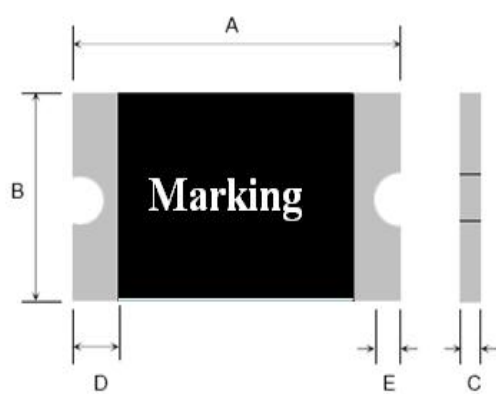


### Features:

- ✧ RoHS Compliant & Halogen Free
- ✧ faster tripping, 0805 Dimension, Surface mountable, Solid state
- ✧ Operation Current: 0.05A~1.10A
- ✧ Maximum Voltage: 6V~24Vdc
- ✧ Operating Temperature: -40℃TO 85℃



### Product Dimensions



Terminal pad materials :Tin-Plated Nickle-copper  
Terminal pad solderability : Meets EIA specification  
RS 186-9E and ANSI/J-STD-002 Category 3.

Pig.1

Unit : mm

| Part Number    | Marking | A    |      | B    |      | C    |      | D    | E    |
|----------------|---------|------|------|------|------|------|------|------|------|
|                |         | Min  | Max  | Min  | Max  | Min  | Max  | Min  | Min  |
| WDS0805-005    | 1       | 2.00 | 2.20 | 1.20 | 1.50 | 0.45 | 1.00 | 0.20 | 0.10 |
| WDS0805-010    | 1       | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 1.00 | 0.20 | 0.10 |
| WDS0805-010-24 | 1       | 2.00 | 2.20 | 1.20 | 1.50 | 0.45 | 1.00 | 0.20 | 0.10 |
| WDS0805-020    | 2       | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 1.00 | 0.20 | 0.10 |
| WDS0805-025    | 2       | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 1.00 | 0.20 | 0.10 |
| WDS0805-030    | 3       | 2.00 | 2.20 | 1.20 | 1.50 | 0.30 | 1.00 | 0.20 | 0.10 |
| WDS0805-035    | 3       | 2.00 | 2.20 | 1.20 | 1.50 | 0.30 | 1.00 | 0.20 | 0.10 |
| WDS0805-050    | 5       | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 0.80 | 0.20 | 0.10 |
| WDS0805-075    | 7       | 2.00 | 2.20 | 1.20 | 1.50 | 0.50 | 1.20 | 0.20 | 0.10 |
| WDS0805-100    | 0       | 2.00 | 2.20 | 1.20 | 1.50 | 0.50 | 1.20 | 0.20 | 0.10 |
| WDS0805-110    | 0       | 2.00 | 2.20 | 1.20 | 1.50 | 0.50 | 1.20 | 0.20 | 0.10 |

### Thermal Derating Chart-IH (A)

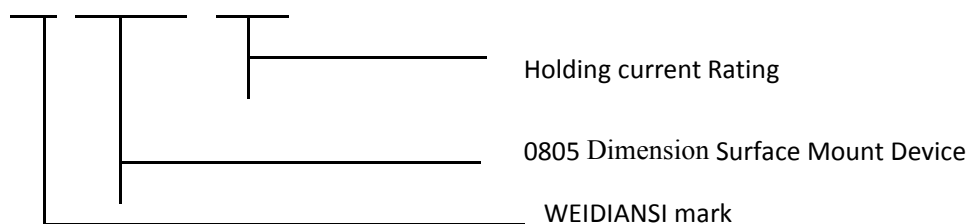
| Part number    | Maximum ambient operating temperatures (°C) |       |       |      |       |       |      |       |       |
|----------------|---------------------------------------------|-------|-------|------|-------|-------|------|-------|-------|
|                | -40                                         | -20   | 0     | 25   | 40    | 50    | 60   | 70    | 85    |
| WDS0805-005    | 0.07                                        | 0.063 | 0.058 | 0.05 | 0.043 | 0.035 | 0.03 | 0.025 | 0.018 |
| WDS0805-010    | 0.14                                        | 0.125 | 0.115 | 0.10 | 0.085 | 0.07  | 0.06 | 0.05  | 0.035 |
| WDS0805-010-24 | 0.14                                        | 0.125 | 0.115 | 0.10 | 0.085 | 0.07  | 0.06 | 0.05  | 0.035 |
| WDS0805-020    | 0.28                                        | 0.25  | 0.23  | 0.20 | 0.17  | 0.14  | 0.12 | 0.10  | 0.07  |
| WDS0805-025    | 0.35                                        | 0.31  | 0.29  | 0.25 | 0.21  | 0.18  | 0.15 | 0.13  | 0.09  |
| WDS0805-030    | 0.42                                        | 0.38  | 0.35  | 0.30 | 0.255 | 0.21  | 0.18 | 0.15  | 0.11  |
| WDS0805-035    | 0.47                                        | 0.44  | 0.39  | 0.35 | 0.30  | 0.27  | 0.24 | 0.20  | 0.14  |
| WDS0805-050    | 0.68                                        | 0.62  | 0.55  | 0.50 | 0.40  | 0.37  | 0.33 | 0.29  | 0.23  |
| WDS0805-075    | 1.00                                        | 0.90  | 0.79  | 0.75 | 0.63  | 0.57  | 0.53 | 0.41  | 0.34  |
| WDS0805-100    | 1.35                                        | 1.25  | 1.10  | 1.00 | 0.82  | 0.74  | 0.65 | 0.55  | 0.42  |
| WDS0805-110    | 1.45                                        | 1.35  | 1.20  | 1.10 | 0.92  | 0.84  | 0.75 | 0.65  | 0.52  |

