MMBFJ177LT1G, SMMBFJ177LT1G

JFET Chopper P-Channel – Depletion

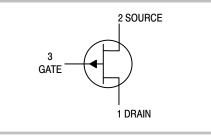
Features

- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and **PPAP** Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant



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

MARKING DIAGRAM



6Y = Specific Device Code

= Date Code* Μ

= 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
SMMBFJ177LT1G	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.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Gate Voltage	V _{DG}	-25	Vdc
Gate-Source Voltage	V _{GS}	25	Vdc

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Total Device Dissipation FR-5 Board	PD	225	mW
(Note 1) $T_A = 25^{\circ}C$ Derate above 25°C		1.8	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

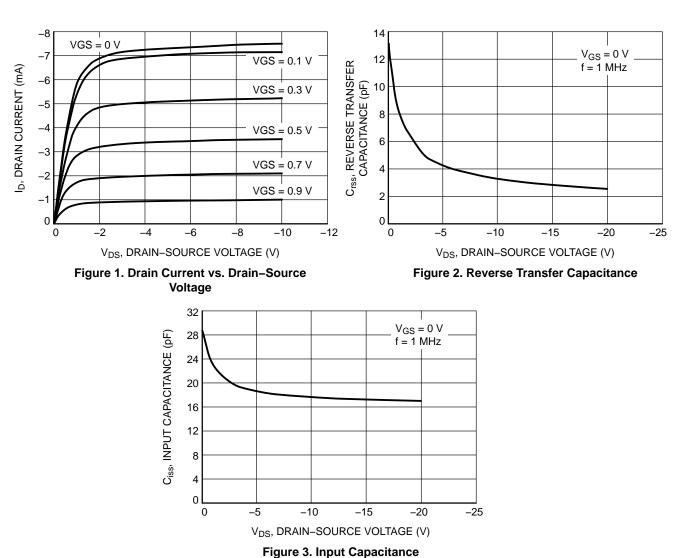
1. FR-5 = $1.0 \times 0.75 \times 0.062$ in.

MMBFJ177LT1G, SMMBFJ177LT1G

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

Charac	Symbol	Min	Max	Unit	
OFF CHARACTERISTICS		·			
Gate-Source Breakdown Voltage ($V_{DS} = 0$	0, I _D = 1.0 μAdc)	V _{(BR)GSS}	30	-	Vdc
Gate Reverse Current (V _{DS} = 0 Vdc, V _{GS} = 20 Vdc)			-	1.0	nAdc
Gate Source Cutoff Voltage ($V_{DS} = -15 V_{C}$	V _{GS(off)}	0.8	2.5	Vdc	
ON CHARACTERISTICS					
Zero–Gate–Voltage Drain Current (V_{GS} =	I _{DSS}	-1.5	-20	mAdc	
Drain Cutoff Current ($V_{DS} = -15$ Vdc, V_{GS}	I _{D(off)}	-	-1.0	nAdc	
Drain Source On Resistance ($I_D = -500 \ \mu m$	r _{DS(on)}	-	300	Ω	
Input Capacitance	V _{DS} = 0, V _{GS} = 10 Vdc	C _{iss}	-	11	pF
Reverse Transfer Capacitance	f = 1.0 MHz	C _{rss}	-	5.5	1

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions. 2. Pulse Test: Pulse Width < $300 \ \mu$ s, Duty Cycle $\leq 2\%$.



TYPICAL CHARACTERISTICS

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

D

3

TOP VIEW

SIDE VIEW

Нe

DETAIL A

-3X b

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SCALE 4:1

A____ ' A1SOT-23 (TO-236) CASE 318 ISSUE AT

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DETAIL A

END VIEW

DATE 01 MAR 2023

NDTES

- 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M,1994.
- 2. CONTROLLING DIMENSION: MILLIMETERS
- 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
- 4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN.	NDM.	MAX.	MIN.	NDM.	MAX.
Α	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
с	0.08	0.14	0.20	0.003	0.006	0.008
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	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.10	2.40	2.64	0.083	0.094	0.104
Т	0*		10*	0*		10*





XXX = Specific Device Code

M = Date Code

= Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.



MOUNTING FOOTPRINT

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

STYLES ON PAGE 2

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MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

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SOT-23 (TO-236) CASE 318 ISSUE AT

DATE 01 MAR 2023

STYLE 1 THRU 5: CANCELLED	STYLE 6: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 7: PIN 1. EMITTER 2. BASE 3. COLLECTOR	STYLE 8: PIN 1. ANODE 2. NO CONNECTION 3. CATHODE		
STYLE 9:	STYLE 10:	STYLE 11:	STYLE 12:	STYLE 13:	STYLE 14:
PIN 1. ANODE	PIN 1. DRAIN	PIN 1. ANODE	PIN 1. CATHODE	PIN 1. SOURCE	PIN 1. CATHODE
2. ANODE	2. SOURCE	2. CATHODE	2. CATHODE	2. DRAIN	2. GATE
3. CATHODE	3. GATE	3. CATHODE-ANODE	3. ANODE	3. GATE	3. ANODE
STYLE 15:	STYLE 16:	STYLE 17:	STYLE 18:	STYLE 19:	STYLE 20:
PIN 1. GATE	PIN 1. ANODE	PIN 1. NO CONNECTION	PIN 1. NO CONNECTION	PIN 1. CATHODE	PIN 1. CATHODE
2. CATHODE	2. CATHODE	2. ANODE	2. CATHODE	2. ANODE	2. ANODE
3. ANODE	3. CATHODE	3. CATHODE	3. ANODE	3. CATHODE-ANODE	3. GATE
STYLE 21:	STYLE 22:	STYLE 23:	STYLE 24:	STYLE 25:	STYLE 26:
PIN 1. GATE	PIN 1. RETURN	PIN 1. ANODE	PIN 1. GATE	PIN 1. ANODE	PIN 1. CATHODE
2. SOURCE	2. OUTPUT	2. ANODE	2. DRAIN	2. CATHODE	2. ANODE
3. DRAIN	3. INPUT	3. CATHODE	3. SOURCE	3. GATE	3. NO CONNECTION
STYLE 27: PIN 1. CATHODE 2. CATHODE 3. CATHODE	STYLE 28: PIN 1. ANODE 2. ANODE 3. ANODE				

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