



## SINGLE LINE TVS DIODE FOR ESD PROTECTION ELECTRONICS PRODUCTS

### DESCRIPTION

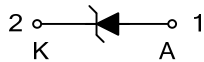
The UTC **USD03W THRU USD36W** is single line tvs diode, it uses UTC's advanced technology to provide customers with low leakage current, low operating and clamping voltage, etc.

The UTC **USD03W THRU USD36W** is suitable for ESD Protection.

### FEATURES

- \* 320 Watts peak pulses power(  $t_p=8/20\mu s$ )
- \* Low clamping voltage and leakage current
- \* Use in portable electronics

### SYMBOL

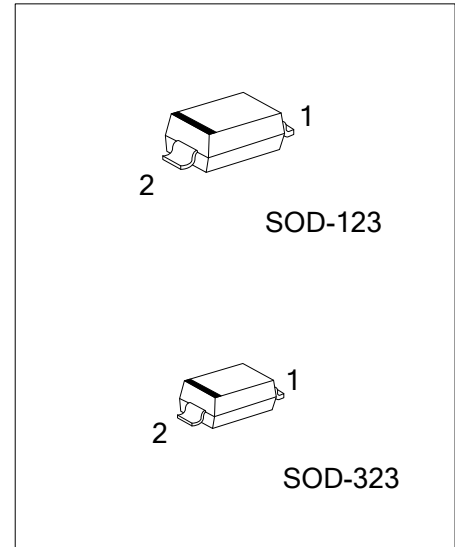


### ORDERING INFORMATION

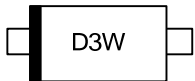
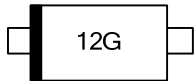
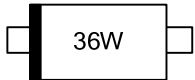
| Ordering Number |               | Package | Pin Assignment |   | Packing   |
|-----------------|---------------|---------|----------------|---|-----------|
| Lead Free       | Halogen Free  |         | 1              | 2 |           |
| USD03WL-CA2-R   | USD03WG-CA2-R | SOD-123 | A              | K | Tape Reel |
| USD05WL-CA2-R   | USD05WG-CA2-R | SOD-123 | A              | K | Tape Reel |
| USD08WL-CA2-R   | USD08WG-CA2-R | SOD-123 | A              | K | Tape Reel |
| USD12WL-CA2-R   | USD12WG-CA2-R | SOD-123 | A              | K | Tape Reel |
| USD15WL-CA2-R   | USD15WG-CA2-R | SOD-123 | A              | K | Tape Reel |
| USD24WL-CA2-R   | USD24WG-CA2-R | SOD-123 | A              | K | Tape Reel |
| USD36WL-CA2-R   | USD36WG-CA2-R | SOD-123 | A              | K | Tape Reel |
| USD03WL-CB2-R   | USD03WG-CB2-R | SOD-323 | A              | K | Tape Reel |
| USD05WL-CB2-R   | USD05WG-CB2-R | SOD-323 | A              | K | Tape Reel |
| USD08WL-CB2-R   | USD08WG-CB2-R | SOD-323 | A              | K | Tape Reel |
| USD12WL-CB2-R   | USD12WG-CB2-R | SOD-323 | A              | K | Tape Reel |
| USD15WL-CB2-R   | USD15WG-CB2-R | SOD-323 | A              | K | Tape Reel |
| USD24WL-CB2-R   | USD24WG-CB2-R | SOD-323 | A              | K | Tape Reel |
| USD36WL-CB2-R   | USD36WG-CB2-R | SOD-323 | A              | K | Tape Reel |

Note: Pin Assignment: K: Cathode      A: Anode

|                                                                                         |                                                                                                                |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <p>USD03WG-CA2-R</p> <p>(1) Packing Type<br/>(2) Package Type<br/>(3) Green Package</p> | <p>(1) R: Tape Reel<br/>(2) CA2: SOD-123, CB2: SOD-323<br/>(3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|



## ■ MARKING

| Ordering Number | SOD-123                                                                            | SOD-323                                                                              |
|-----------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| USD03W          |   |   |
| USD05W          |   |   |
| USD08W          |   |   |
| USD12W          |   |   |
| USD15W          |   |   |
| USD24W          |   |   |
| USD36W          |  |  |

## ■ ABSOLUTE MAXIMUM RATINGS

| PARAMETER                            | SYMBOL    | RATINGS    | UNIT |
|--------------------------------------|-----------|------------|------|
| Peak Pulse Power ( $t_p=8/20\mu s$ ) | $P_{PK}$  | 320        | W    |
| ESD Voltage                          | $V_{ESD}$ | 25         | kV   |
| Operating Junction Temperature       | $T_J$     | -55 ~ +150 | °C   |
| Operating Storage Temperature        | $T_{STG}$ | -55 ~ +150 | °C   |

Note: 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.

## ■ ELECTRICAL CHARACTERISTICS

| PART<br>NUMBER | Reverse<br>Stand-Off<br>Voltage | Reverse<br>Breakdown<br>Voltage |             | Reverse Leakage<br>Current |            | Clamping Voltage<br>( $t_p=8/20\mu s$ ) |               | Off State Junction Capacitance |          |            |          |
|----------------|---------------------------------|---------------------------------|-------------|----------------------------|------------|-----------------------------------------|---------------|--------------------------------|----------|------------|----------|
|                | $V_{RWM}$                       | $V_{BR} @ I_T$                  |             | $I_R @ V_R$                |            | $V_C @ I_{PP}$                          |               | $C_J @ f$                      |          |            |          |
|                |                                 |                                 |             |                            |            |                                         |               | 0Vdc Bias                      |          | 5Vdc Bias  |          |
|                | Max.<br>V                       | Min.<br>V                       | $I_T$<br>mA | Max.<br>$\mu A$            | $V_R$<br>V | Max.<br>V                               | $I_{PP}$<br>A | Typ.<br>pF                     | f<br>MHz | Typ.<br>pF | f<br>MHz |
| USD03W         | 3.3                             | 4.0                             | 1           | 125                        | 3.3        | 6.5                                     | 1             | 450                            | 1        | 150        | 1        |
| USD05W         | 5.0                             | 6.0                             | 1           | 10                         | 5          | 9.8                                     | 1             | 300                            | 1        | 100        | 1        |
| USD08W         | 8.0                             | 8.5                             | 1           | 10                         | 8          | 13.4                                    | 1             | 150                            | 1        | 80         | 1        |
| USD12W         | 12                              | 13.3                            | 1           | 1                          | 12         | 19                                      | 1             | 130                            | 1        | 50         | 1        |
| USD15W         | 15                              | 16.7                            | 1           | 1                          | 15         | 24                                      | 1             | 120                            | 1        | 30         | 1        |
| USD24W         | 24                              | 26.7                            | 1           | 1                          | 24         | 43                                      | 1             | 80                             | 1        | 10         | 1        |
| USD36W         | 36                              | 40                              | 1           | 1                          | 36         | 60                                      | 1             | 30                             | 1        | 1          | 1        |

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