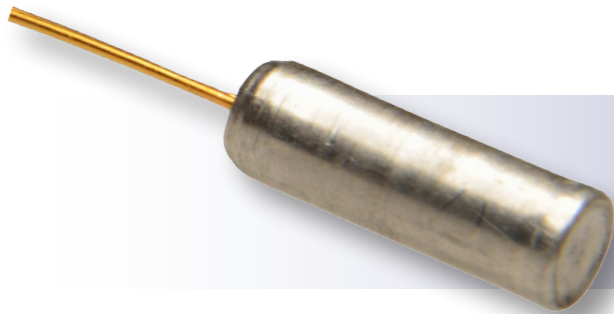


# Leads and Detonators

# 1DT100 Electric Detonator



The 1DT100 Electric Detonator is used in fuzing applications.

*It is a wire bridge detonator designed for capacitive discharge firing.*

## Characteristics

EaglePicher's 1DT100 is a form, fit, and function replacement for the M100 detonator. The characteristics listed may be tailored to meet specialized customer requirements. Please consult an EaglePicher representative for additional application data.

## Specifications

### Electrical

|                                |   |
|--------------------------------|---|
| Resistance @ 70°F (21°C)       | 3.0 -7.5 ohms                                   |
| All-Fire Current @ 70°F (21°C) | 1.6 Vdc max. through a 100 microfarad capacitor |
| Insulation Resistance          | 50 megohms minimum at 500 Vdc                   |

### Mechanical

|               |   |
|---------------|---|
| Size          | See Drawing (next page)   |
| Case Material | Aluminum alloy 1100-0   |
| Lead Material | Glass sealing alloy, 42-6 (Ni-Cr-Fe alloy), gold-plated.  |
| Output        | Will produce a minimum of .005 inch (.127 mm) dent when detonator is initiated against a mild steel block of R <sub>b</sub> 70-95 hardness. |

## Specifications Continued

### Environmental

|                         |  |
|-------------------------|--|
| Temperature             | Operating range: -65°F to +165°F (-54°C to +74°C)  |
| Waterproofness          | 48 hour immersion at a depth of 2 to 3 inches at a water temperature of 70°F ± 10°F.   |
| Thermal Shock/Vibration | 2 hours at -65°F ± 5°F; transfer immediately to chamber at +165°F ± 5°F for 2 hours; immediately transfer to vibration for 15 minute sweep covering the frequency range of 25-500-25 cycles per second parallel to the transverse orthogonal axis with the base charge down and a 2 ± .2 g's peak. |

### Chemical

|                   |                    |
|-------------------|--------------------|
| Ignition Material | Lead Styphnate     |
| Output Material   | Lead Azide and HMX |

### Freight Classification

|                       |                     |
|-----------------------|---------------------|
| Shipping Name         | Detonator, Electric |
| Hazard Classification | 1.4S                |

# 1DT100

## Safety

### Maximum explosive weight:

40 mg

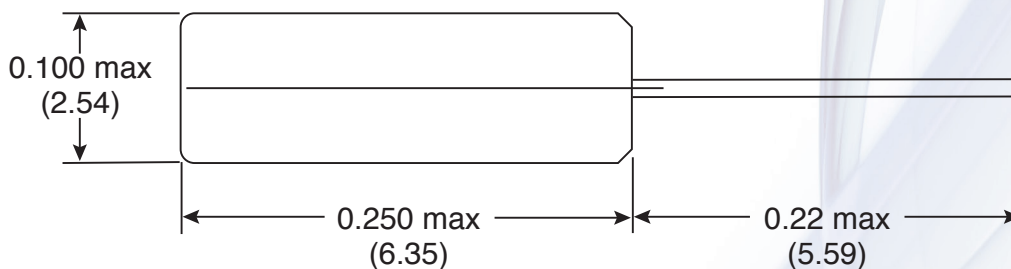
### Warning:

Detonators are sensitive to static electricity, electric current, heat, friction and shock. They explode with great force and their accidental firing under unprotected conditions may cause severe injury.

Most companies that buy detonators are already aware of the hazards involved in their handling and use, and have effective safety programs to protect against those hazards.

If your company does not have a safety program, it is essential that one is established before explosive items are handled or used. For a brief overview of safety precautions, see the Safety Procedures Data Sheet or contact an EaglePicher representative.

