

## / Descriptions

TO-252 Voltage Regulator in a TO-252 Plastic Package.

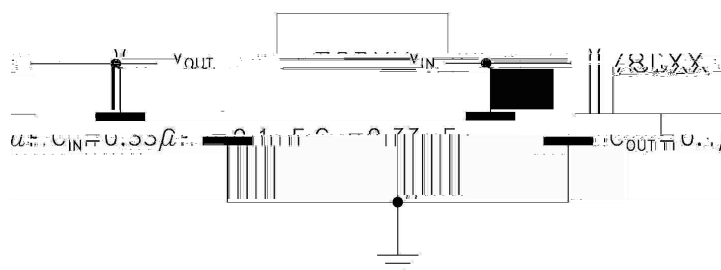
## / Features

1.5A,  
3-Terminal regulators ,output current up to 1.5A, internal thermal overload protection and short-circuit limiting.

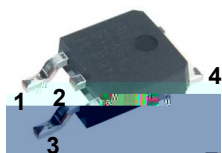
## / Applications

Voltage Regulator.

## / / Equivalent Circuit or Application Circuit



## / Pinning



PIN1 IN      PIN 2 4 GND      PIN 3 OUT

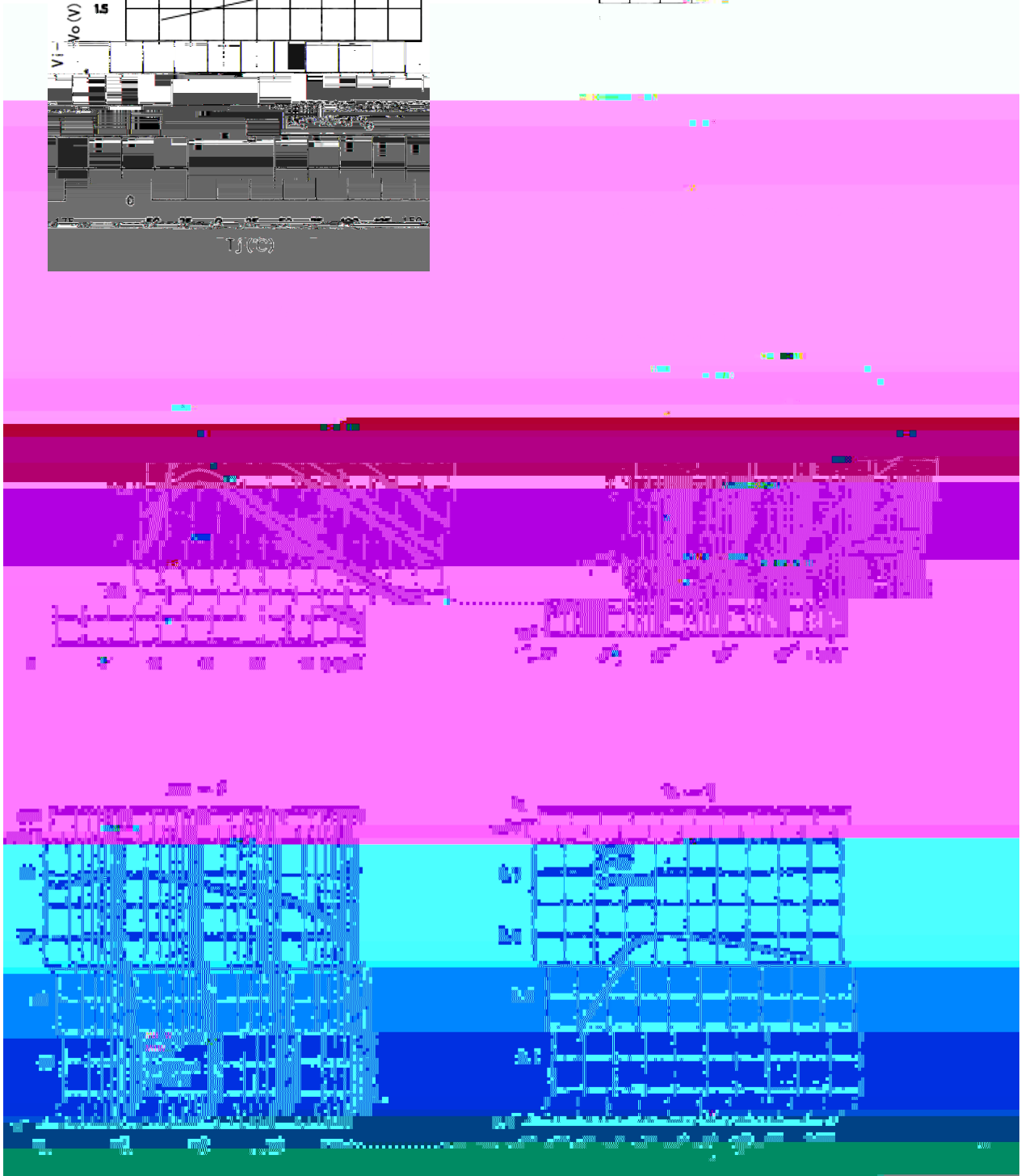
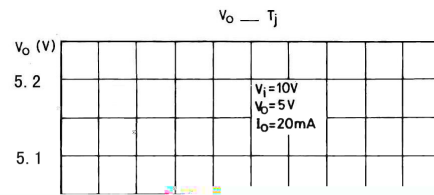
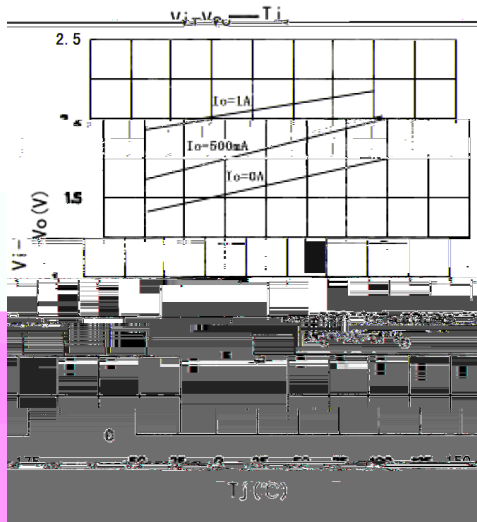
## / Marking

