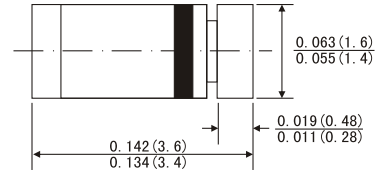


### FEATURES

- In MiniMELF case especially for automated insertion  
Standard Zener voltage tolerance is 5%. Add suffix "B" for 2% tolerance  
Other tolerance, non standard and higher zener voltages are upon request
- High temperature soldering guaranteed: 260°C/10 seconds at terminals

### MiniMELF



### MECHANICAL DATA

- Case: MiniMELF(SOD-80) glass case
- Weight: Approx. 0.05 gram

Dimensions in inches and (millimeters)

### ABSOLUTE MAXIMUM RATINGS(LIMITING VALUES) (TA=25°C)

	<i>Symbols</i>	<i>Value</i>	<i>Units</i>
Zener current see table "Characteristics"			
Power dissipation at TA=25°C	P <sub>tot</sub>	500 <sup>1)</sup>	mW
Junction temperature	T <sub>J</sub>	175	°C
Storage temperature range	T <sub>STG</sub>	-55 to+175	°C

### ELECTRICAL CHARACTERISTICS (TA=25°C)

	<i>Symbols</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Units</i>
Thermal resistance junction to ambient	R <sub>θJA</sub>			300 <sup>1)</sup>	K/W
Forward Voltage at I <sub>F</sub> = 100mA	V <sub>F</sub>			1	V

