

## 描述 / Descriptions

TO-252 塑封封装电压调整器。Voltage Regulator in a TO-252 Plastic Package.

## 特征 / Features

三端稳压调整器，输出电流高达1.5A,内设过热保护和短路限制。无卤产品。

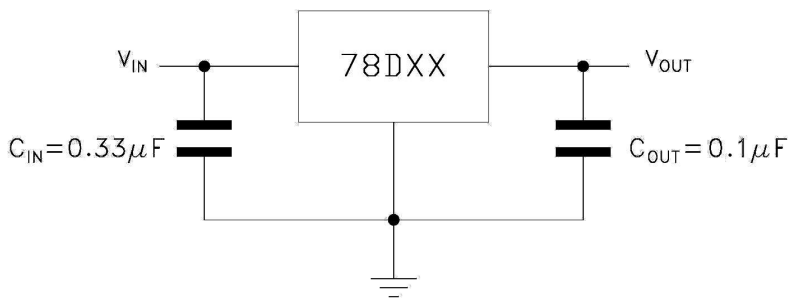
3-Terminal regulators ,output current up to 1.5A, internal thermal overload protection and short-circuit limiting. HF Product.

## 用途 / Applications

电压调整器。

Voltage Regulator.

## 内部等效电路/应用电路 / Equivalent Circuit or Application Circuit



## 引脚排列 / Pinning



PIN1 : IN      PIN 2、 4 : GND      PIN 3 : OUT

## 印章代码 / Marking

见印章说明。See Marking Instructions.

