MMBFU310LT1G

JFET Transistor

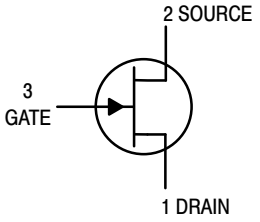
N−Channel

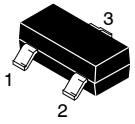
ON Semiconductor®

http://onsemi.com

Features

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





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

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain−Source Voltage	V_{DS}	25	Vdc
Gate−Source Voltage	V_{GS}	25	Vdc
Gate Current	I_G	10	mAdc

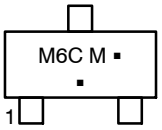
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

Total Device Dissipation FR−5 Board (Note 1) T_A = 25°C Derate above 25°C	P_D	225 1.8	mW 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



M6C = 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†
MMBFU310LT1G	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 − (I_G = −1.0 μAdc, V_{DS} = 0)	$V_{(BR)GSS}$	−25	−	Vdc
Gate 1 Leakage Current − (V_{GS} = −15 Vdc, V_{DS} = 0)	I_{G1SS}	−	−150	pA
Gate 2 Leakage Current − (V_{GS} = −15 Vdc, V_{DS} = 0, T_A = 125°C)	I_{G2SS}	−	−150	nAdc
Gate Source Cutoff Voltage − (V_{DS} = 10 Vdc, I_D = 1.0 nAdc)	$V_{GS(off)}$	−2.5	−6.0	Vdc
ON CHARACTERISTICS				
Zero−Gate−Voltage Drain Current − (V_{DS} = 10 Vdc, V_{GS} = 0)	I_{DSS}	24	60	mAdc
Gate−Source Forward Voltage − (I_G = 10 mAdc, V_{DS} = 0)	$V_{GS(f)}$	−	1.0	Vdc
SMALL−SIGNAL CHARACTERISTICS				
Forward Transfer Admittance − (V_{DS} = 10 Vdc, I_D = 10 mAdc, f = 1.0 kHz)	$\|Y_{fs}\|$	10	18	mmhos
Output Admittance − (V_{DS} = 10 Vdc, I_D = 10 mAdc, f = 1.0 kHz)	$\|y_{os}\|$	−	250	μmhos
Input Capacitance − (V_{GS} = −10 Vdc, V_{DS} = 0 Vdc, f = 1.0 MHz)	C_{iss}	−	5.0	pF
Reverse Transfer Capacitance − (V_{GS} = −10 Vdc, V_{DS} = 0 Vdc, f = 1.0 MHz)	C_{rss}	−	2.5	pF