1) Valid provided that electrodes case is kept at ambient temperature

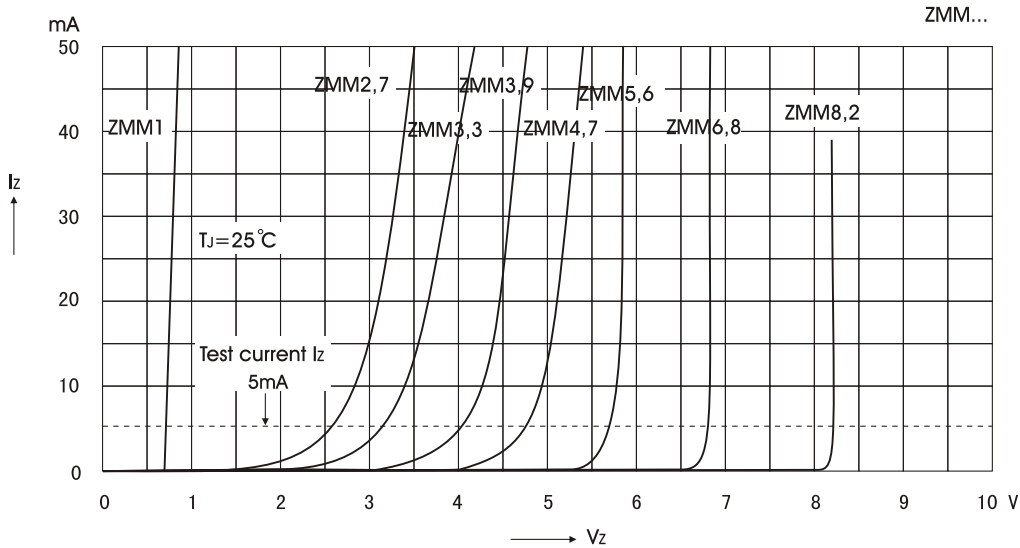
Type	Zener Voltage range <sup>1)</sup>		Maximum zener impedance <sup>1)</sup>				Maximum Reverse Leakage Current			Temp Coefficient of zener voltage
	V <sub>ZNOM</sub> <sup>3)</sup>		I <sub>ZT</sub>		r <sub>ZT</sub> and r <sub>ZJK</sub> at I <sub>ZK</sub>		I <sub>R</sub> and I <sub>R</sub> <sup>2)</sup> at V <sub>R</sub>			TK <sub>vz</sub>
	V	mA	V	Ω	Ω	mA	μA	μA	V	%/K
ZMM1 <sub>3)</sub>	0.75	5	0.7...0.8	<8	<50	1	--	--	1.0	-0.26...-0.23
ZMM2.0	2		1.9...2.1	<85	<600		<100	<200		-0.09...-0.06
ZMM2.4	2.4		2.28...2.56	<85	<600		<50	<100		-0.09...-0.06
ZMM2.7	2.7		2.5...2.9	<85	<600		<10	<50		-0.09...-0.06
ZMM3.0	3		2.8...3.2	<85	<600		<4	<40		-0.08...-0.05
ZMM3.3	3.3		3.1...3.5	<85	<600		<2	<40		-0.08...-0.05
ZMM3.6	3.6		3.4...3.8	<85	<600		<2	<40		-0.08...-0.05
ZMM3.9	3.9		3.7...4.1	<85	<600		<2	<40		-0.08...-0.05
ZMM4.3	4.3		4.0...4.6	<75	<600		<1	<20		-0.06...-0.03
ZMM4.7	4.7		4.4...5.0	<60	<600		<0.5	<10		-0.05...+0.02
ZMM5.1	5.1		4.8...5.4	<35	<550		0.1	<2	2	-0.02...+0.02
ZMM5.6	5.6		5.2...6.0	<25	<450					-0.05...+0.05
ZMM6.2	6.2		5.8...6.6	<10	<200					0.03...0.06
ZMM6.8	6.8		6.4...7.2	<8	<150					0.03...0.07
ZMM7.5	7.5		7.0...7.9	<7	<50					0.03...0.08
ZMM8.2	8.2		7.7...8.7	<7	<50					0.03...0.09
ZMM9.1	9.1		8.5...9.6	<10	<50					0.03...0.1
ZMM10	10		9.4...10.6	<15	<70					0.03...0.11
ZMM11	11		10.4...11.6	<20	<70					0.03...0.11
ZMM12	12		11.4...12.7	<20	<90					0.03...0.11
ZMM13	13	12.4...14.1	<26	<110	0.03...0.11					
ZMM15	20	13.8...15.6	<30	<110	0.03...0.11					
ZMM16	15	15.3...17.1	<40	<170	0.03...0.11					
ZMM18	22	16.8...19.1	<50	<170	0.03...0.11					
ZMM20	16	18.8...21.2	<55	<220	0.03...0.11					
ZMM22	24	20.8...23.3	<55	<220	0.04...0.12					
ZMM24	27	22.8...25.6	<80	<220	0.04...0.12					
ZMM27	18	25.1...28.9	<80	<220	0.04...0.12					
ZMM30	30	28...32	<80	<220	0.04...0.12					
ZMM33	33	31...35	<80	<220	0.04...0.12					
ZMM36	36	34...38	<80	<220	0.04...0.12					
ZMM39	39	37...41	<90	<500	0.25	<5	30	0.04...0.12		
ZMM43	43	40...46	<90	<500				0.04...0.12		
ZMM47	47	44...50	<110	<600				0.04...0.12		
ZMM51	51	48...54	<125	<700				0.04...0.12		
ZMM56	56	52...60	<135	<700				0.04...0.12		
ZMM62	62	58...66	<150	<1000				0.04...0.12		
ZMM68	68	64...72	<200	<1000				0.04...0.12		
ZMM75	75	70...79	<250	<1000				0.04...0.12		
ZMM82	82	77...87	<300	<1500				0.05...0.12		
ZMM91	91	85...96	<450	<2000				0.05...0.12		
ZMM100	100	94...106	<450	<5000	0.1	<10	75	0.05...0.12		
ZMM110	110	104...116	<600	<5000				0.05...0.12		
ZMM120	120	114...127	<800	<5500				0.05...0.12		
ZMM130	130	124...141	<950	<6000				0.05...0.12		
ZMM150	150	138...156	<1250	<6500				0.05...0.12		
ZMM160	160	153...171	<1400	<7000				0.05...0.12		
ZMM180	180	168...191	<1700	<8500				0.05...0.12		
ZMM200	200	188...212	<2000	<10000				0.05...0.12		