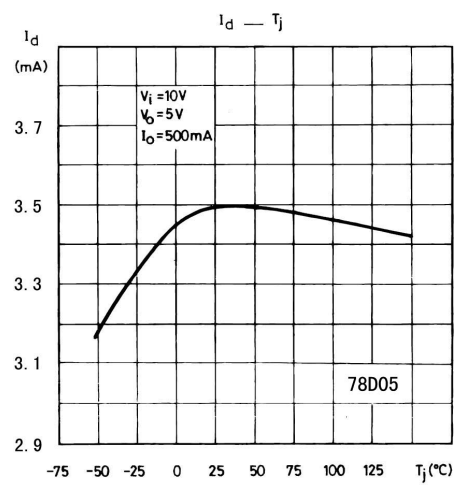
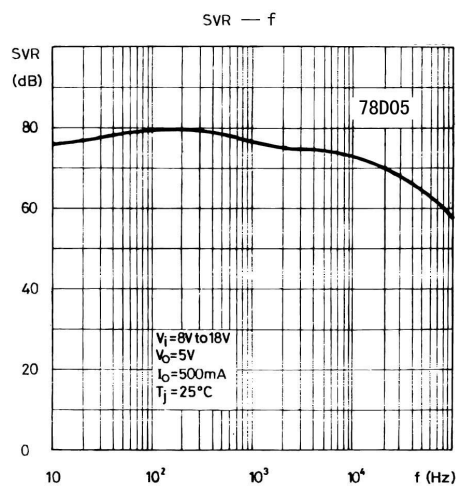
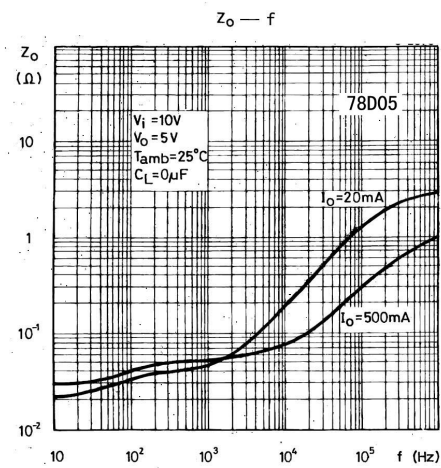
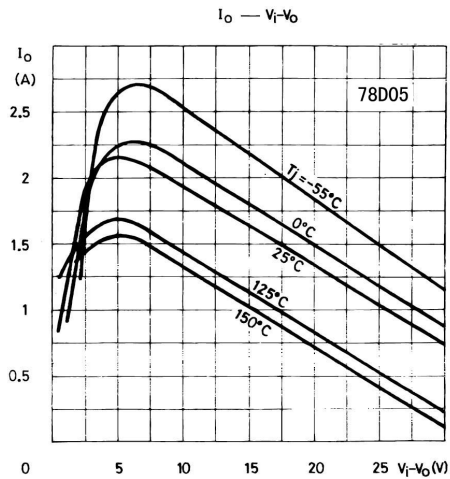
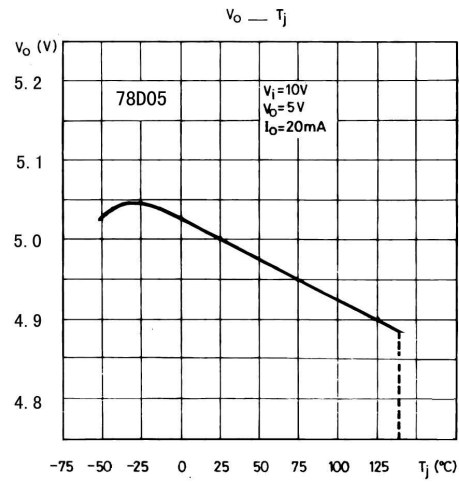
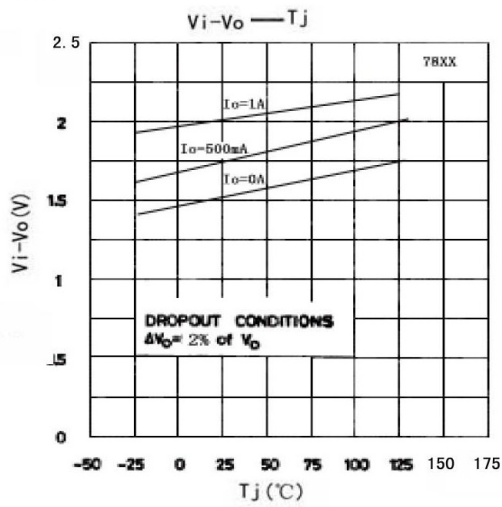
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter                      | 符号<br>Symbol    | 数值<br>Rating | 单位<br>Unit |
|--------------------------------------|-----------------|--------------|------------|
| Input voltage                        | $V_I$           | 35           | V          |
| Thermal Resistance Junction-Ambient  | $R_{\theta JA}$ | 65           | °C/W       |
| Thermal Resistance Junction-Case     | $R_{\theta JC}$ | 10           | °C/W       |
| Operating Junction Temperature Range | $T_{OPR}$       | 0~125        | °C         |
| Storage temperature range            | $T_{stg}$       | -65~150      | °C         |
| Junction temperature range           | $T_J$           | 150          | °C         |

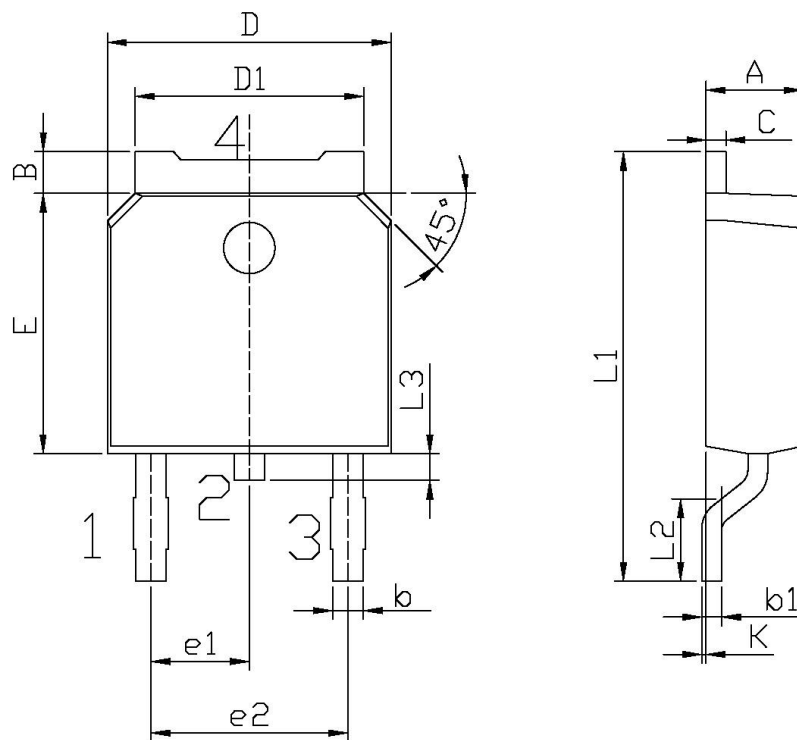
**电性能参数 / Electrical Characteristics(Ta=25°C , Vi=10V, Io=500mA , unless otherwise specified)**