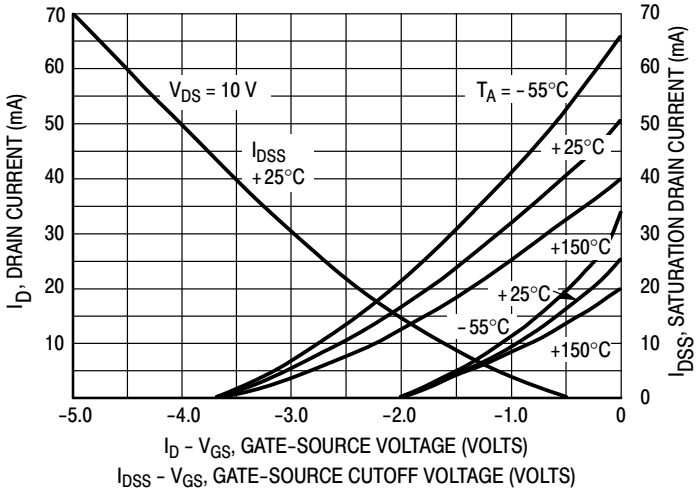


Figure 1. Drain Current and Transfer Characteristics vs Gate−Source Voltage

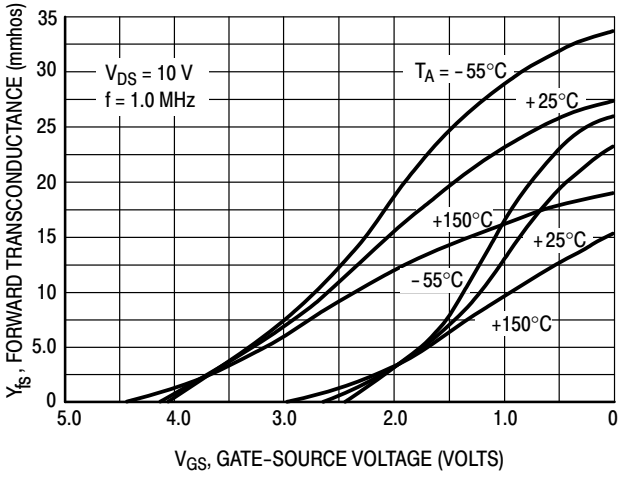


Figure 2. Forward Transconductance vs Gate−Source Voltage

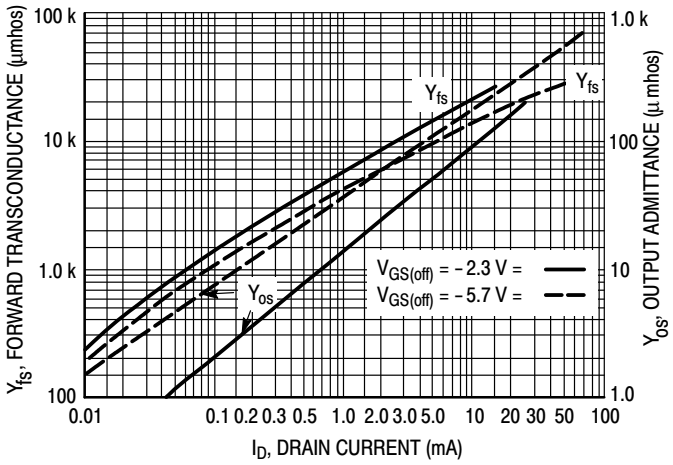


Figure 3. Common−Source Output Admittance and Forward Transconductance vs Drain Current

