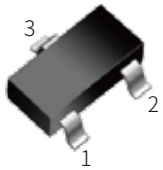
MMBD352

Dual Hot Carrier Mixer Diode

FEATURES

- Very Low Capacitance
- Low Forward Voltage

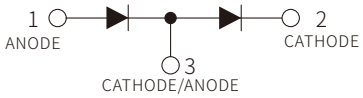


SOT-23

MECHANICAL DATA

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

Marking



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter		Symbol	Value	Unit
Continuous Reverse Voltage		V_R	7	V
Total Device Dissipation FR-5 Board [1]	T_A=25°C	P_d	225	mW
	Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction-to-Ambient		$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate [2]	T_A=25°C	P_d	300	mW
	Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction-to-Ambient		$R_{\theta JA}$	417	°C/W
Operating Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{stg}	-55 to +150	°C

Note1: FR-5=1.0*0.75*0.062 in.
Note2: Alumina=0.4*0.3*0.024 in. 99.5% alumina.

ELECTRICAL CHARACTERISTICS(T_A=25°C)

Parameter	Test Condition	Symbol	Min.	Max.	Unit
Forward Voltage	I_F = 10mA	V_F		0.6	V
Reverse Leakage Current [3]	V_R =3V	I_R		0.25	μA
	V_R =7V			10	
Total Capacitance	V_R=0V, f=1MHz	C_{tot}		1.0	pF

Note3: For each individual diode while the second diode is unbiased

CHARACTERISTIC CURVES

Fig 1. Forward Voltage

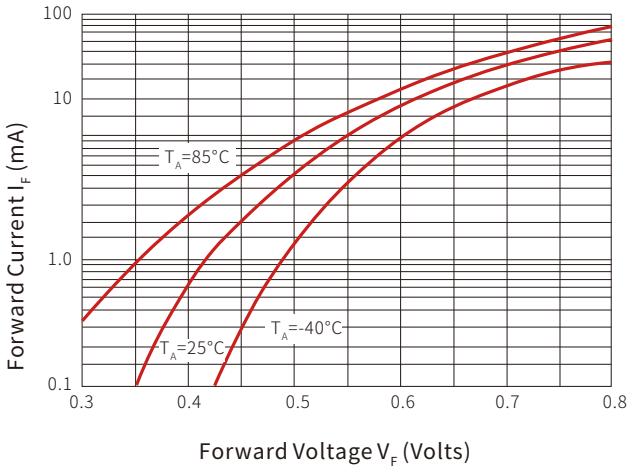
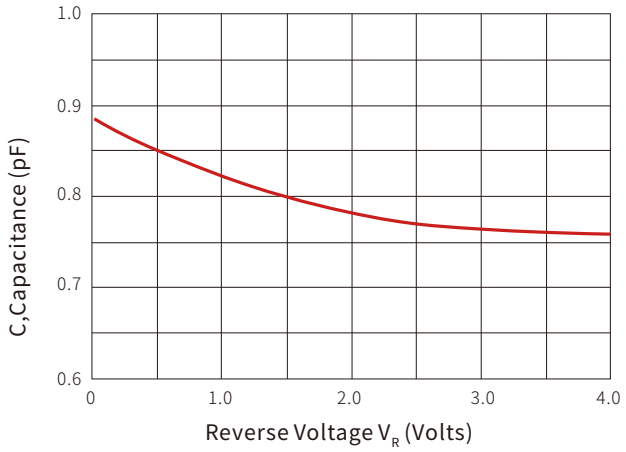
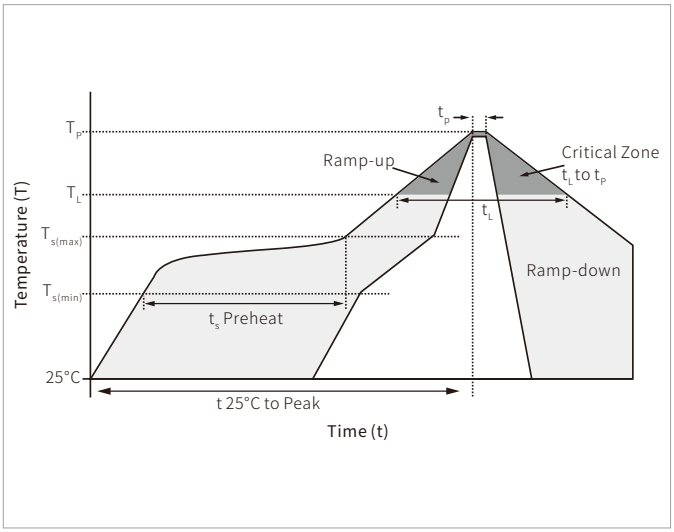


Fig 2. Capacitance

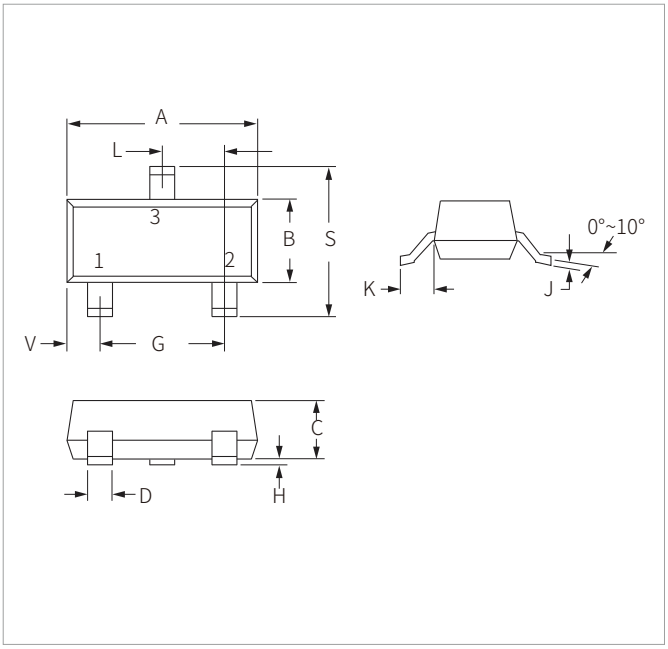


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

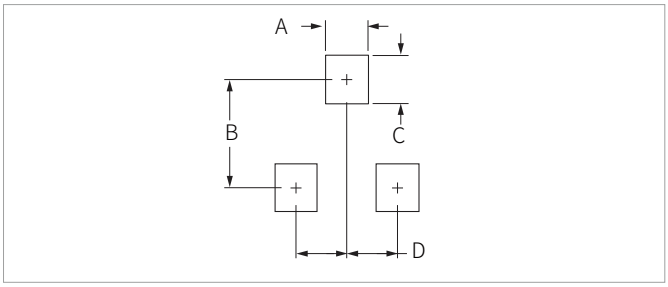


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MMBD352	SOT-23	3000PCS	7”

Headquarters
No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline
400-021-5756

Web
Https://www.semiware.com

Sales Center
Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions
Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code
Website Wechat

To find your local partner within Semiware' s global website: www.semiware.com