1) Tested with pulse tp=20ms

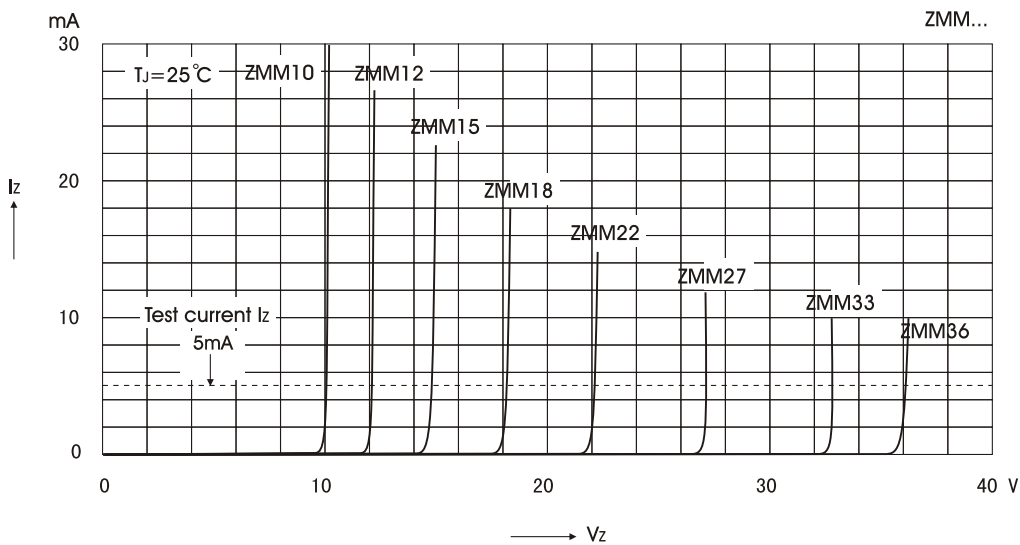
2) Valid provided that electrodes are kept at ambient temperature

3) The ZMM1 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z". Connect the cathode to the negative pole.

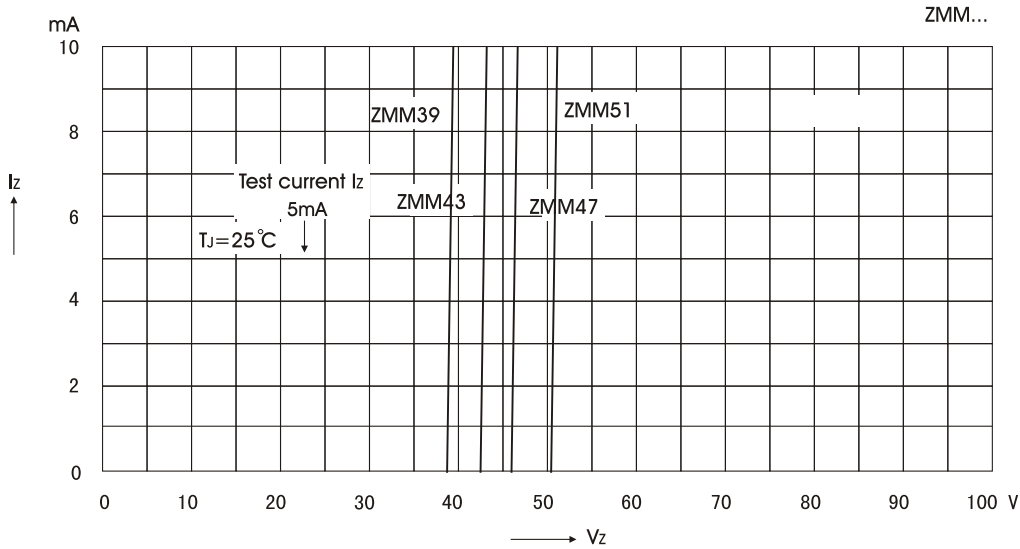
### BREAKDOWN CHARACTERISTICS AT $T_J = \text{CONSTANT}$ (PULSED)



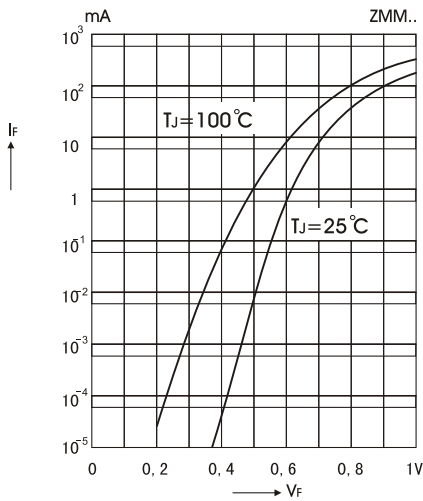
### BREAKDOWN CHARACTERISTICS AT $T_J = \text{CONSTANT}$ (PULSED)



