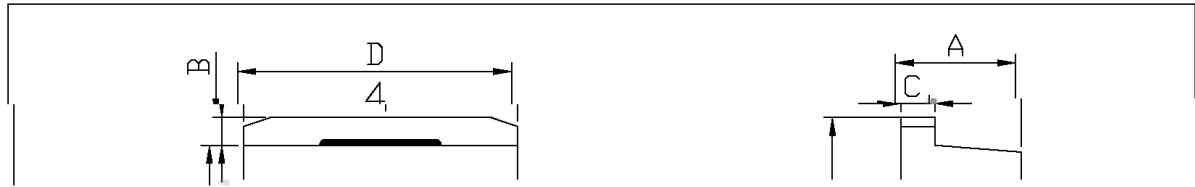
See Marking Instructions.

| Parameter                      | Symbol                | Rating  | Unit |
|--------------------------------|-----------------------|---------|------|
| Collector to Base Voltage      | $V_{CBO}$             | 100     | V    |
| Collector to Emitter Voltage   | $V_{CEO}$             | 100     | V    |
| Emitter to Base Voltage        | $V_{EBO}$             | 5       | V    |
| Collector Current - Continuous | $I_C$                 | 6       | A    |
| Peak Collector Current         | $I_{CP}$              | 10      | A    |
| Base Current - Continuous      | $I_B$                 | 2       | A    |
| Power Dissipation              | $P_D$                 | 2       | W    |
| Power Dissipation              | $P_D(T_c=25^\circ C)$ | 65      | W    |
| Junction Temperature           | $T_j$                 | 150     |      |
| Storage Temperature Range      | $T_{sag}$             | -55 150 |      |

| Parameter                               | Symbol        | Test Conditions          | Min | Typ | Max | Unit    |
|-----------------------------------------|---------------|--------------------------|-----|-----|-----|---------|
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C=30mA$ $I_B=0$       | 100 |     |     | V       |
| Collector Cut-Off Current               | $I_{CEO}$     | $V_{CE}=60V$ $I_B=0$     |     |     | 0.7 | mA      |
| Collector Cut-Off Current               | $I_{CES}$     | $V_{CE}=100V$ $V_{EB}=0$ |     |     | 400 | $\mu A$ |
| Emitter Cut-Off Current                 | $I_{EBO}$     | $V_{EB}=5V$ $I_C=0$      |     |     | 1   | mA      |
| DC Current Gain                         | $h_{FE(1)}$   | $V_{CE}=4V$ $I_C=3A$     | 15  |     | 75  |         |
|                                         | $h_{FE(2)}$   | $V_{CE}=4V$ $I_C=0.3A$   | 30  |     |     |         |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=6A$ $I_B=0.6A$      |     |     | 1.5 | V       |
| Base to Emitter Voltage                 | $V_{BE}$      | $I_C=6A$ $V_{CE}=4V$     |     |     | 2   | V       |
| Transition Frequency                    | $f_T$         | $V_{CE}=10V$ $I_C=500mA$ | 3   |     |     | MHz     |

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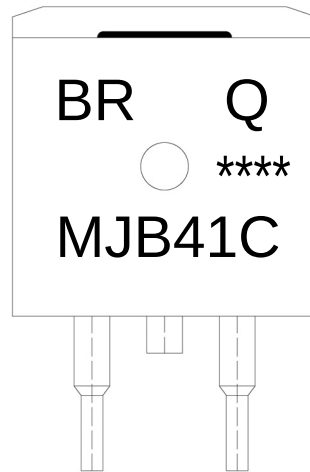




单位: mm

| Symbol         | Dimensions in Millimeters |       | Symbol         | Dimensions in Millimeters |       |
|----------------|---------------------------|-------|----------------|---------------------------|-------|
|                | Min                       | Max   |                | Min                       | Max   |
| A              | 4.30                      | 4.70  | E <sub>L</sub> | 0.00                      | 0.40  |
| B              | 1.00                      | 1.40  | e <sub>1</sub> | 2.34                      | 2.74  |
| b              | 0.70                      | 0.90  | e <sub>2</sub> | 4.88                      | 5.28  |
| b <sub>1</sub> | 1.15                      | 1.35  | L <sub>1</sub> | 15.00                     | 16.00 |
| b <sub>2</sub> | 0.40                      | 0.60  | L <sub>2</sub> | 2.24                      | 2.84  |
| C              | 1.20                      | 1.40  | L <sub>3</sub> | 1.20                      | 1.60  |
| D              | 9.80                      | 10.20 |                |                           |       |

— 243



BR

Q

MJB41C

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Note:

BR: Company Code

Q: Automobile halogen-free product Code

MJB41C: Product Type

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

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

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|--|
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#### Note:

- |   |       |     |           |         |                                         |
|---|-------|-----|-----------|---------|-----------------------------------------|
| 1 | 150   | 200 | 60        | 120sec; | 1.Preheating:150~200 , Time:60~120sec.  |
| 2 | 255±5 |     | 5±0.5sec; |         | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 |       | 2   | 10        | /sec.   | 3. Cooling Speed: 2~10 /sec.            |

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

#### / REEL

| Package Type | Units           |                      |                      |                            |                      | Dimension (unit mm <sup>3</sup> ) |            |             |
|--------------|-----------------|----------------------|----------------------|----------------------------|----------------------|-----------------------------------|------------|-------------|
|              | Units/Reel<br>/ | Reels/Inner Box<br>/ | Units/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ | Reel                              | Inner Box  | Outer Box   |
| TO-263       | 800             | 1                    | 800                  | 6                          | 4,800                | 13 ×24                            | 360×360×50 | 380×335×366 |

#### / TUBE

| Package Type | Units           |                      |                      |                            |                      | Dimension (unit mm <sup>3</sup> ) |            |             |
|--------------|-----------------|----------------------|----------------------|----------------------------|----------------------|-----------------------------------|------------|-------------|
|              | Units/Tube<br>/ | Tubes/Inner Box<br>/ | Units/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ | Tube                              | Inner Box  | Outer Box   |
| TO-263       | 50              | 20                   | 1,000                | 5                          | 5,000                | 532×33×7.0                        | 555×164×50 | 575×290×180 |