

FEATURE

- Low gate charge
- Low C_{iss}
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability

Maximum output current

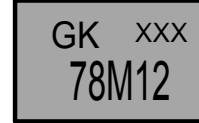
$$I_{OM}: 0.5 \text{ A}$$

Output voltage

$$V_O: 12\text{V}$$

Continuous total dissipation

$$P_D: 1.25 \text{ W } (T_a = 25^\circ\text{C})$$



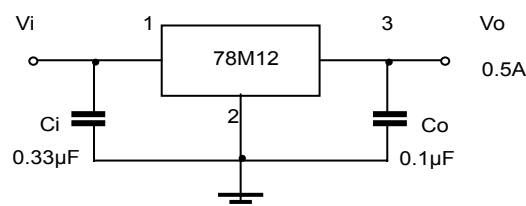
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|-----------|----------|------------------|
| Input Voltage | V_i | 25 | V |
| Operating Junction Temperature Range | T_{OPR} | 0-+125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65-+150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

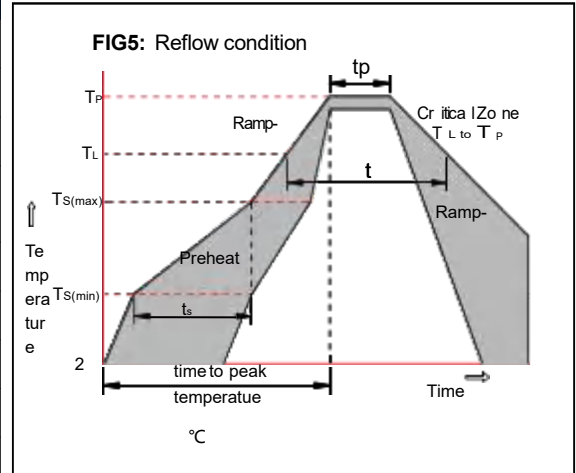
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit | |
|--------------------------|--------------|---|------------------------|------|------|---------------|----|
| Output Voltage | V_o | 25°C | 11.5 | 12 | 12.5 | V | |
| | | $14.5 \leq V_i \leq 27\text{V}, I_o = 5\text{mA} - 350\text{mA}$ $P_o \leq 1.25\text{W}$ | 0-125 $^\circ\text{C}$ | 11.4 | 12 | 12.6 | V |
| Load Regulation | ΔV_o | $I_o = 5\text{mA} - 500\text{mA}$ | 25°C | | 25 | 240 | mV |
| | | $I_o = 5\text{mA} - 200\text{mA}$ | 25°C | | 10 | 120 | mV |
| Line Regulation | ΔV_o | $14.5\text{V} \leq V_i \leq 30\text{V}, I_o = 200\text{mA}$ | 25°C | | 10 | 100 | mV |
| | | $16\text{V} \leq V_i \leq 30\text{V}, I_o = 200\text{mA}$ | 25°C | | 3 | 50 | mV |
| Quiescent Current | I_q | 25°C | | 4.6 | 6 | mA | |
| Quiescent Current Change | ΔI_q | $14.5\text{V} \leq V_i \leq 30\text{V}, I_o = 200\text{mA}$ | 0-125 $^\circ\text{C}$ | | | 0.8 | mA |
| | ΔI_q | $5\text{mA} \leq I_o \leq 350\text{mA}$ | 0-125 $^\circ\text{C}$ | | | 0.5 | mA |
| Output Noise Voltage | V_N | $10\text{Hz} \leq f \leq 100\text{KHz}$ | 25°C | | 75 | μV | |
| Ripple Rejection | RR | $15 \leq V_i \leq 25\text{V}, f = 120\text{Hz}, I_o = 300\text{mA}$ | 0-125 $^\circ\text{C}$ | 55 | 80 | dB | |
| Dropout Voltage | V_d | $I_o = 350\text{mA}$ | 25°C | | 2 | V | |
| Short Circuit Current | I_{sc} | $V_i = 19\text{V}$ | 25°C | | 240 | mA | |
| Peak Current | I_{pk} | 25°C | | 0.7 | | A | |

TYPICAL APPLICATION



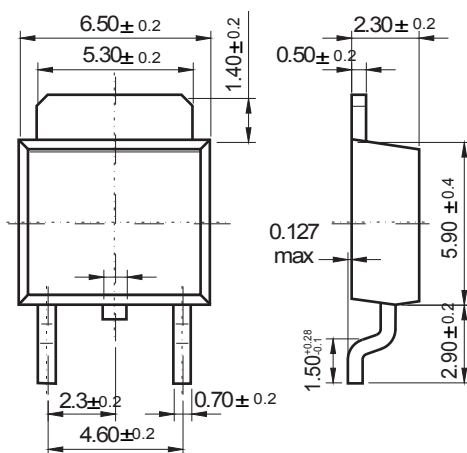
Soldering parameters

| Reflow Condition | | Pb-Free assembly (see as below) |
|---|------------------------------------|------------------------------------|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150 °C |
| | -Temperature Max ($T_{s(max)}$) | +200 °C |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3 °C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3 °C/sec. Max |
| Reflow | -Temperature (T_L) (Liquid us) | +217 °C |
| | -Temperature (t_L) | 60-150 secs. |
| Peak Temp (T_P) | | +260(+0/-5) °C |
| Time within 5 °C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6 °C/sec. Max |
| Time 25 °C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260 °C |

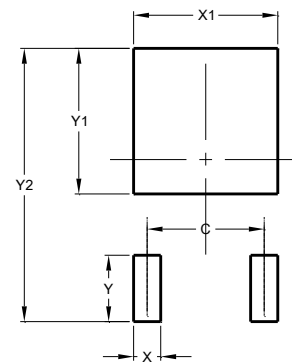


Package Dimensions & Suggested Pad Layout

TO-252



Dimensions in inches and (millimeters)



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 4.55 |
| X | 1.50 |
| X1 | 5.80 |
| Y | 2.70 |
| Y1 | 6.00 |
| Y2 | 10.90 |

Tape & reel specification

| Tape | | Symbol | Dimension (mm) | | |
|------|----------|-------------------|----------------|----|-----------|
| | | P0 | 4.00±0.20 | | |
| | | P1 | 8.00±0.20 | | |
| | | P2 | 2.00±0.20 | | |
| | | D0 | 1.55±0.15 | | |
| | | D1 | 1.55±0.20 | | |
| | | E | 1.75±0.20 | | |
| | | F | 7.50±0.20 | | |
| | | W | 16.00±0.20 | | |
| | | A0 | 7.10±0.20 | | |
| | | B0 | 10.50±0.20 | | |
| | | K0 | 2.70±0.20 | | |
| | | T | 0.30±0.10 | | |
| | | | | D2 | 330.0±5.0 |
| | | | | D3 | 100.0±4.0 |
| W1 | 20.0±5.0 | | | | |
| W2 | 25.0±5.0 | | | | |
| | | I | 13.0±2.0 | | |
| | | Quantity: 2500PCS | | | |