MMBV105GLT1

Silicon Tuning Diode

This device is designed in the Surface Mount package for general frequency control and tuning applications. It provides solid−state reliability in replacement of mechanical tuning methods.

Features

- Controlled and Uniform Tuning Ratio
- Pb−Free Package is Available

MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	Vdc
Forward Current	I_F	200	mAdc
Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Junction Temperature	T_J	+125	°C
Storage Temperature Range	T_{stg}	−55 to +150	°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.

ON Semiconductor®

http://onsemi.com

3 ○—▷|—○ 1
Cathode   Anode
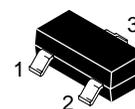
SOT−23 (TO−236)
CASE 318
STYLE 8

MARKING DIAGRAM

M4EM ▪
    ▪

1
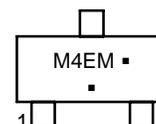
M4E = Specific Device Code
M   = Date Code*
▪   = Pb−Free Package
(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
MMBV105GLT1	SOT−23	3,000 / Tape & Reel
MMBV105GLT1G	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.

MMBV105GLT1

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

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage ($I_R = 10$ μAdc)	$V_{(BR)R}$	30	–	Vdc
Reverse Voltage Leakage Current ($V_R = 28$ Vdc)	I_R	–	50	nAdc

Device Type	C_T $V_R = 25$ Vdc, f = 1.0 MHz pF		Q $V_R = 3.0$ Vdc f = 50 MHz	C_R C_3/C_{25} f = 1.0 MHz	
	Min	Max	Typ	Min	Max
MMBV105GLT1	1.5	2.8	250	4.0	6.5

TYPICAL CHARACTERISTICS
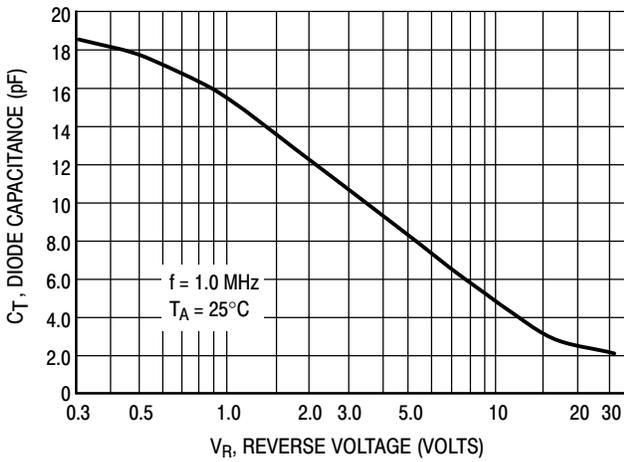
Figure 1. Diode Capacitance
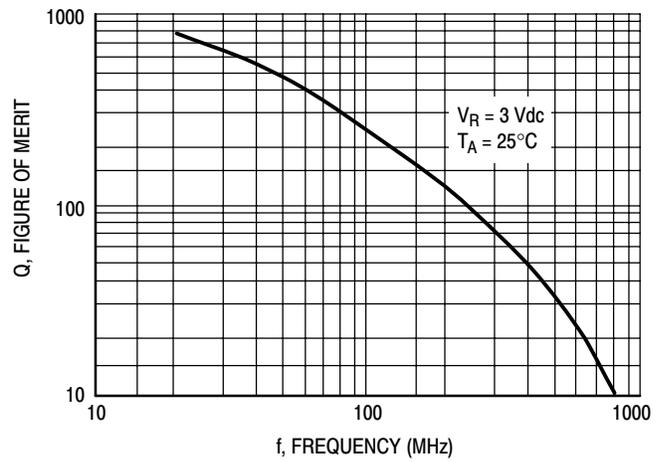
Figure 2. Figure of Merit
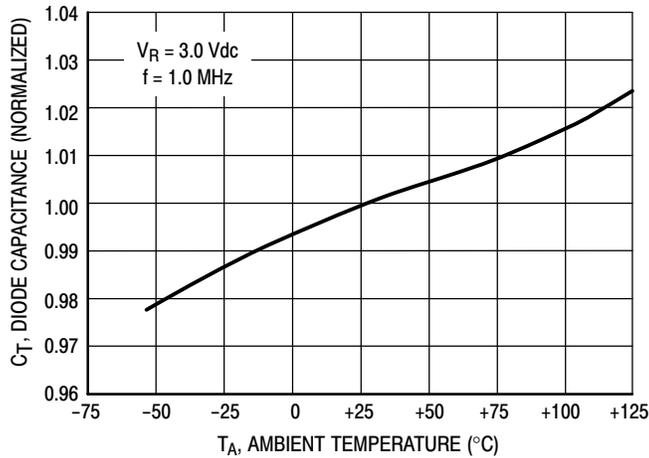
Figure 3. Diode Capacitance

MMBV105GLT1

PACKAGE DIMENSIONS

SOT−23 (TO−236)
CASE 318−08
ISSUE AN
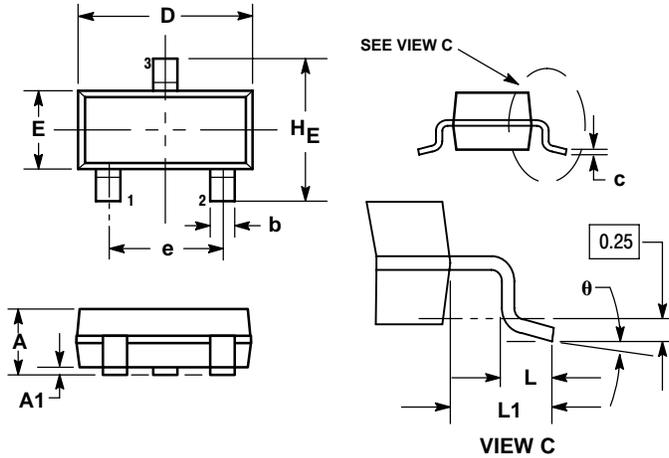
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−01 THRU −07 AND −09 OBSOLETE, NEW STANDARD 318−08.

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
H_E	2.10	2.40	2.64	0.083	0.094	0.104

STYLE 8:
PIN 1. ANODE
2. NO CONNECTION
3. CATHODE

SOLDERING FOOTPRINT*

SCALE 10:1 $\left(\frac{mm}{inches}\right)$
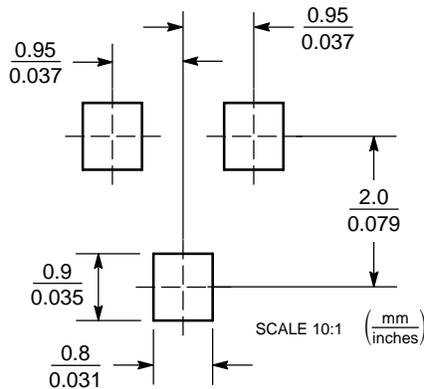
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MMBV105GLT1/D