Energetic devices are considered articles, therefore a Material Safety Data Sheet (MSDS) does not apply. However, MSDS may apply to individual components. For more information, contact your EaglePicher representative.



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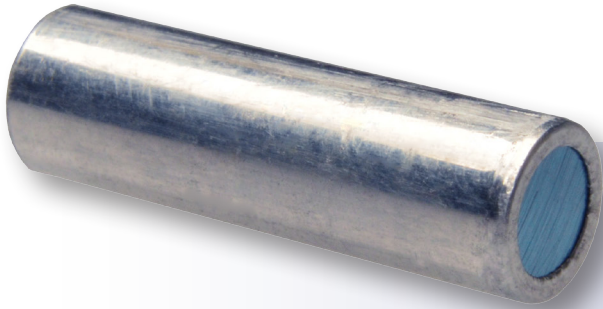
### EaglePicher Technologies, LLC

PO Box 47, Joplin, Missouri 64802-0047, USA

tel 417.623.8000 | fax 417.623.0850

[www.eaglepicher.com](http://www.eaglepicher.com)

# 1DT115 Explosive Lead



Explosive leads are typically used as the moveable part of the detonation train.

*Explosive leads achieve the desirable out-of-the-line fuze position for safety.*

## Lead Function

The lead when properly initiated will produce a minimum dent of .010 inch (0.254 mm) when functioned in accordance with MIL-STD-331, Test 301, using a steel dent block with a Rockwell hardness of B75 to B95.

## Characteristics

Some of the characteristics listed here are nominal; others are levels to which the units have been tested. There are no limits on design capabilities. Please consult an EaglePicher representative before using this data as a specification.

### Specifications

| Electrical       |  |
|------------------|--|
| Resistance       | 2.0 Ohms to 7.0 Ohms between Pin and Case at 2 MA Max between -65°F and +160°F   |
| All Fire Current | 4.7 Microfarad Capacitor Charged to 23 Volts DC  |
| No-Fire          | Minimum No-Fire: 20 Milliamps for 5 Minutes  |
| Mechanical       |  |
| Size             | See Drawing  |
| Cup Material     | Corrosion Resistance Steel, Type 305 Condition A   |
| Finish           | Gold Plate per MIL-G-45204, Type II, .00005 to .00015 Thick over Nickel Plate per QQ-N-290, Class 2 .00010 to .00015 Thick |
| Output           | Will Produce a Minimum Depth of 0.010 Inch when initiated against a mild steel Block of Rb 70-95                           |
| Function Time    | Detonator Shall Function within 20 Microseconds from initial application of the All-Fire                                   |

### Specifications Continued

| Environmental            |   |
|--------------------------|---|
| Temperature              | -65° F to +160°F  |
| Low Pressure             | Operating: Atmospheric Pressure Equivalent to 0 to 10,000 ft. (above mean sea level)<br>Non-Operating: Atmospheric Pressure Equivalent of 0 to 40,000 ft. (above mean sea level)  |
| Temperature and Humidity | Subjected to one 14 Day Temperature and Humidity cycle in Accordance with MIL-STD-331 test 105  |
| Shock                    | Terminal Peak Sawtooth Shock Pulse Peak Value of 50G, 11 Milliseconds Applied in each Direction along each of 3 Mutually Orthogonal Axes, Two Shocks per Direction (12 Shocks)  |
| Vibration                | Non Operational: Sinusoidal Cycling with a sweep Time of 12 Minutes from 5 to 200 to 5 Hz and the acceleration Level equal to 1.5G (Peak) applied Along 3 Mutually Orthogonal Axes for 84 Minutes (252 Minutes Total)<br>Operating: Random Vibration Over the Frequency Range of 20 to 2,000 Hz, F1 equals 268 F2 Equals 1268 and Spectral Density Levels of W1 Equals .040 G2/Hz and W2 Equals .10 G2/Hz per MIL-STD-810 Applied Along Each of 3 Mutually Orthogonal Axes for 60 Minutes (180 Minutes Total) |
| Hermetic Seal            | Each Detonator is Hermetically Sealed Using Solder. Leak rate Shall not Exceed 10-6 Atmospheric Cubic Centimeters per Second of Air.  |
| Storage Life             | Detonator Shall Meet All requirements After 10 Years  |
| Freight Classification   |   |
| Shipping Name            | Not Yet Determined  |
| Hazard Classification    | Not Yet Determined  |