See Marking Instructions.

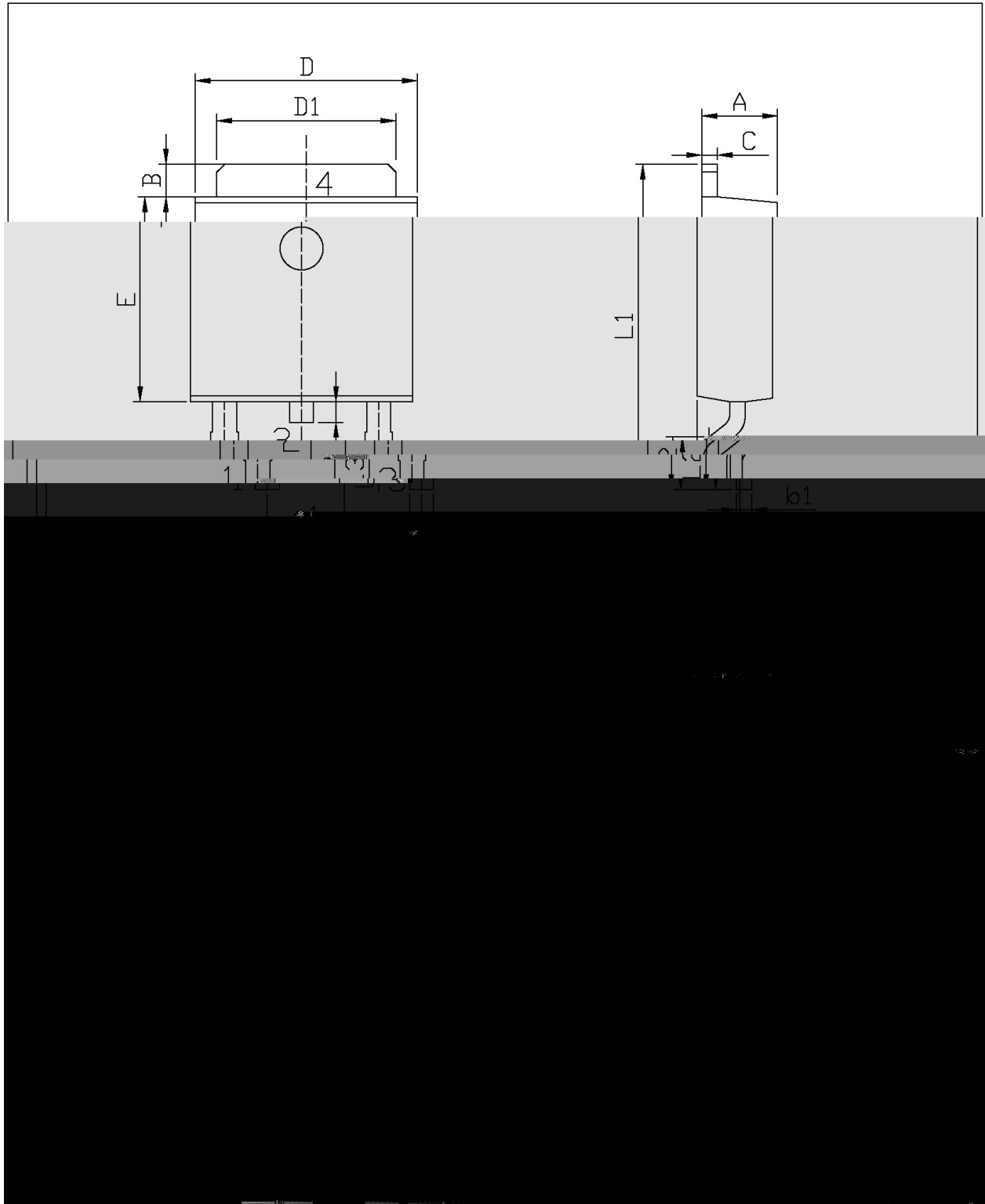
| Parameter                            | Symbol          | Rating  | Unit |
|--------------------------------------|-----------------|---------|------|
| Input voltage                        | $V_i$           | 35      | V    |
| Thermal Resistance Junction-Ambient  | $R_{\theta JA}$ | 65      | /W   |
| Thermal Resistance Junction-Case     | $R_{\theta JC}$ | 5.0     | /W   |
| Operating Junction Temperature Range | $T_{OPR}$       | 0 125   |      |
| Storage temperature range            | $T_{stg}$       | -65 150 |      |

| Parameter                  | Symbol    | Test Conditions                                     | Min  | Typ  | Max  | Unit        |
|----------------------------|-----------|-----------------------------------------------------|------|------|------|-------------|
| Output voltage             | $V_o$     | $T_j=25$                                            | 8.65 | 9.0  | 9.35 | V           |
|                            |           | $V_i=11.5V-26V$<br>$I_o=5mA-1A$ ,<br>$P_o \leq 15W$ | 8.55 | 9.0  | 9.45 | V           |
| Load Regulation            | $V_o$     | $T_j=25$<br>$I_o=5.0mA-1.5A$                        |      |      | 180  | mV          |
|                            |           | $T_j=25$<br>$I_o=250mA-750mA$                       |      |      | 90   | mV          |
| Line regulation            | $V_o$     | $T_j=25$ $V_i=11.5V-26V$                            |      |      | 180  | mV          |