### Electrical Characteristic

| Part Number    | V <sub>max</sub><br>(Vdc) | I <sub>max</sub><br>(A) | I <sub>hold</sub><br>(A) | I <sub>trip</sub><br>(A) | P <sub>d</sub><br>Max.<br>(W) | Maximum time to trip |               | Resistance                |                           |
|----------------|---------------------------|-------------------------|--------------------------|--------------------------|-------------------------------|----------------------|---------------|---------------------------|---------------------------|
|                |                           |                         |                          |                          |                               | Current<br>(A)       | Time<br>(Sec) | R <sub>i</sub> min<br>(Ω) | R <sub>1</sub> max<br>(Ω) |
| WDS0805-005    | 24                        | 100                     | 0.05                     | 0.15                     | 0.5                           | 0.5                  | 1.50          | 1.50                      | 20.0                      |
| WDS0805-010    | 15                        | 100                     | 0.10                     | 0.30                     | 0.5                           | 0.5                  | 1.50          | 1.00                      | 6.00                      |
| WDS0805-010-24 | 24                        | 100                     | 0.05                     | 0.15                     | 0.5                           | 1.50                 | 1.00          | 6.00                      | 6.00                      |
| WDS0805-020    | 9                         | 100                     | 0.20                     | 0.50                     | 0.5                           | 8.0                  | 0.02          | 0.50                      | 3.50                      |
| WDS0805-025    | 6                         | 100                     | 0.25                     | 0.50                     | 0.5                           | 8.0                  | 0.02          | 0.45                      | 3.20                      |
| WDS0805-030    | 6                         | 100                     | 0.30                     | 0.70                     | 0.5                           | 8.0                  | 0.10          | 0.25                      | 2.00                      |
| WDS0805-035    | 6                         | 100                     | 0.35                     | 0.75                     | 0.5                           | 8.0                  | 0.10          | 0.25                      | 1.20                      |
| WDS0805-050    | 6                         | 100                     | 0.50                     | 1.00                     | 0.6                           | 8.0                  | 0.10          | 0.15                      | 0.85                      |
| WDS0805-075    | 6                         | 100                     | 0.75                     | 1.50                     | 0.6                           | 8.0                  | 0.20          | 0.09                      | 0.385                     |
| WDS0805-100    | 6                         | 100                     | 1.00                     | 1.95                     | 0.6                           | 8.0                  | 0.30          | 0.06                      | 0.23                      |
| WDS0805-110    | 6                         | 100                     | 1.10                     | 2.20                     | 0.6                           | 8.0                  | 0.30          | 0.06                      | 0.21                      |

### Part Numbering System

WDS 0805 -□□□



### Test Procedures And Requirements

| Test            | Test Conditions                     | Accept/Reject Criteria               |
|-----------------|-------------------------------------|--------------------------------------|
| Resistance      | In still air @ 25°C                 | $R_{min} \leq R \leq R_{max}$        |
| Time to Trip    | Specified current, $V_{max}$ , 25°C | $T \leq \text{maximum Time to Trip}$ |
| Hold Current    | 30min, at $I_H$                     | No trip                              |
| Trip Cycle Life | $V_{max}$ , $I_{max}$ , 100cycles   | No arcing or burning                 |
| Trip Endurance  | $V_{max}$ , 1hours                  | No arcing or burning                 |

