

**USMB59XX**

Preliminary

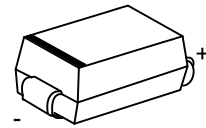
DIODE**PLASTIC SURFACE MOUNT
ZENER VOLTAGE
REGULATORS****■ DESCRIPTION**

The UTC **USMB59XX** is a surface mount silicon zener diode, it uses UTC's advanced technology to provide customers with low reverse leakage current, etc.

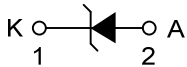
The UTC **USMB59XX** is suitable for automated assembly processes.

■ FEATURES

- * ESD Rating of Class 3 (> 16 kV) per Human Body Model
- * Flat Handling Surface for Accurate Placement
- * Package Design for Top Side or Bottom Circuit Board Mounting



SMB
(JEDEC DO-214AA)

■ SYMBOL**■ ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
USMB59XXXL-SMB-R	USMB59XXXG-SMB-R	SMB	K	A	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

USMB59XXXG-SMB-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) SMB: SMB
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE		MARKING
SMB	3V3: 3.3V	24: 24V	Cathode Band for uni-directional Only UTC BXXXX Date Code Voltage Code
	3V6: 3.6V	27: 27V	
	3V9: 3.9V	30: 30V	
	4V3: 4.3V	33: 33V	
	4V7: 4.7V	36: 36V	
	5V1: 5.1V	39: 39V	
	5V6: 5.6V	43: 43V	
	6V2: 6.2V	47: 47V	
	6V8: 6.8V	51: 51V	
	7V5: 7.5V	56: 56V	
	8V2: 8.2V	62: 62V	
	9V1: 9.1V	75: 75V	
	10: 10V	82: 82V	
	11: 11V	91: 91V	
	12: 12V	100: 100V	
	13: 13V	120: 120V	
	15: 15V	130: 130V	
	16: 16V	150: 150V	
	18: 18V	160: 160V	
	20: 20V	180: 180V	
	22: 22V	200: 200V	

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Power Dissipation ($T_A=25^{\circ}\text{C}$)	P_D	0.5	W
Operating Junction Temperature	T_J	-65 ~ +150	$^{\circ}\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. FR-4 Board,

■ ELECTRICAL CHARACTERISTICS ($V_F=1.5\text{V Max. @ } I_F=200\text{mA}$ for all types.)

Part Number	Marking Code	Nominal Zener Voltage			Zener Impedance				Reverse Leakage Current		Maximum Zener Current
		$V_Z(\text{V}) @ I_{ZT}$			$Z_{ZT} @ I_{ZT}$		$Z_{ZK} @ I_{ZK}$		$I_R @ V_R$		I_{ZM}
		MIN	TYP	MAX	Max (Ω)	I_{ZT} (mA)	Max (Ω)	I_{ZK} (mA)	Max (μA)	V_R (V)	mA
USMB5913	3.3	3.13	3.3	3.47	10	113.6	500	1	100	1	454
USMB5914	3.6	3.42	3.6	3.78	9	104.2	500	1	75	1	416
USMB5915	3.9	3.70	3.9	4.10	7.5	96.1	500	1	25	1	384
USMB5916	4.3	4.08	4.3	4.52	6	87.2	500	1	5	1	348
USMB5917	4.7	4.46	4.7	4.94	5	79.8	500	1	5	1.5	319
USMB5918	5.1	4.84	5.1	5.36	4	73.5	350	1	5	2	294
USMB5919	5.6	5.32	5.6	5.88	2	66.9	250	1	5	3	267
USMB5920	6.2	5.89	6.2	6.51	2	60.5	200	1	5	4	241
USMB5921	6.8	6.46	6.8	7.14	2.5	55.1	200	1	5	5.2	220
USMB5922	7.5	7.12	7.5	7.88	3	50	400	0.5	5	6	200
USMB5923	8.2	7.79	8.2	8.61	3.5	45.7	400	0.5	5	6.5	182
USMB5924	9.1	8.64	9.1	9.56	4	41.2	500	0.5	5	7	164
USMB5925	10	9.50	10	10.5	4.5	37.5	500	0.25	5	8	150
USMB5926	11	10.45	11	11.55	5.5	34.1	550	0.25	1	8.4	136
USMB5927	12	11.4	12	12.6	6.5	31.2	550	0.25	1	9.1	125
USMB5928	13	12.35	13	13.65	7	28.8	550	0.25	1	9.9	115
USMB5929	15	14.25	15	15.75	9	25	600	0.25	1	11.4	100
USMB5930	16	15.20	16	16.8	10	23.4	600	0.25	1	12.2	93
USMB5931	18	17.10	18	18.9	12	20.8	650	0.25	1	13.7	83
USMB5932	20	19.00	20	21	14	18.7	650	0.25	1	15.2	75
USMB5933	22	20.90	22	23.1	17.5	17	650	0.25	1	16.7	68
USMB5934	24	22.80	24	25.2	19	15.6	700	0.25	1	18.2	62
USMB5935	27	25.65	27	28.35	23	13.9	700	0.25	1	20.6	55
USMB5936	30	28.50	30	31.5	28	12.5	750	0.25	1	22.8	50
USMB5937	33	31.35	33	34.65	33	11.4	800	0.25	1	25.1	45
USMB5938	36	34.20	36	37.8	38	10.4	850	0.25	1	27.4	41
USMB5939	39	37.05	39	40.95	45	9.6	900	0.25	1	29.7	38
USMB5940	43	40.85	43	45.15	53	8.7	950	0.25	1	32.7	34
USMB5941	47	44.65	47	49.35	67	8	1000	0.25	1	35.8	31
USMB5942	51	48.45	51	53.55	70	7.3	1100	0.25	1	38.8	29
USMB5943	56	53.20	56	58.8	86	6.7	1300	0.25	1	42.6	26
USMB5944	62	58.90	62	65.1	100	6	1500	0.25	1	47.1	24
USMB5945	68	64.60	68	71.4	120	5.5	1700	0.25	1	51.7	22
USMB5946	75	71.25	75	78.75	140	5	2000	0.25	1	56	20
USMB5947	82	77.90	82	86.1	160	4.6	2500	0.25	1	62.2	18
USMB5948	91	86.45	91	95.55	200	4.1	3000	0.25	1	69.2	16
USMB5949	100	95.00	100	105	250	3.7	3100	0.25	1	76	15

■ ELECTRICAL CHARACTERISTICS (Cont.)

Part Number	Marking Code	Nominal Zener Voltage			Zener Impedance				Reverse Leakage Current		Maximum Zener Current
		$V_Z(V) @ I_{ZT}$			$Z_{ZT} @ I_{ZT}$		$Z_{ZK} @ I_{ZK}$		$I_R @ V_R$		I_{ZM}
		MIN	TYP	MAX	Max (Ω)	I_{ZT} (mA)	Max (Ω)	I_{ZK} (mA)	Max (μA)	V_R (V)	mA
USMB5951	120	114	120	126	380	3.1	4500	0.25	1	91.2	12
USMB5952	130	123.5	130	136.5	450	2.9	5000	0.25	1	98.8	11
USMB5953	150	142.5	150	157.5	600	2.5	6000	0.25	1	114	10
USMB5954	160	152	160	168	700	2.3	6500	0.25	1	121.6	9
USMB5955	180	171	180	189	900	2.1	7000	0.25	1	136.8	8
USMB5956	200	190	200	210	1200	1.9	8000	0.25	1	152	7

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.