## Safety

### Maximum pyrotechnic weight:

480 mg

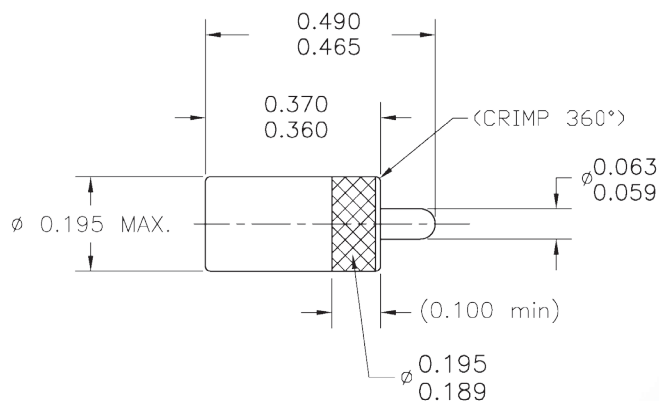
### Warning:

Detonators are sensitive to static electricity, electric current, heat, friction and shock. They explode with great force and their accidental firing under unprotected conditions may cause severe injury

Most companies that buy detonators are already aware of the hazards involved in their handling and use, and have effective safety programs to protect against those hazards.

If your company does not have a safety program, it is essential that one is established before explosive items are handled or used. For a brief overview of safety precautions, see the Safety Procedures Data Sheet or contact an EaglePicher representative.

Energetic devices are considered articles; therefore a Material Safety Data Sheet (MSDS) does not apply. However, MSDS may apply to individual components. For more information, contact your EaglePicher representative.



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# 1DT500 Electric Detonator

The 1DT500 Electric Detonator is used in fuzing applications.

*It is a wire bridge detonator designed for capacitive discharge firing.*

## Characteristics

The characteristics listed describe the response of this detonator to the representative specifications. There are no limits on design capabilities. Please consult an EaglePicher representative for additional application data.

### Specifications

#### Electrical

|                                |   |
|--------------------------------|---|
| Resistance @ 70°F (21°C)       | 2.5 ± 4.0 ohms  |
| All-Fire Current @ 70°F (21°C) | 20 Vdc, through a 4.7 microfarad capacitor  |
| Insulation Resistance          | 22 megohms minimum at 325 Vdc per MIL-STD-202, Method 301 (between shorted leads and case). |

#### Mechanical

|               |   |
|---------------|---|
| Size          | See Drawing   |
| Case Material | Aluminum alloy 1100-0   |
| Lead Material | Nickel iron alloy, class 6, 42-6, alloy clad copper 3-1 ratio, spec MIL-1-23011.  |
| Output        | Will produce a minimum of .005 inch (.127 mm) dent when detonator is initiated against a mild steel block of R <sub>b</sub> 70-95 hardness. |

### Specifications Continued

#### Environmental

|                         |  |
|-------------------------|--|
| Temperature             | Operating range: -65°F to +165°F (-54°C to +74°C)  |
| Waterproofness          | 48 hour immersion at a depth of 2 to 3 inches at a water temperature of 75°F ± 5°.   |
| Thermal Shock/Vibration | 2 hours at -65°F ± 5°F; transfer immediately to chamber at +165°F ± 5°F for 2 hours; immediately transfer to vibration for 15 minute sweep covering the frequency range of 25-500-25 cycles per second parallel to the transverse orthogonal axis with the base charge down and a 2 ± .2 g's peak. |

#### Chemical

|                   |                    |
|-------------------|--------------------|
| Ignition Material | Lead Styphnate     |
| Output Material   | Lead Azide and HMX |

#### Freight Classification

|                       |                     |
|-----------------------|---------------------|
| Shipping Name         | Detonator, Electric |
| Hazard Classification | 1.4S                |