### Physical Characteristics and Environmental Specifications

#### Physical Characteristics

|                              |                                                                  |                                |
|------------------------------|------------------------------------------------------------------|--------------------------------|
| Terminal materials :         | Tin-Plated Nickle-copper                                         |                                |
| Soldering zone               | Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3. |                                |
| Environmental Specifications |                                                                  |                                |
| Test                         | Conditions                                                       | Resistance Change              |
| Passive aging                | 85°C,1000hours                                                   | ±10%                           |
| Humidity aging               | 85°C/85%RH.1000 hours                                            | ±5%                            |
| Thermal shock                | MIL-STD-202,Method 107G<br>+85°C/-40°C,20times                   | -30% typical resistance change |
| Solvent Resistance           | MIL-STD-202,Method 215                                           | no change                      |
| Vibration                    | ML-STD-883C,Test Condition A                                     | No chage                       |

#### Electrical Specifications:

$I_{hold}$  = Hold Current. Maximum current device will not trip in 25°C still air.

$I_{trip}$  = Trip Current. Minimum current at which the device will always trip in 25°C still air.

$V_{max}$  = Maximum operating voltage device can withstand without damage at rated current ( $I_{max}$ ).

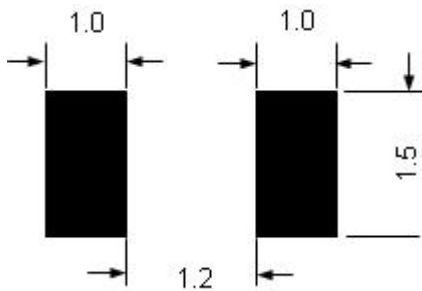
$I_{max}$  = Maximum fault current device can withstand without damage at rated voltage ( $V_{max}$ ).

$P_d$  = Maximum power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

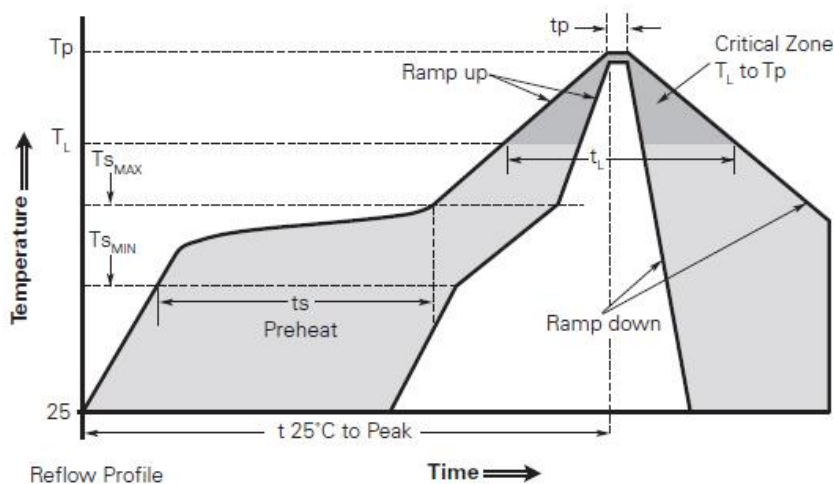
$R_{i_{min/max}}$  = Minimum/Maximum device resistance prior to tripping at 25°C.

$R_{l_{max}}$  = Maximum device resistance is measured one hour post reflow.

### Recommended pad layout (mm)



### Solder reflow conditions



| Profile Feature                                                           | Pb-Free Assembly |
|---------------------------------------------------------------------------|------------------|
| <b>Average ramp up rate (<math>T_{S\_MAX}</math> to <math>T_p</math>)</b> | 3°C/second max.  |
| <b>Preheat</b>                                                            |                  |
| • Temperature min. ( $T_{S\_MIN}$ )                                       | 150°C            |
| • Temperature max. ( $T_{S\_MAX}$ )                                       | 200°C            |
| • Time ( $t_{S\_MIN}$ to $t_{S\_MAX}$ )                                   | 60-120 seconds   |
| <b>Time maintained above:</b>                                             |                  |
| • Temperature ( $T_L$ )                                                   | 217°C            |
| • Time ( $t_L$ )                                                          | 60-150 seconds   |
| <b>Peak/Classification temperature (<math>T_p</math>)</b>                 | 260°C            |
| <b>Time within 5°C of actual peak temperature</b>                         |                  |
| Time ( $t_p$ )                                                            | 30 seconds max.  |
| <b>Ramp down rate</b>                                                     | 3°C/second max.  |
| <b>Time 25°C to peak temperature</b>                                      | 8 minutes max.   |