### BREAKDOWN CHARACTERISTICS AT $T_J = \text{CONSTANT}$ (PULSED)

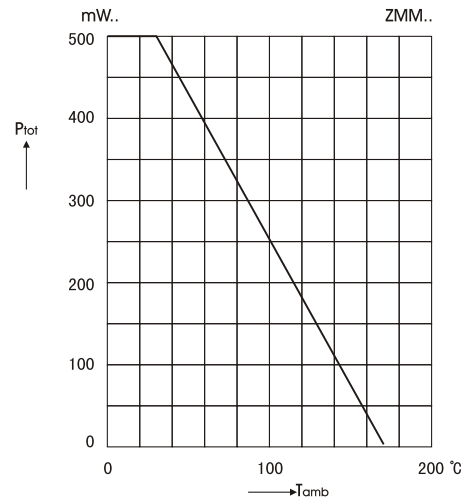


### Forward Characteristics

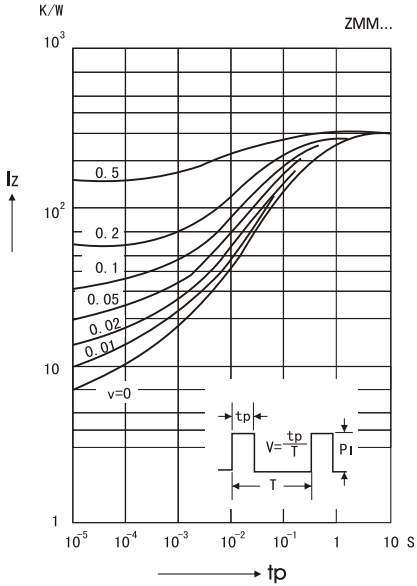


### Admissible power dissipation versus ambient temperature

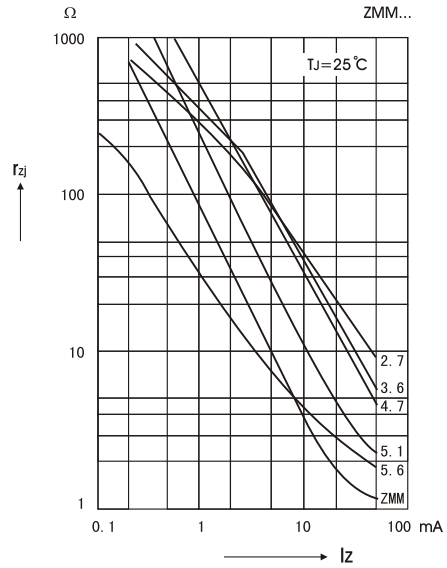
valid provided that electrodes are kept at ambient temperature



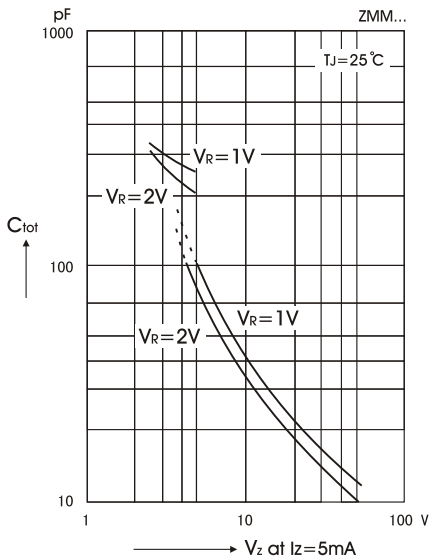
Pulse thermal resistance versus pulse duration



