# MMBFJ177LT1G

# JFET Chopper

## P−Channel − Depletion

### Features

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

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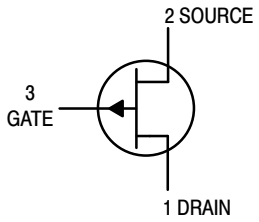
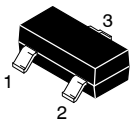
**http://onsemi.com**




**SOT−23 (TO−236AB)**
**CASE 318−08**
**STYLE 10**

### MAXIMUM RATINGS

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

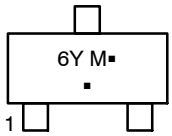
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### THERMAL CHARACTERISTICS

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

1. FR−5 = 1.0 × 0.75 × 0.062 in.

### MARKING DIAGRAM




6Y = Specific 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† |
|---|---|---|
| MMBFJ177LT1G | 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.

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25°C unless otherwise noted)

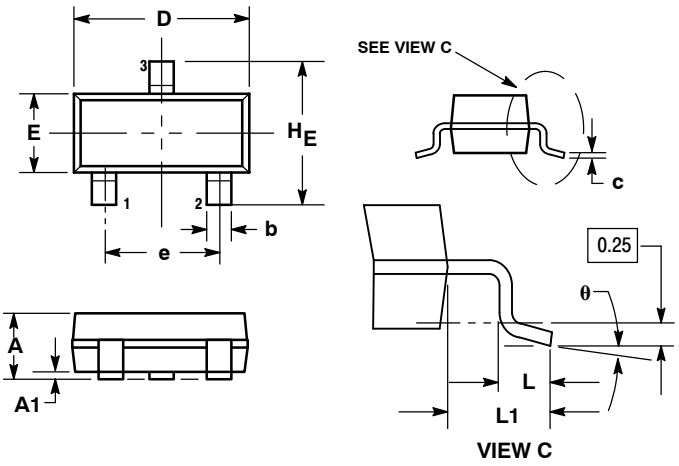
| Characteristic | | Symbol | Min | Max | Unit |
|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | |
| Gate−Source Breakdown Voltage ($V_{DS}$ = 0, $I_D$ = 1.0 μAdc) | | $V_{(BR)GSS}$ | 30 | – | Vdc |
| Gate Reverse Current ($V_{DS}$ = 0 Vdc, $V_{GS}$ = 20 Vdc) | | $I_{GSS}$ | – | 1.0 | nAdc |
| Gate Source Cutoff Voltage ($V_{DS}$ = 15 Vdc, $I_D$ = 10 nAdc) | | $V_{GS(off)}$ | 0.8 | 2.5 | Vdc |
| **ON CHARACTERISTICS** | | | | | |
| Zero−Gate−Voltage Drain Current ($V_{GS}$ = 0, $V_{DS}$ = 15 Vdc) (Note 2) | | $I_{DSS}$ | 1.5 | 20 | mAdc |
| Drain Cutoff Current ($V_{DS}$ = 15 Vdc, $V_{GS}$ = 10 Vdc) | | $I_{D(off)}$ | – | 1.0 | nAdc |
| Drain Source On Resistance ($I_D$ = 500 μAdc) | | $r_{DS(on)}$ | – | 300 | Ω |
| Input Capacitance | $V_{DS}$ = 0, $V_{GS}$ = 10 Vdc<br>f = 1.0 MHz | $C_{iss}$ | – | 11 | pF |
| Reverse Transfer Capacitance | | $C_{rss}$ | – | 5.5 | |

2. Pulse Test: Pulse Width < 300 μs, Duty Cycle ≤ 2%.

# MMBFJ177LT1G

## PACKAGE DIMENSIONS

**SOT−23 (TO−236AB)**
CASE 318−08
ISSUE AN

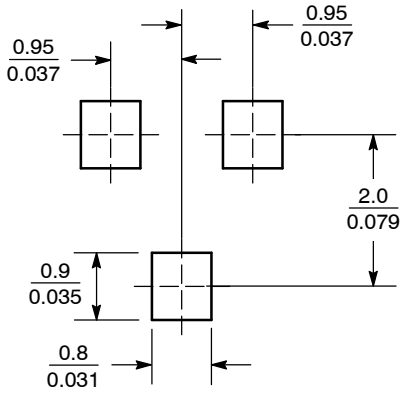



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−01 THRU −07 AND −09 OBSOLETE, NEW STANDARD 318−08.

| | MILLIMETERS | | | INCHES | | |
|---|---|---|---|---|---|---|
| DIM | 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 |
| $H_E$ | 2.10 | 2.40 | 2.64 | 0.083 | 0.094 | 0.104 |

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

## SOLDERING FOOTPRINT*




SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

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



## PUBLICATION ORDERING INFORMATION

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