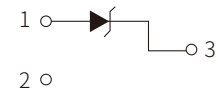


FEATURES

- | Low Zener Impedance
- | Power Dissipation of 300mW
- | High Stability and High Reliability
- | Meet AEC-Q101 Requirements



Schematic Symbol

APPLICATION

- | Linear voltage regulator
- | DC regulator
- | Small-signal surge protection

APPROVALS

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

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Power Dissipation ⁽¹⁾	P _D	300	mW
Maximum forward voltage at I _F =10mA ⁽²⁾	V _F	0.9	V
Thermal resistance junction to ambient air Warmewider stand Sperrschicht –umgebende Luft	R _{θJA}	417	°C/W
Storage temperature range	T _S	-65 to +150	°C

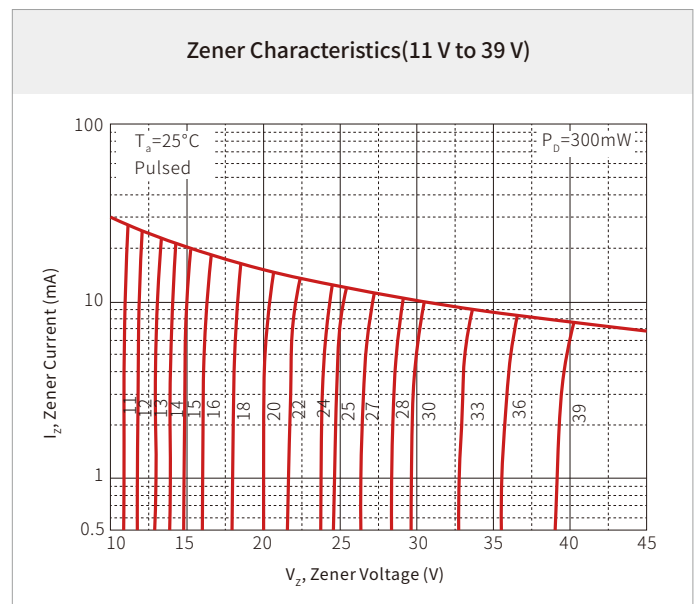
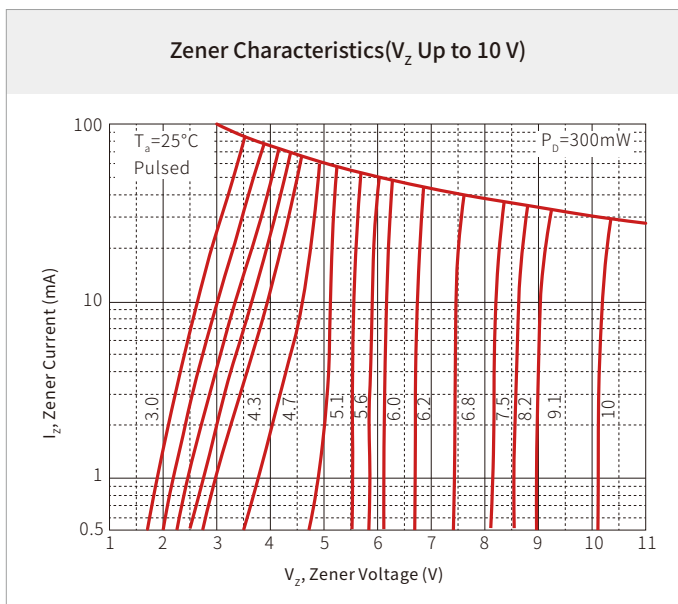
- 1)Valid provided that device terminals are kept at ambient temperature.
 2)Test with pulse, period=5ms, pulse width=300us.

