

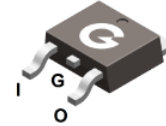
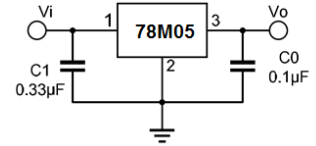
### Features

- Output current up to 0.5A
- Thermal overload protection
- Short circuit protection

HF

### Mechanical Data

- Case: TO-252
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



TO-252

### Ordering Information

| Part Number | Package | Shipping Quantity                       | Marking Code |
|-------------|---------|-----------------------------------------|--------------|
| BL78M05     | TO-252  | 80 pcs / Tube or 2500 pcs / Tape & Reel | 78M05        |

### Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter     | Symbol | Value | Unit |
|---------------|--------|-------|------|
| Input Voltage | $V_I$  | 35    | V    |

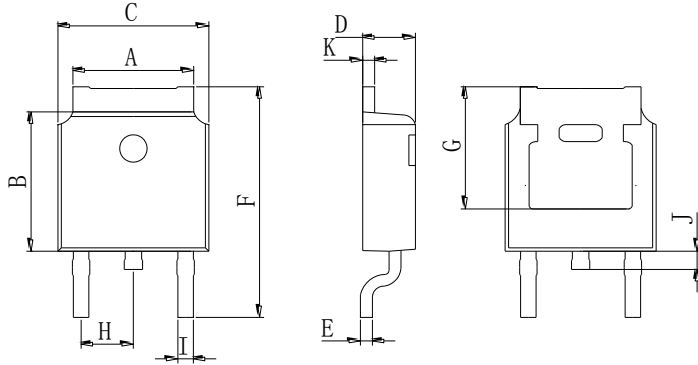
### Thermal Characteristics

| Parameter                          | Symbol          | Value      | Unit               |
|------------------------------------|-----------------|------------|--------------------|
| Thermal Resistance Junction-to-Air | $R_{\theta JA}$ | 92         | $^\circ\text{C/W}$ |
| Operating Temperature Range        | $T_{OPR}$       | -25 ~ +125 | $^\circ\text{C}$   |
| Storage Temperature Range          | $T_{STG}$       | -65 ~ +150 | $^\circ\text{C}$   |

### Electrical Characteristics ( $I_o = 350\text{mA}$ , $V_I = 10\text{V}$ , $C_I = 0.33\mu\text{F}$ , $C_O = 0.1\mu\text{F}$ unless otherwise specified)

| Parameter                | Symbol                  | Test Condition                                                                    | Min. | Typ. | Max. | Unit                 |
|--------------------------|-------------------------|-----------------------------------------------------------------------------------|------|------|------|----------------------|
| Output Voltage           | $V_O$                   | $V_I = 10\text{V}$ , $I_o = 350\text{mA}$                                         | 4.8  | 5.0  | 5.2  | V                    |
|                          |                         | $5\text{mA} \leq I_o \leq 350\text{mA}$                                           | 4.75 | 5.00 | 5.25 | V                    |
|                          |                         | $7\text{V} \leq V_I \leq 20\text{V}$                                              | 4.75 | 5.00 | 5.25 | V                    |
| Line Regulation          | $\Delta V_O$            | $7\text{V} \leq V_I \leq 25\text{V}$ , $I_o = 200\text{mA}$                       | -    | -    | 100  | mV                   |
|                          |                         | $8\text{V} \leq V_I \leq 20\text{V}$ , $I_o = 200\text{mA}$                       | -    | -    | 50   | mV                   |
| Load Regulation          | $\Delta V_O$            | $5\text{mA} \leq I_o \leq 500\text{mA}$                                           | -    | -    | 100  | mV                   |
|                          |                         | $5\text{mA} \leq I_o \leq 200\text{mA}$                                           | -    | -    | 50   | mV                   |
| Quiescent Current        | $I_Q$                   | $V_I = 10\text{V}$ , $I_o = 350\text{mA}$                                         | -    | 4    | 6    | mA                   |
| Quiescent Current Change | $\Delta I_Q$            | $5\text{mA} \leq I_o \leq 350\text{mA}$                                           | -    | -    | 0.5  | mA                   |
|                          |                         | $8\text{V} \leq V_I \leq 25\text{V}$ , $I_o = 200\text{mA}$                       | -    | -    | 0.8  | mA                   |
| Output Voltage Drift     | $\Delta V_O / \Delta T$ | $I_o = 5\text{mA}$ , $0 \leq T_J \leq 125^\circ\text{C}$                          | -    | -0.5 | -    | mV/ $^\circ\text{C}$ |
| Output Noise Voltage     | $V_N$                   | $10\text{Hz} \leq f \leq 100\text{kHz}$ , $T_A = 25^\circ\text{C}$                | -    | 40   | -    | $\mu\text{V}/V_O$    |
| Ripple Rejection         | RR                      | $8\text{V} \leq V_I \leq 18\text{V}$ , $f = 120\text{Hz}$<br>$I_o = 300\text{mA}$ | 62   | -    | -    | dB                   |
| Dropout Voltage          | $V_D$                   | $I_o = 500\text{mA}$ , $T_J = 25^\circ\text{C}$                                   | -    | 2    | -    | V                    |
| Peak Current             | $I_{PK}$                | $T_J = 25^\circ\text{C}$                                                          | -    | 700  | -    | mA                   |
| Short Circuit Current    | $I_{SC}$                | $V_I = 35\text{V}$ , $T_A = 25^\circ\text{C}$                                     | -    | 300  | -    | mA                   |

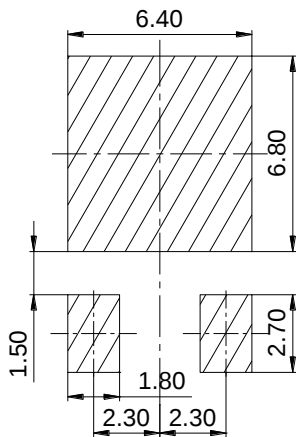
### Package Outline Dimensions (Unit: mm)



| TO-252    |      |       |
|-----------|------|-------|
| Dimension | Min. | Max.  |
| A         | 5.05 | 5.65  |
| B         | 5.80 | 6.40  |
| C         | 6.25 | 6.85  |
| D         | 2.20 | 2.40  |
| E         | 0.40 | 0.60  |
| F         | 9.71 | 10.31 |
| G         | 5.05 | 5.65  |
| H         | 2.10 | 2.50  |
| I         | 0.70 | 0.90  |
| J         | 0.50 | 0.70  |
| K         | 0.40 | 0.60  |

### Mounting Pad Layout (Unit: mm)

#### TO-252



### IMPORTANT NOTICE

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