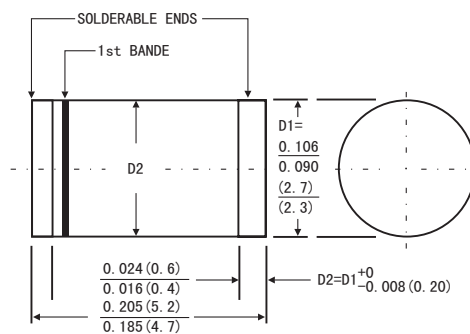


### FEATURES

- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### MELF(DO-213AB)



Dimensions in inches and (millimeters)

### MECHANICAL DATA

- Case: JEDEC MELF(DO-213AB) glass case
- Terminals: Solder Plated, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.0085ounce, 0.25 gram

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

|   | Symbols          | Value       | Units |
|---|------------------|-------------|-------|
| Zener current see table "Characteristics" |                  |             |       |
| Power dissipation at TA=25°C              | P <sub>tot</sub> | 1.3         | W     |
| Junction temperature                      | T <sub>J</sub>   | 200         | °C    |
| Storage temperature range                 | T <sub>STG</sub> | -55 to +200 | °C    |

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

|  | Symbols          | Min | Typ | Max | Units |
|--|------------------|-----|-----|-----|-------|
| Thermal resistance junction to ambient   | R <sub>θJA</sub> |     |     | 130 | K/W   |
| Forward voltage at I <sub>F</sub> =200mA | V <sub>F</sub>   |     |     | 1.2 | V     |

