

MMBFJ175LT1G

JFET Chopper

P-Channel – Depletion

Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|-----------------------------|-------------|-------|------|
| Drain–Gate Voltage | V_{DG} | 25 | V |
| Reverse Gate–Source Voltage | $V_{GS(r)}$ | -25 | V |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-------------|----------------------------|
| Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 225 1.8 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 556 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.062 in.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

OFF CHARACTERISTICS

| | | | | |
|---|---------------|-----|-----|----|
| Gate–Source Breakdown Voltage ($V_{DS} = 0, I_D = 1.0 \mu\text{A}$) | $V_{(BR)GSS}$ | 30 | - | V |
| Gate Reverse Current ($V_{DS} = 0 \text{ V}, V_{GS} = 20 \text{ V}$) | I_{GSS} | - | 1.0 | nA |
| Gate–Source Cutoff Voltage ($V_{DS} = 15, I_D = 10 \text{ nA}$) | $V_{GS(OFF)}$ | 3.0 | 6.0 | V |

ON CHARACTERISTICS

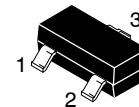
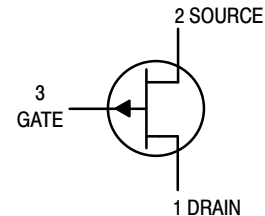
| | | | | | |
|---|--|-----------|-----|----------|----|
| Zero Gate–Voltage Drain Current (Note 2) ($V_{GS} = 0, V_{DS} = 15 \text{ V}$) | I_{DSS} | 7.0 | 60 | mA | |
| Drain Cutoff Current ($V_{DS} = 15 \text{ V}, V_{GS} = 10 \text{ V}$) | $I_{D(off)}$ | - | 1.0 | nA | |
| Drain Source On Resistance ($I_D = 500 \mu\text{A}$) | $r_{DS(on)}$ | - | 125 | Ω | |
| Input Capacitance | $V_{DS} = 0, V_{GS} = 10\text{V}$ $f = 1.0 \text{ MHz}$ | C_{iss} | - | 11 | pF |
| Reverse Transfer Capacitance | | C_{rss} | - | 5.5 | |

2. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.



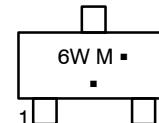
ON Semiconductor®

<http://onsemi.com>



SOT-23 (TO-236)
CASE 318
STYLE 10

MARKING DIAGRAM



6W = Device Code
M = Date Code*
▪ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

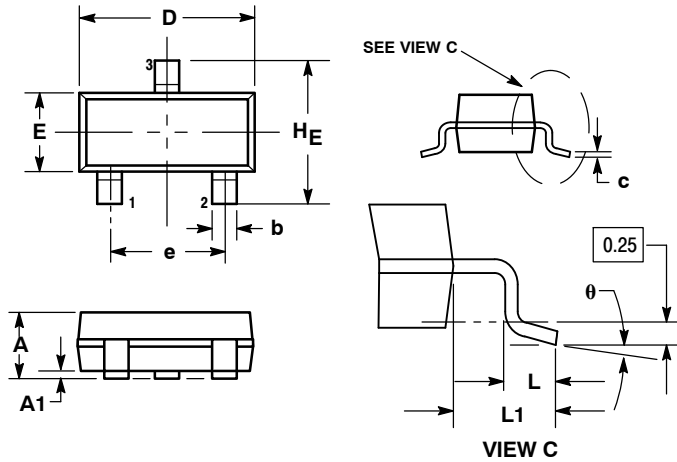
| Device | Package | Shipping† |
|--------------|---------------------|--------------------|
| MMBFJ175LT1G | SOT-23 (Pb-Free) | 3000 / Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MMBFJ175LT1G

PACKAGE DIMENSIONS

SOT-23 (TO-236)
CASE 318-08
ISSUE AN

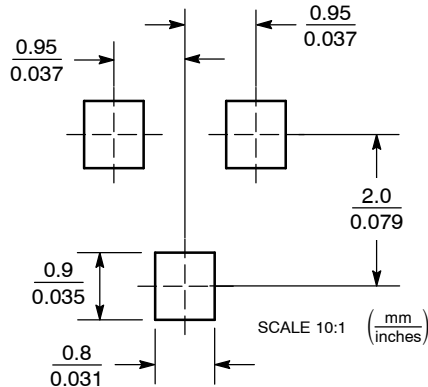


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
 4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.89 | 1.00 | 1.11 | 0.035 | 0.040 | 0.044 |
| A1 | 0.01 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| b | 0.37 | 0.44 | 0.50 | 0.015 | 0.018 | 0.020 |
| c | 0.09 | 0.13 | 0.18 | 0.003 | 0.005 | 0.007 |
| D | 2.80 | 2.90 | 3.04 | 0.110 | 0.114 | 0.120 |
| E | 1.20 | 1.30 | 1.40 | 0.047 | 0.051 | 0.055 |
| e | 1.78 | 1.90 | 2.04 | 0.070 | 0.075 | 0.081 |
| L | 0.10 | 0.20 | 0.30 | 0.004 | 0.008 | 0.012 |
| L1 | 0.35 | 0.54 | 0.69 | 0.014 | 0.021 | 0.029 |
| HE | 2.10 | 2.40 | 2.64 | 0.083 | 0.094 | 0.104 |

STYLE 10:
PIN 1. DRAIN
2. SOURCE
3. GATE

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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