| 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 |
|----------------------------|-------------------------|-----------------------------------------------------------------------------|------------|------------|------------|------------|
| Output voltage             | $V_O$                   | $T_J=25^{\circ}\text{C}$                                                    | 4.8        | 5.0        | 5.2        | V          |
|                            |                         | $V_I=7\text{V}-20\text{V}$ $I_O=5\text{mA}-1\text{A}$ $P_O \leq 15\text{W}$ | 4.75       | 5.0        | 5.25       | V          |
| Load Regulation            | $\Delta V_O$            | $T_J=25^{\circ}\text{C}$ $I_O=5\text{mA}-1.5\text{A}$                       |            |            | 100        | mV         |
|                            |                         | $T_J=25^{\circ}\text{C}$ $I_O=250\text{mA}-750\text{mA}$                    |            |            | 50         | mV         |
| Line regulation            | $\Delta V_O$            | $T_J=25^{\circ}\text{C}$ $V_I=7\text{V}-25\text{V}$                         |            | 3.0        | 100        | mV         |
|                            |                         | $T_J=25^{\circ}\text{C}$ $V_I=8\text{V}-12\text{V}$                         |            | 1.0        | 50         | mV         |
| Quiescent Current          | $I_q$                   | $T_J=25^{\circ}\text{C}$                                                    |            |            | 8.0        | mA         |
| Quiescent Current Change   | $\Delta I_q$            | $V_I=7\text{V}-25\text{V}$                                                  |            |            | 0.8        | mA         |
|                            |                         | $I_O=5\text{mA}-1\text{A}$                                                  |            |            | 0.5        | mA         |
| Output Voltage Drift       | $\Delta V_O / \Delta T$ | $I_O=5\text{mA}$                                                            |            | -1.1       |            | mV/°C      |
| Output Noise Voltage       | eN                      | B=10Hz-100KHz<br>$T_J=25^{\circ}\text{C}$                                   |            |            | 40         | μV/Vo      |
| Supply Voltage Rejection   | SVR                     | $V_I=8\text{V}-18\text{V}$ $f=120\text{Hz}$                                 | 62         |            |            | dB         |
| Dropout Voltage            | Vd                      | $I_O=1\text{A}$ $T_J=25^{\circ}\text{C}$                                    |            | 2.0        |            | V          |
| Output Resistance          | Ro                      | f=1KHz                                                                      |            | 17         |            | mΩ         |
| Short Circuit Current      | Isc                     | $V_I=35\text{V}$ $T_J=25^{\circ}\text{C}$                                   |            | 0.75       |            | A          |
| Short Circuit Peak Current | Iscp                    | $T_J=25^{\circ}\text{C}$                                                    |            | 2.2        |            | A          |