ELECTRICAL CHARACTERISTICS

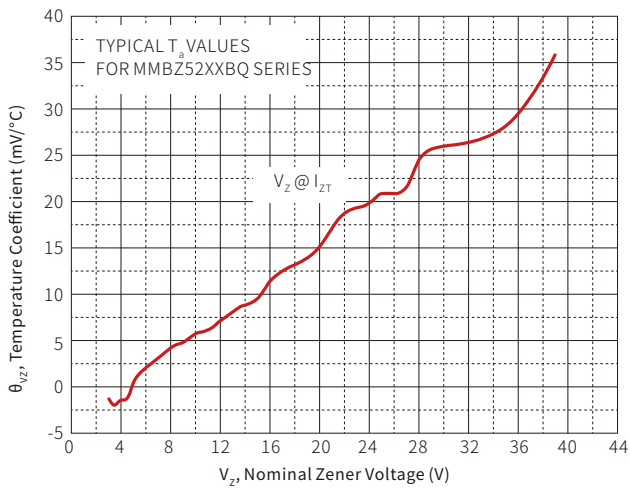
Part Number	Device Marking Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current	
		$V_Z@I_{ZT}$			I_{ZT}	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$		I_R	V_R
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)	(mA)	(μ A)	(V)	
MMBZ5221BQ	KC1	2.4	2.28	2.52	20	30	1200	0.25	100	1.0
MMBZ5222BQ	KC2	2.5	2.38	2.63	20	30	1250	0.25	100	1.0
MMBZ5223BQ	KC3	2.7	2.57	2.84	20	30	1300	0.25	75	1.0
MMBZ5224BQ	KC4	2.8	2.66	2.94	20	30	1400	0.25	75	1.0
MMBZ5225BQ	KC5	3.0	2.85	3.15	20	30	1600	0.25	50	1.0
MMBZ5226BQ	KG1	3.3	3.14	3.47	20	28	1600	0.25	25	1.0
MMBZ5227BQ	KG2	3.6	3.42	3.78	20	24	1700	0.25	15	1.0
MMBZ5228BQ	KG3	3.9	3.71	4.10	20	23	1900	0.25	10	1.0
MMBZ5229BQ	KG4	4.3	4.09	4.52	20	22	2000	0.25	5.0	1.0
MMBZ5230BQ	KG5	4.7	4.47	4.94	20	19	1900	0.25	5.0	2.0
MMBZ5231BQ	KE1	5.1	4.85	5.36	20	17	1600	0.25	5.0	2.0
MMBZ5232BQ	KE2	5.6	5.32	5.88	20	11	1600	0.25	5.0	3.0
MMBZ5233BQ	KE3	6.0	5.70	6.30	20	7	1600	0.25	5.0	3.5
MMBZ5234BQ	KE4	6.2	5.89	6.51	20	7	1000	0.25	5.0	4.0
MMBZ5235BQ	KE5	6.8	6.46	7.14	20	5	750	0.25	3	5.0
MMBZ5236BQ	KF1	7.5	7.13	7.88	20	6	500	0.25	3	6.0
MMBZ5237BQ	KF2	8.2	7.79	8.61	20	8	500	0.25	3	6.5
MMBZ5238BQ	KF3	8.7	8.27	9.14	20	8	600	0.25	3	6.5
MMBZ5239BQ	KF4	9.1	8.65	9.56	20	10	600	0.25	3	7.0
MMBZ5240BQ	KF5	10	9.50	10.50	20	17	600	0.25	3	8.0
MMBZ5241BQ	KH1	11	10.45	11.55	20	22	600	0.25	2.0	8.4
MMBZ5242BQ	KH2	12	11.40	12.60	20	30	600	0.25	1.0	9.1
MMBZ5243BQ	KH3	13	12.35	13.65	9.5	13	600	0.25	0.5	9.9
MMBZ5244BQ	KH4	14	13.30	14.70	9.0	15	600	0.25	0.1	10
MMBZ5245BQ	KH5	15	14.25	15.75	8.5	16	600	0.25	0.1	11
MMBZ5246BQ	KJ1	16	15.20	16.80	7.8	17	600	0.25	0.1	12
MMBZ5247BQ	KJ2	17	16.15	17.85	7.5	19	600	0.25	0.1	13
MMBZ5248BQ	KJ3	18	17.10	18.90	7.0	21	600	0.25	0.1	14
MMBZ5249BQ	KJ4	19	18.05	19.95	6.6	23	600	0.25	0.1	14
MMBZ5250BQ	KJ5	20	19.00	21.00	6.2	25	600	0.25	0.1	15
MMBZ5251BQ	KK1	22	20.90	23.10	5.6	29	600	0.25	0.1	17