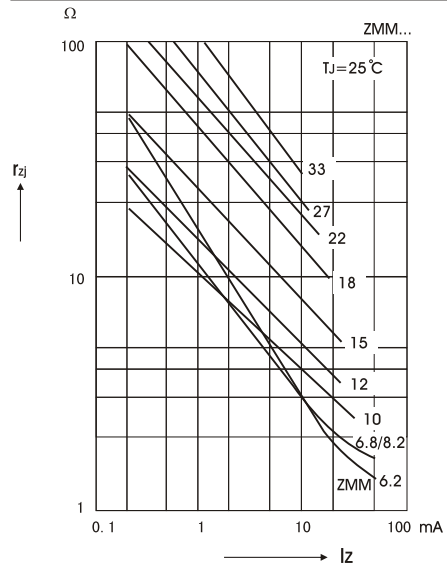
Dynamic resistance versus Zener current



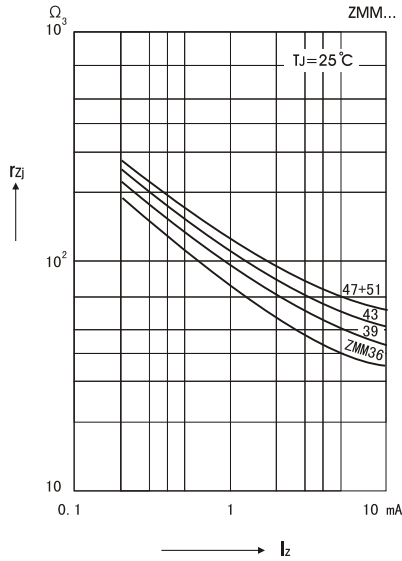
Capacitance versus Zener voltage



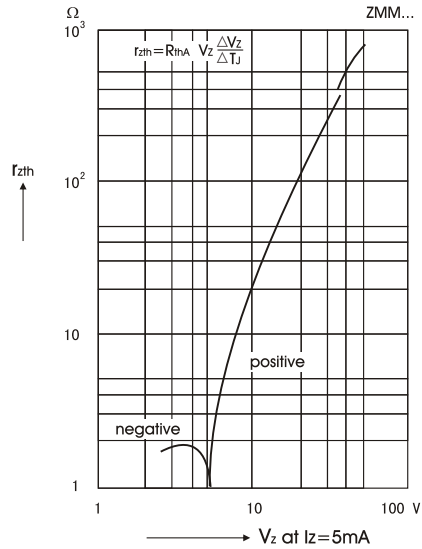
Dynamic resistance versus Zener current



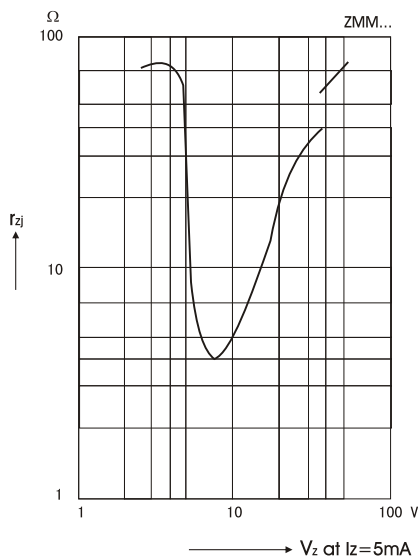
Dynamic resistance versus Zener current



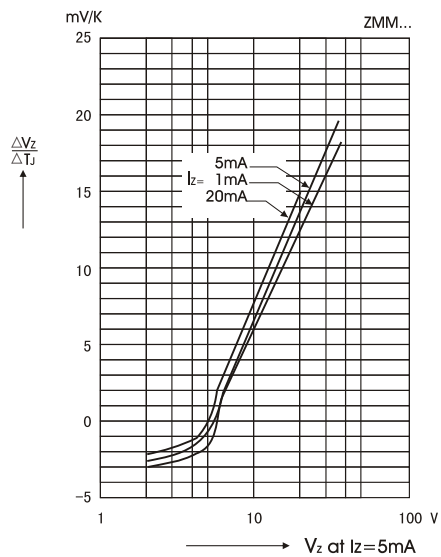
Thermal differential resistance versus Zener voltage