|                            |           | $T_j=25$ $V_i=12V-18V$                              |      |      | 90   | mV          |
| Quiescent Current          | $I_q$     | $T_j=25$                                            |      |      | 8.0  | mA          |
| Quiescent Current Change   | $I_q$     | $V_i=11.5V-26V$                                     |      |      | 1.0  | mA          |
|                            |           | $I_o=5.0mA-1.0A$                                    |      |      | 0.5  | mA          |
| Output Voltage Drift       | $V_o/ T$  | $I_o=5.0mA$                                         |      | -1.0 |      | mV/         |
| Output Noise Voltage       | eN        | B=10Hz-100KHz<br>$T_j=25$                           |      | 70   |      | $\mu V/V_o$ |
| Supply Voltage Rejection   | SVR       | $V_i=12V-23V$ $f=120Hz$                             | 55   |      |      | dB          |
| Dropout Voltage            | $V_d$     | $I_o=1A$ $T_j=25$                                   |      | 2.0  |      | V           |
| Output Resistance          | $R_o$     | $f=1KHz$                                            |      | 17   |      | m $\Omega$  |
| Short Circuit Current      | $I_{sc}$  | $V_i=35V$ $T_j=25$                                  |      | 0.40 |      | A           |
| Short Circuit Peak Current | $I_{scp}$ | $T_j=25$                                            |      | 2.2  |      | A           |