Part Number	Device Marking Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current	
		$V_Z@I_{ZT}$			I_{ZT} (mA)	$Z_{ZT}@I_{ZT}$ (Ω)	$Z_{ZK}@I_{ZK}$		I_R (μ A)	V_R (V)
		Nom(V)	Min(V)	Max(V)			(Ω)	(mA)		
MMBZ5252BQ	KK2	24	22.80	25.20	5.2	33	600	0.25	0.1	18
MMBZ5253BQ	KK3	25	23.75	26.25	5.0	35	600	0.25	0.1	19
MMBZ5254BQ	KK4	27	25.65	28.35	5.0	41	600	0.25	0.1	21
MMBZ5255BQ	KK5	28	26.60	29.40	4.5	44	600	0.25	0.1	21
MMBZ5256BQ	KM1	30	28.50	31.50	4.2	49	600	0.25	0.1	23
MMBZ5257BQ	KM2	33	31.35	34.65	3.8	58	700	0.25	0.1	25
MMBZ5258BQ	KM3	36	34.20	37.80	3.4	70	700	0.25	0.1	27
MMBZ5259BQ	KM4	39	37.05	40.95	3.2	80	800	0.25	0.1	30
MMBZ5260BQ	KM5	43	40.85	45.15	3.0	93	900	0.25	0.1	33
MMBZ5261BQ	KN1	47	44.65	49.35	2.7	105	1000	0.25	0.1	36
MMBZ5262BQ	KN2	51	48.45	53.55	2.5	125	1100	0.25	0.1	39
MMBZ5263BQ	KN3	56	53.20	58.80	2.2	150	1300	0.25	0.1	43
MMBZ5264BQ	KN4	60	57.00	63.00	2.1	170	1400	0.25	0.1	46
MMBZ5265BQ	KN5	62	58.90	65.10	2.0	185	1400	0.25	0.1	47
MMBZ5266BQ	KP1	68	64.60	71.40	1.8	230	1600	0.25	0.1	52
MMBZ5267BQ	KP2	75	71.25	78.75	1.7	270	1700	0.25	0.1	56
MMBZ5268BQ	KP3	82	77.90	86.10	1.5	330	2000	0.25	0.1	62
MMBZ5270BQ	KP4	91	86.45	95.55	1.4	400	2300	0.25	0.1	69