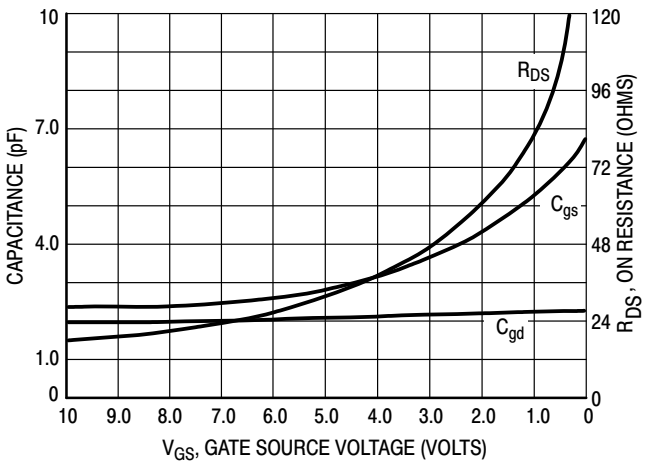


Figure 4. On Resistance and Junction Capacitance vs Gate−Source Voltage

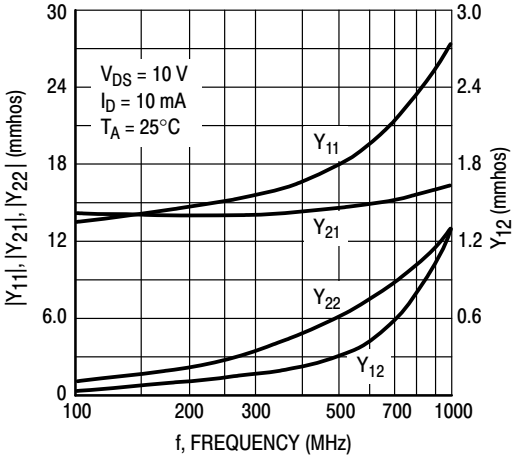


Figure 5. Common−Gate Y Parameter Magnitude vs Frequency

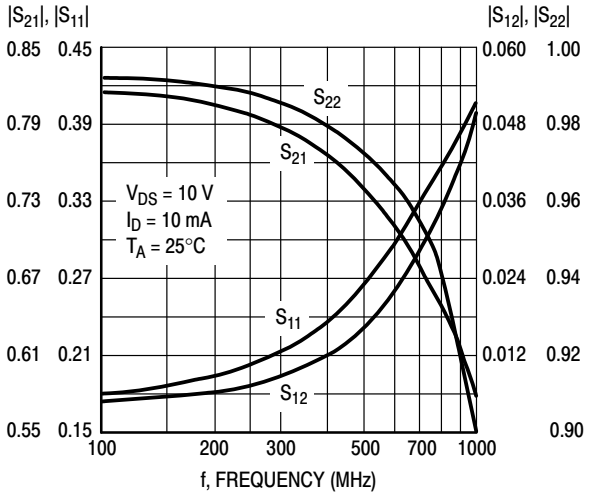


Figure 6. Common−Gate S Parameter Magnitude vs Frequency

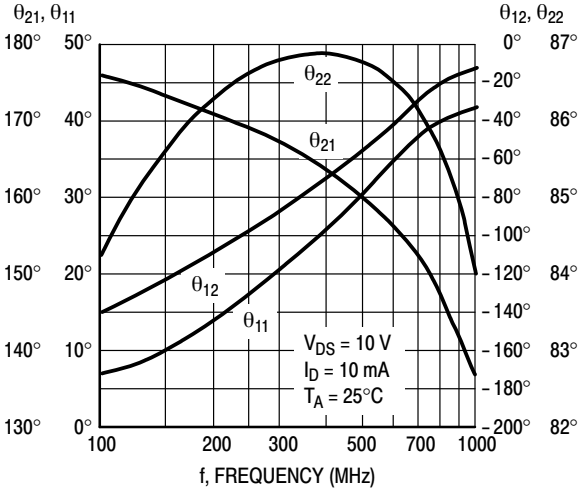


Figure 7. Common−Gate Y Parameter Phase−Angle vs Frequency

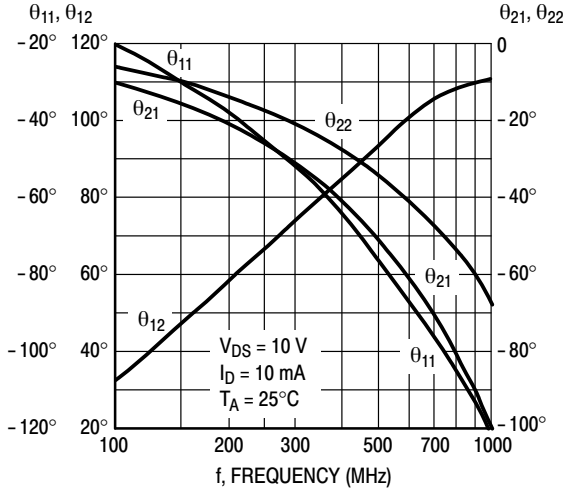
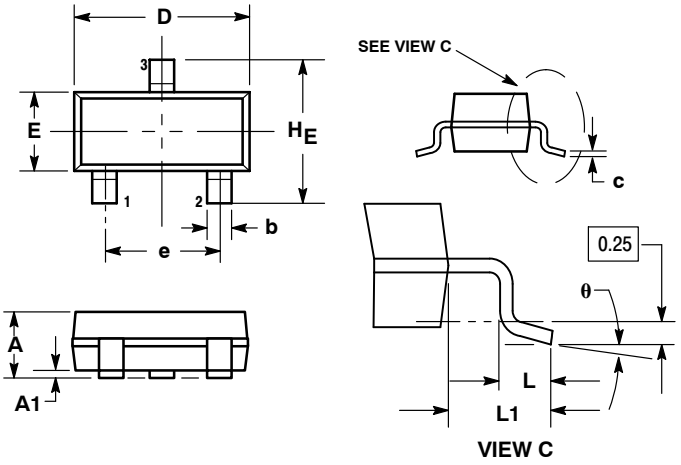


Figure 8. S Parameter Phase−Angle vs Frequency

MMBFU310LT1G

PACKAGE DIMENSIONS

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

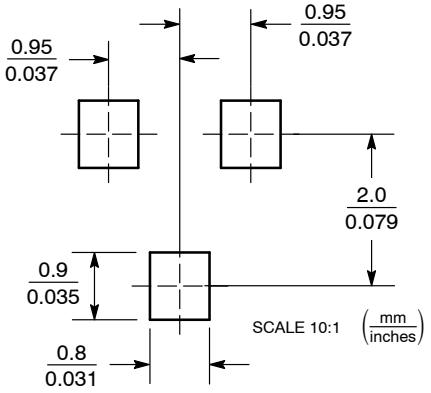


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−01 THRU −07 AND −09 OBSOLETE, NEW STANDARD 318−08.

	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*



*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

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
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Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

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