# ZM1. 3C... SILICON PLANAR ZENER DIODES

| Type        | Zener Voltage range <sup>1)</sup> |                                     |             | Dynamic resistance                                      |       |      | Reverse leakage current          |     | Temp Coefficient of zener voltage |
|-------------|-----------------------------------|-------------------------------------|-------------|---|-------|------|----------------------------------|-----|-----------------------------------|
|             | V <sub>ZNOM</sub>                 | I <sub>ZT</sub> for V <sub>ZT</sub> |             | r <sub>ZK</sub> and r <sub>ZJK</sub> at I <sub>ZK</sub> |       |      | I <sub>R</sub> at V <sub>R</sub> |     | TK <sub>VZ</sub>                  |
|             | V                                 | mA                                  | V           | Ω   | Ω     | mA   | μA                               | V   | %/K                               |
| ZM 1.3C 2V7 | 2.7                               | 80                                  | 2.5...2.9   | <20   | <400  | 1    | <150                             | 1   | -0.08...-0.05                     |
| ZM 1.3C 3V0 | 3.0                               | 80                                  | 2.8...3.2   | <20   | <400  | 1    | <100                             | 1   | -0.08...-0.05                     |
| ZM 1.3C 3V3 | 3.3                               | 70                                  | 3.1...3.5   | <20   | <400  | 1    | <40                              | 1   | -0.08...-0.05                     |
| ZM 1.3C 3V6 | 3.6                               | 60                                  | 3.4...3.8   | <15   | <500  | 1    | <20                              | 1   | -0.08...-0.05                     |
| ZM 1.3C 3V9 | 3.9                               | 60                                  | 3.7...4.1   | <15   | <500  | 1    | <10                              | 1   | -0.07...-0.02                     |
| ZM 1.3C 4V3 | 4.3                               | 50                                  | 4.0...4.6   | <13   | <500  | 1    | <3                               | 1   | -0.07...+0.01                     |
| ZM 1.3C 4V7 | 4.7                               | 45                                  | 4.4...5.0   | <13   | <600  | 1    | <3                               | 1   | -0.03...+0.04                     |
| ZM 1.3C 5V1 | 5.1                               | 45                                  | 4.8...5.4   | <10   | <500  | 1    | <1                               | 1.5 | -0.01...+0.04                     |
| ZM 1.3C 5V6 | 5.6                               | 45                                  | 5.2...6.0   | <7  | <400  | 1    | <1                               | 2   | 0...+0.045                        |
| ZM 1.3C 6V2 | 6.2                               | 35                                  | 5.8...6.6   | <4  | <300  | 1    | <1                               | 3   | +0.01...+0.055                    |
| ZM 1.3C 6V8 | 6.8                               | 35                                  | 6.4...7.2   | <3.5  | <300  | 1    | <1                               | 4   | +0.015...+0.06                    |
| ZM 1.3C 7V5 | 7.5                               | 35                                  | 7.0...7.9   | <3  | <200  | 0.5  | <1                               | 4.5 | +0.02...+0.065                    |
| ZM 1.3C 8V2 | 8.2                               | 25                                  | 7.7...8.7   | <5  | <200  | 0.5  | <1                               | 6.2 | 0.03...0.07                       |
| ZM 1.3C 9V1 | 9.1                               | 25                                  | 8.5...9.6   | <5  | <200  | 0.5  | <1                               | 6.8 | 0.035...0.075                     |
| ZM 1.3C 10  | 10                                | 25                                  | 9.4...10.6  | <7  | <200  | 0.5  | <0.5                             | 7   | 0.04...0.08                       |
| ZM 1.3C 11  | 11                                | 20                                  | 10.4...11.6 | <8  | <300  | 0.5  | <0.5                             | 8.2 | 0.045...0.08                      |
| ZM 1.3C 12  | 12                                | 20                                  | 11.4...12.7 | <9  | <350  | 0.5  | <0.5                             | 9.1 | 0.045...0.085                     |
| ZM 1.3C 13  | 13                                | 20                                  | 12.4...14.1 | <10   | <400  | 0.5  | <0.5                             | 10  | 0.05...0.085                      |
| ZM 1.3C 15  | 15                                | 15                                  | 13.8...15.6 | <15   | <500  | 0.5  | <0.5                             | 11  | 0.055...0.09                      |
| ZM 1.3C 16  | 16                                | 15                                  | 15.3...17.1 | <15   | <500  | 0.5  | <0.5                             | 12  | 0.055...0.09                      |
| ZM 1.3C 18  | 18                                | 15                                  | 16.8...19.1 | <20   | <500  | 0.5  | <0.5                             | 13  | 0.06...0.09                       |
| ZM 1.3C 20  | 20                                | 10                                  | 18.8...21.2 | <24   | <600  | 0.5  | <0.5                             | 15  | 0.06...0.09                       |
| ZM 1.3C 22  | 22                                | 10                                  | 20.8...23.3 | <25   | <600  | 0.5  | <0.5                             | 16  | 0.06...0.095                      |
| ZM 1.3C 24  | 24                                | 10                                  | 22.8...25.6 | <25   | <600  | 0.5  | <0.5                             | 18  | 0.06...0.095                      |
| ZM 1.3C 27  | 27                                | 8                                   | 25.1...28.9 | <30   | <750  | 0.25 | <0.5                             | 20  | 0.06...0.095                      |
| ZM 1.3C 30  | 30                                | 8                                   | 28...32     | <30   | <1000 | 0.25 | <0.5                             | 22  | 0.06...0.095                      |
| ZM 1.3C 33  | 33                                | 8                                   | 31...35     | <35   | <1000 | 0.25 | <0.5                             | 24  | 0.06...0.095                      |
| ZM 1.3C 36  | 36                                | 8                                   | 34...38     | <40   | <1000 | 0.25 | <0.5                             | 27  | 0.06...0.095                      |
| ZM 1.3C 39  | 39                                | 6                                   | 37...41     | <50   | <1000 | 0.25 | <0.5                             | 30  | 0.06...0.095                      |
| ZM 1.3C 43  | 43                                | 6                                   | 40...46     | <50   | <1000 | 0.25 | <0.5                             | 33  | 0.06...0.095                      |
| ZM 1.3C 47  | 47                                | 4                                   | 44...50     | <90   | <1500 | 0.25 | <0.5                             | 36  | 0.06...0.095                      |
| ZM 1.3C 51  | 51                                | 4                                   | 48...54     | <115  | <1500 | 0.25 | <0.5                             | 39  | 0.06...0.095                      |
| ZM 1.3C 56  | 56                                | 4                                   | 52...60     | <120  | <2000 | 0.25 | <0.5                             | 43  | 0.06...0.095                      |
| ZM 1.3C 62  | 62                                | 4                                   | 58...66     | <125  | <2000 | 0.25 | <0.5                             | 47  | 0.06...0.095                      |
| ZM 1.3C 68  | 68                                | 4                                   | 64...72     | <130  | <2000 | 0.25 | <0.5                             | 51  | 0.06...0.095                      |
| ZM 1.3C 75  | 75                                | 4                                   | 70...79     | <135  | <2000 | 0.25 | <0.5                             | 56  | 0.06...0.095                      |
| ZM 1.3C 82  | 82                                | 2.7                                 | 77...87     | <200  | <3000 | 0.25 | <0.5                             | 62  | 0.07...0.10                       |
| ZM 1.3C 91  | 91                                | 2.7                                 | 85...96     | <250  | <3000 | 0.25 | <0.5                             | 68  | 0.07...0.10                       |
| ZM 1.3C 100 | 100                               | 2.7                                 | 94...106    | <350  | <3000 | 0.25 | <0.5                             | 75  | 0.07...0.11                       |
| ZM 1.3C 110 | 110                               | 2.7                                 | 104...116   | <450  | <4000 | 0.25 | <0.5                             | 82  | 0.07...0.11                       |
| ZM 1.3C 120 | 120                               | 2                                   | 114...127   | <550  | <4500 | 0.25 | <0.5                             | 91  | 0.07...0.11                       |
| ZM 1.3C 130 | 130                               | 2                                   | 124...141   | <700  | <5000 | 0.25 | <0.5                             | 100 | 0.07...0.11                       |
| ZM 1.3C 150 | 150                               | 2                                   | 138...156   | <1000   | <6000 | 0.25 | <0.5                             | 110 | 0.07...0.11                       |
| ZM 1.3C 160 | 160                               | 1.5                                 | 153...171   | <1100   | <6500 | 0.25 | <0.5                             | 120 | 0.07...0.11                       |
| ZM 1.3C 180 | 180                               | 1.5                                 | 168...191   | <1200   | <7000 | 0.25 | <0.5                             | 130 | 0.07...0.11                       |
| ZM 1.3C 200 | 200                               | 1.5                                 | 188...212   | <1500   | <8000 | 0.25 | <0.5                             | 150 | 0.07...0.11                       |

Note 1) Tested with pulse tp=20ms