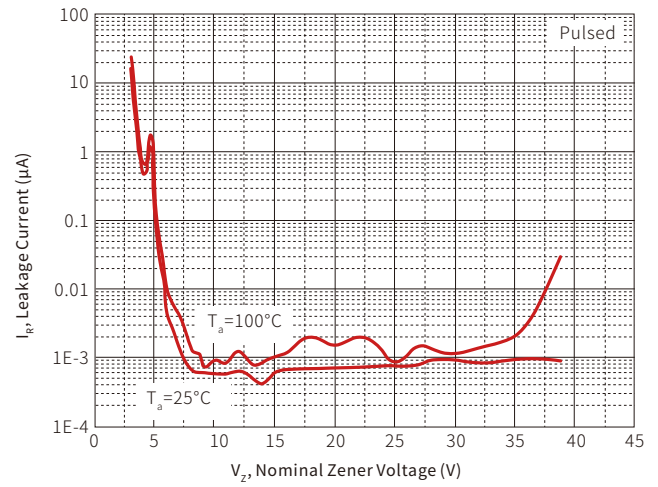
CHARACTERISTIC CURVES



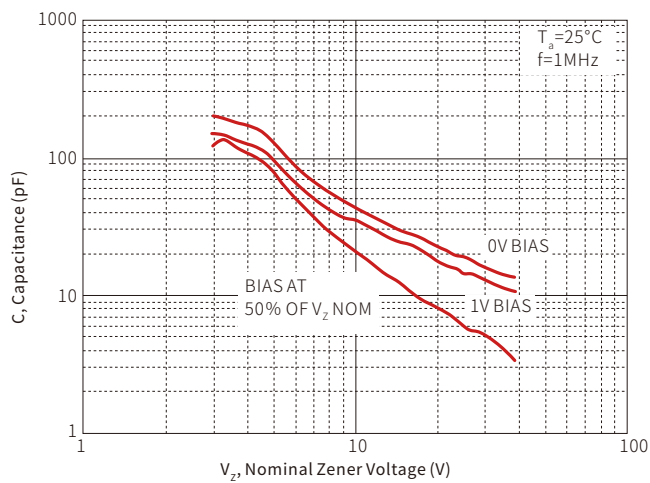
Temperature Coefficients



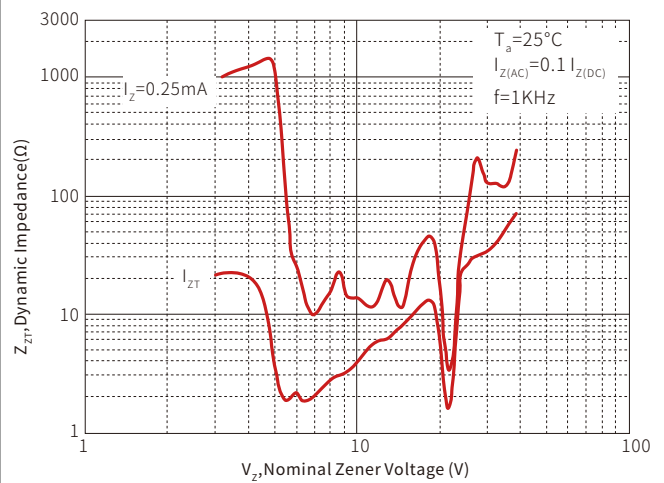
Typical Leakage Current

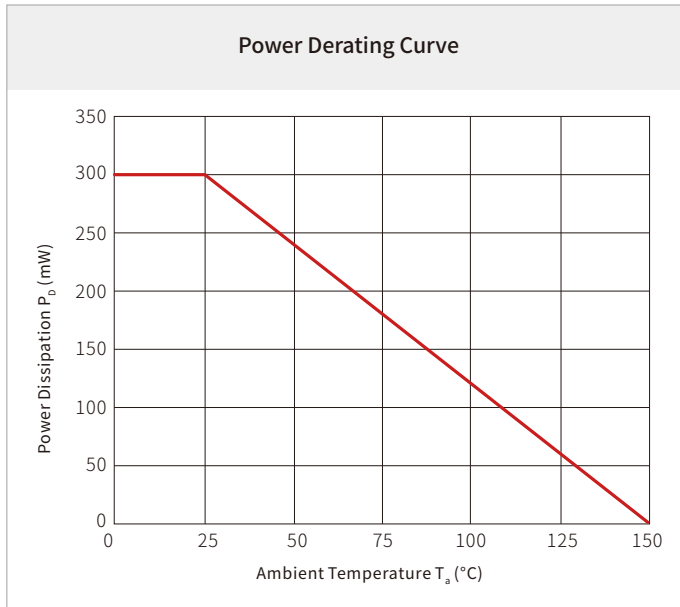


Typical Capacitance



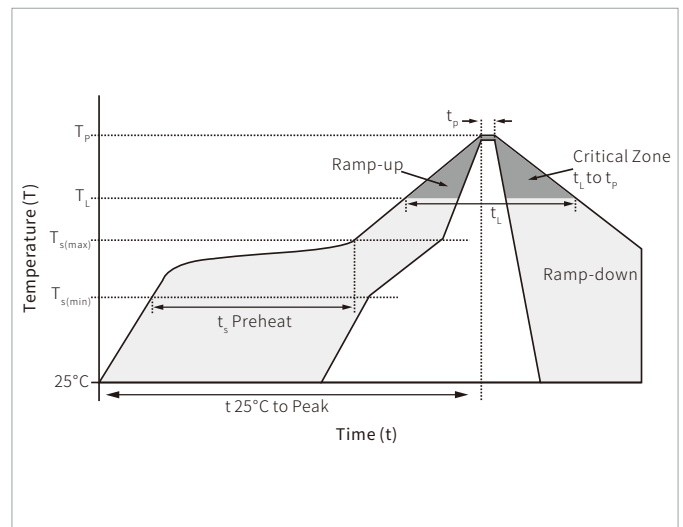
Effect of Zener Voltage on Zener Impedance



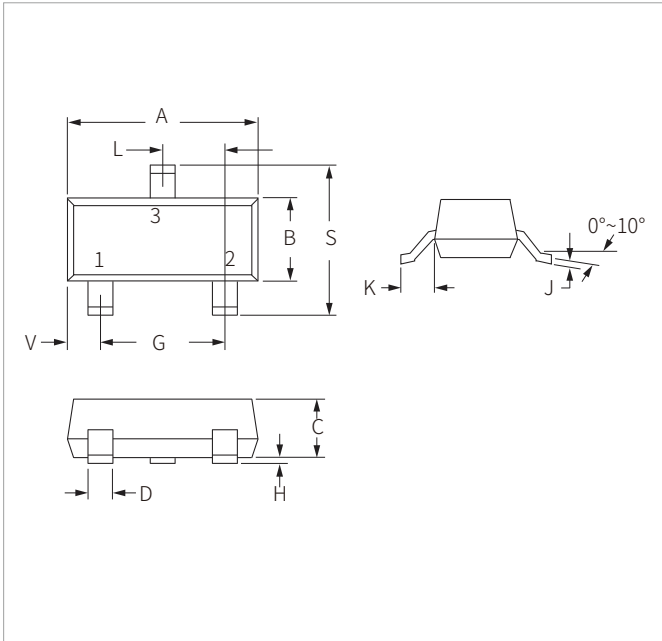


SOLDERING PARAMETERS

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

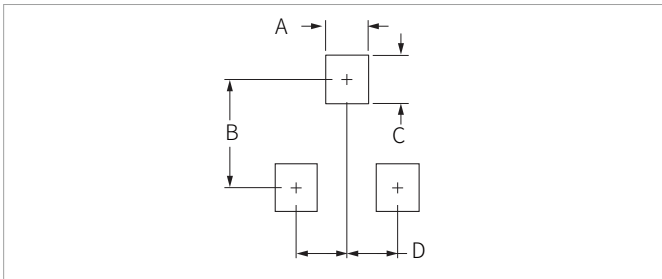


SOT-23 PACKAGE INFORMATION



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
MMBZ5221BQ-MMBZ5270BQ	SOT-23	3000PCS	7"

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