# 1DT500

## Safety

### Maximum pyrotechnic weight:

40 mg

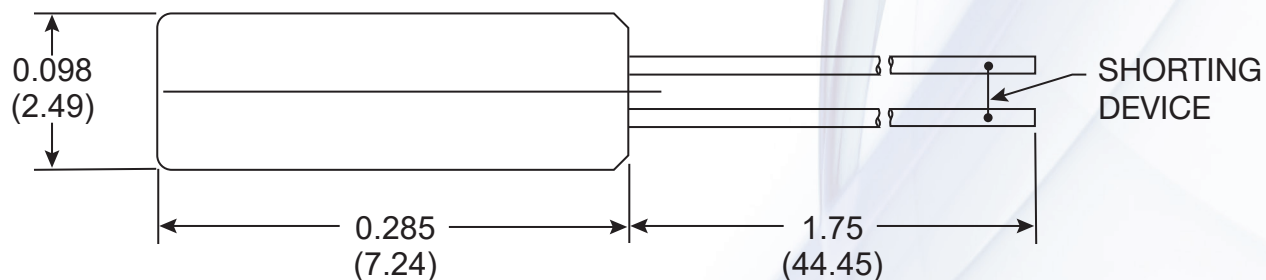
### Warning:

Detonators are sensitive to static electricity, electric current, heat, friction and shock. They explode with great force and their accidental firing under unprotected conditions may cause severe injury.

Most companies that buy detonators are already aware of the hazards involved in their handling and use, and have effective safety programs to protect against those hazards.

If your company does not have a safety program, it is essential that one is established before explosive items are handled or used. For a brief overview of safety precautions, see the Safety Procedures Data Sheet or contact an EaglePicher representative.

Energetic devices are considered articles, therefore a Material Safety Data Sheet (MSDS) does not apply. However, MSDS may apply to individual components. For more information, contact your EaglePicher representative.



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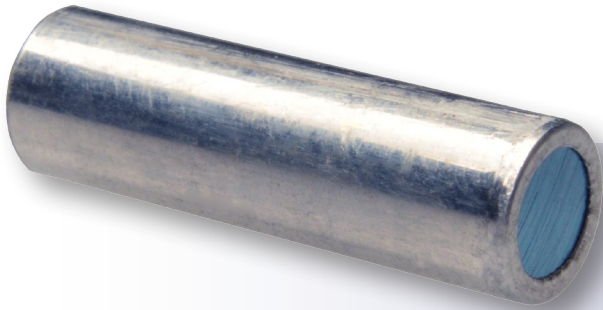
PO Box 47, Joplin, Missouri 64802-0047, USA

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# 1DT511 Explosive Lead



Explosive leads are typically used as the moveable part of the detonation train.

*Explosive leads achieve the desirable out-of-the-line fuze position for safety.*

## Lead Function

The lead when properly initiated will produce a minimum dent of .010 inch (0.254 mm) when functioned in accordance with MIL-STD-331, Test 301, using a steel dent block with a Rockwell hardness of B75 to B95.

## Characteristics

Some of the characteristics listed here are nominal; others are levels to which the units have been tested. There are no limits on design capabilities. Please consult an EaglePicher representative before using this data as a specification.

## Specifications

### Mechanical

|               |                       |
|---------------|-----------------------|
| Size          | See Drawing           |
| Case Material | Aluminum alloy 1100-0 |

### Environmental

|             |  |
|-------------|--|
| Temperature | Operating range: -20°F to +140°F<br>(-29°C to +60°C) |
|-------------|--|

### Chemical

|                 |  |
|-----------------|--|
| Output Material | Composition PBXN-5, type I, class 2 or 3 |
|-----------------|--|

### Freight Classification

|                       |   |
|-----------------------|---|
| Shipping Name         | Fuzes, Detonating   |
| Hazard Classification | Class 1.4b explosive when contained in shipping packaging |



# 1DT511

## Safety

### Maximum pyrotechnic weight:

480 mg

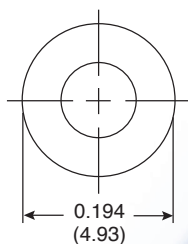
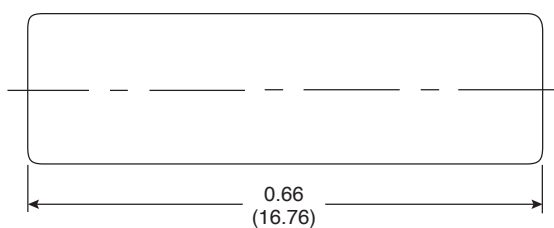
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