**Note:** All temperatures refer to topside of the package, measured on the package body surface.

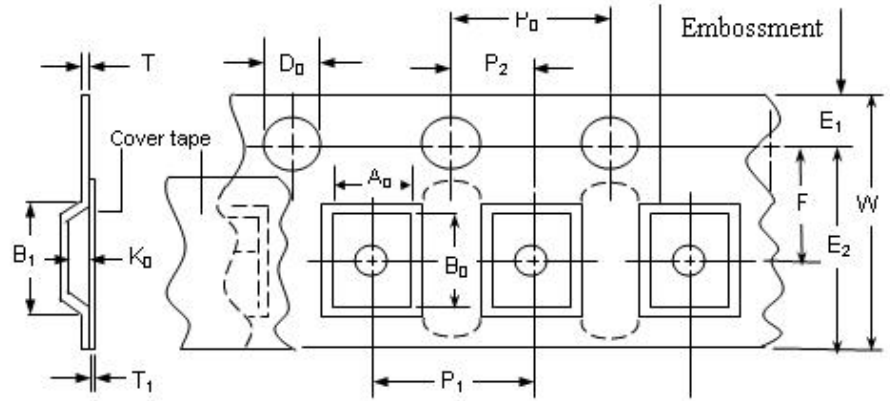
- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.
- Soldering temperature profile meets RoHsleadfree process.

Notes: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements

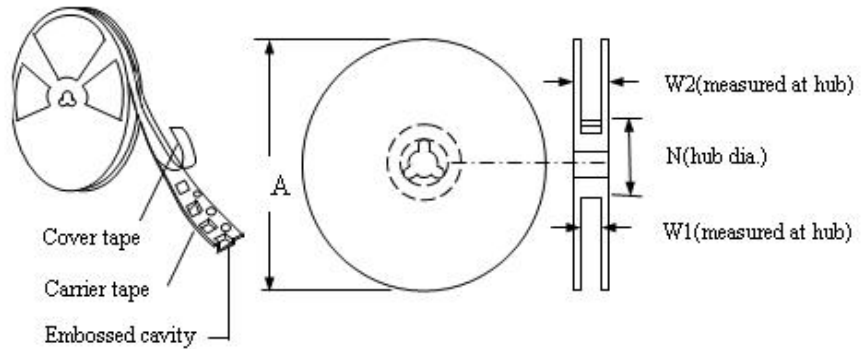
Tape Specification And Reel Dimensions

| Covering Specifications<br>EIA 481-1(Unit:mm) |              |
|-----------------------------------------------|--------------|
| W                                             | 8.00± 0.30   |
| P <sub>0</sub>                                | 4.0 ± 0.10   |
| P <sub>1</sub>                                | 4.0± 0.10    |
| P <sub>2</sub>                                | 2.0 ± 0.05   |
| A <sub>0</sub>                                | 1.65 ± 0.10  |
| B <sub>0</sub>                                | 2.35 ± 0.10  |
| D <sub>0</sub>                                | 1.55± 0.05   |
| F                                             | 3.50± 0.05   |
| E <sub>1</sub>                                | 1.75 ± 0.10  |
| T                                             | 0.20± 0.10   |
| Leadermin.                                    | 390          |
| Trailer min.                                  | 160          |
| Reel Dimensions                               |              |
| A                                             | 178±1.0      |
| N                                             | 59±1         |
| W <sub>1</sub>                                | 8.5+1.0/-0.2 |
| W <sub>2</sub>                                | 12.0±1       |

EIA Tape Component Dimintions



EIA Reel Dimintions



Packaging Quantity

| Part number                | Quantity | Part number | Quantity |
|----------------------------|----------|-------------|----------|
| WDS0805-005                | 5000     | WDS0805-035 | 5000     |
| WDS0805-010/WDS0805-010-24 | 5000     | WDS0805-050 | 5000     |
| WDS0805-020                | 5000     | WDS0805-075 | 4000     |
| WDS0805-025                | 5000     | WDS0805-100 | 4000     |
| WDS0805-030                | 5000     | WDS0805-110 | 4000     |