

MMBFJ177LT1

JFET Chopper

P-Channel – Depletion

Features

- Pb-Free Package is Available

MAXIMUM RATINGS

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

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.

THERMAL CHARACTERISTICS

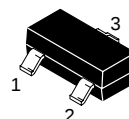
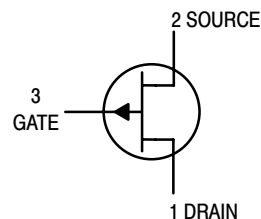
Total Device Dissipation FR–5 Board (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Junction and Storage Temperature	T_J, T_{stg}	–55 to +150	$^\circ\text{C}$

1. FR–5 = $1.0 \times 0.75 \times 0.062$ in.



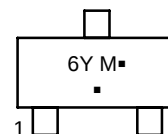
ON Semiconductor®

<http://onsemi.com>



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

MARKING DIAGRAM



6Y = Specific Device Code
M = Date Code
■ = Pb-Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MMBFJ177LT1	SOT-23	3000 Tape & Reel
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.

MMBFJ177LT1

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 ($V_{DS} = 0$, $I_D = 1.0\ \mu\text{Adc}$)	$V_{(BR)GSS}$	30	–	Vdc
Gate Reverse Current ($V_{DS} = 0\ \text{Vdc}$, $V_{GS} = 20\ \text{Vdc}$)	I_{GSS}	–	1.0	nAdc
Gate Source Cutoff Voltage ($V_{DS} = 15\ \text{Vdc}$, $I_D = 10\ \text{nAdc}$)	$V_{GS(off)}$	0.8	2.5	Vdc

ON CHARACTERISTICS

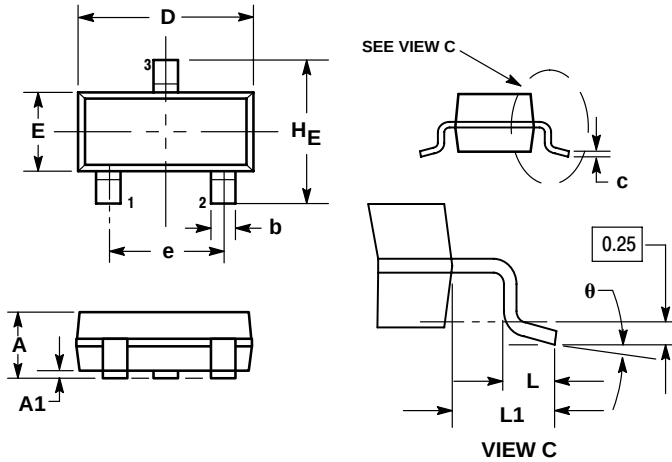
Zero–Gate–Voltage Drain Current ($V_{GS} = 0$, $V_{DS} = 15\text{ Vdc}$) (Note 2)	I_{DSS}	1.5	20	mAdc	
Drain Cutoff Current ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 10\text{ Vdc}$)	$I_{D(off)}$	–	1.0	nAdc	
Drain Source On Resistance ($I_D = 500\text{ }\mu\text{Adc}$)	$r_{DS(on)}$	–	300	Ω	
Input Capacitance	$V_{DS} = 0$, $V_{GS} = 10\text{ Vdc}$ $f = 1.0\text{ MHz}$	C_{iss}	–	11	pF
Reverse Transfer Capacitance		C_{rss}	–	5.5	

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

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PACKAGE DIMENSIONS

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

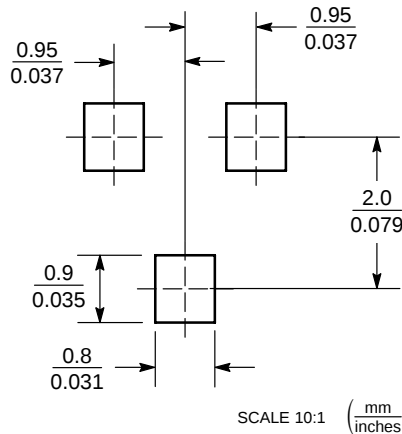


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
 4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

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
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*



*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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