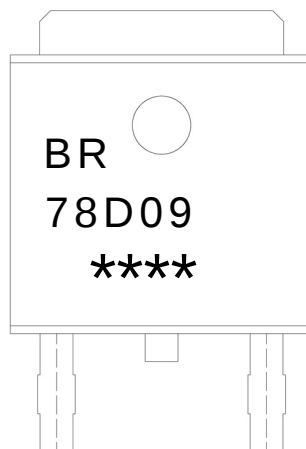
/ Electrical Characteristic Curve



/ Package Dimensions



/ **Marking Instructions**



BR

78D09

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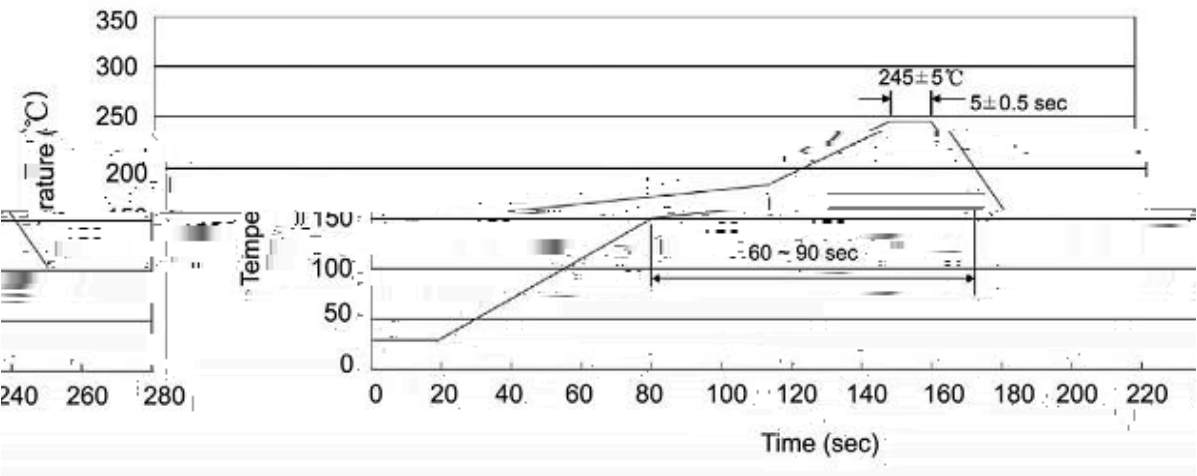
Note:

BR:           Company Code.

78D09:       Product Type.

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

( ) /



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                      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 |
| TO-252               | 2,500              | 2                       | 5,000                  | 6                            | 30,000                 | 13 ×16                                  | 360×360×50  | 380×335×366 |

/ TUBE

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm3) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|----------------------------|-------------|-------------|
|                      | Units/Tube<br>只/套管 | Tubes/Inner Box<br>套管/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Tube 套管                    | Inner Box 盒 | Outer Box 箱 |
| TO-251/252           | 75                 | 48                      | 3,600                  | 5                            | 18,000                 | 526×20.5×5.25              | 555×164×50  | 575×290×180 |

/ Notices