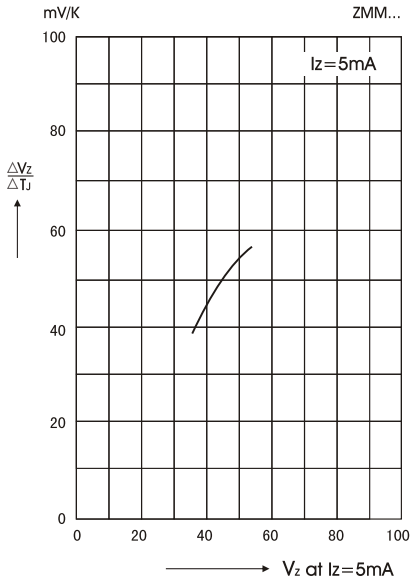
Dynamic resistance versus Zener voltage



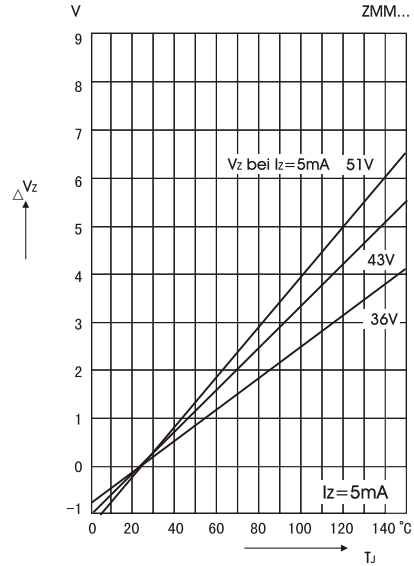
Temperature dependence of Zener voltage versus voltage



Temperature dependence of Zener voltage versus voltage

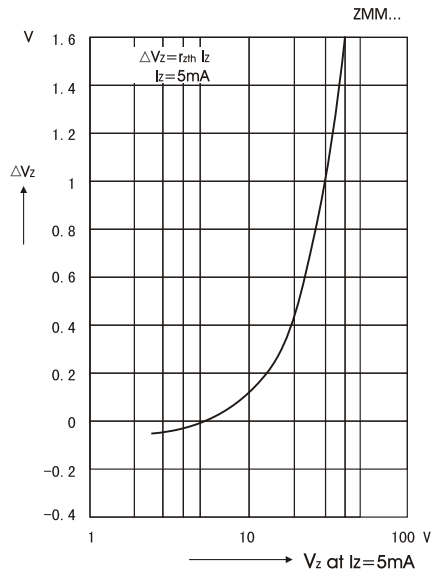
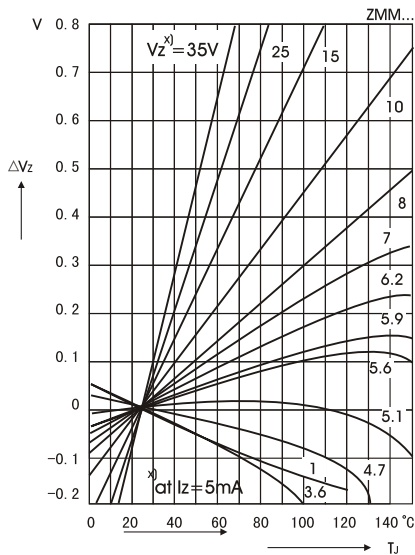


Change of Zener voltage versus junction temperature

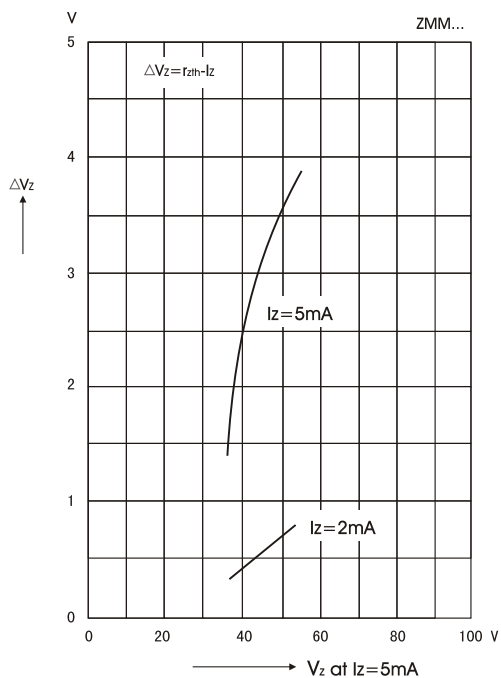


Change of Zener voltage versus junction temperature

Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage





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