

# MMBFJ175LT1

Preferred Device

## JFET Chopper

### P-Channel – Depletion

#### Features

- Pb-Free Package is Available

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	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 $25^\circ\text{C}$	$P_D$	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	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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
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#### 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

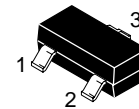
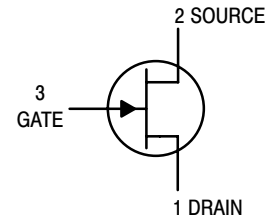
Zero Gate-Voltage Drain Current (Note 2) ( $V_{GS} = 0, V_{DS} = 15 \text{ V}$ )	$I_{DSS}$	7.0	60	mA	
Drain Cutoff Current ( $V_{DS} = 15 \text{ V}, V_{GS} = 10 \text{ V}$ )	$I_{D(off)}$	-	1.0	nA	
Drain Source On Resistance ( $I_D = 500 \mu\text{A}$ )	$r_{DS(on)}$	-	125	$\Omega$	
Input Capacitance	$V_{DS}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

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



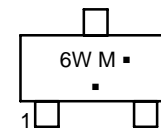
ON Semiconductor®

<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†
MMBFJ175LT1	SOT-23	3,000 / Tape & Reel
MMBFJ175LT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel

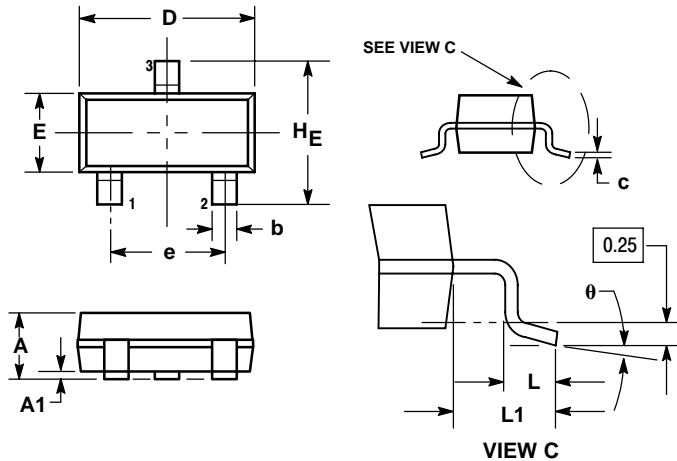
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

# MMBFJ175LT1

## PACKAGE DIMENSIONS

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



**NOTES:**

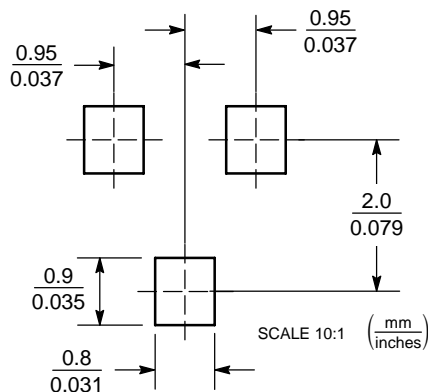
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

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:**

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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**MMBFJ175LT1/D**