电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

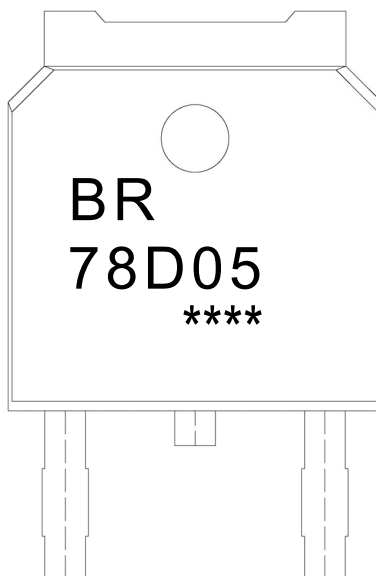


单位: mm

| Symbol | Dimensions In Millimeters |      | Symbol | Dimensions In Millimeters |       |
|--------|---------------------------|------|--------|---------------------------|-------|
|        | Min                       | Max  |        | Min                       | Max   |
| A      | 2.20                      | 2.40 | E      | 5.95                      | 6.25  |
| B      | 0.95                      | 1.25 | e1     | 2.24                      | 2.34  |
| b      | 0.70                      | 0.90 | e2     | 4.43                      | 4.73  |
| b1     | 0.45                      | 0.55 | L1     | 9.85                      | 10.35 |
| C      | 0.45                      | 0.55 | L2     | 1.70                      | 2.00  |
| D      | 6.45                      | 6.75 | L3     | 0.60                      | 0.90  |
| D1     | 5.10                      | 5.50 | K      | 0.00                      | 0.10  |

T0-252

印章说明 / Marking Instructions



说明：

BR： 为公司代码

78D05： 为产品型号

\*\*\*\*： 为生产批号代码，随生产批号变化。

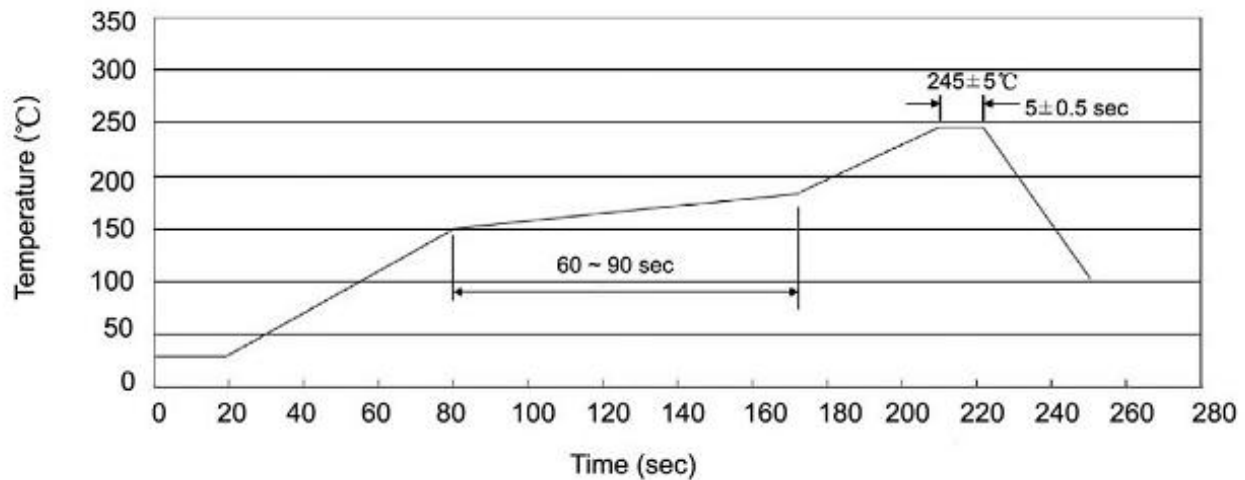
Note:

BR: Company Code.

78D05: Product Type.

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

## 回流焊温度曲线图(无铅) / 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.

## 耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp:260±5°C

Time:10±1 sec

## 包装规格 / Packaging SPEC.

卷盘包装 / 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 |

套管包装 / TUBE

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | 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 |

## 使用说明 / Notices