

COMMERCIAL ITEM DESCRIPTION  
SPECIFICATION SHEET

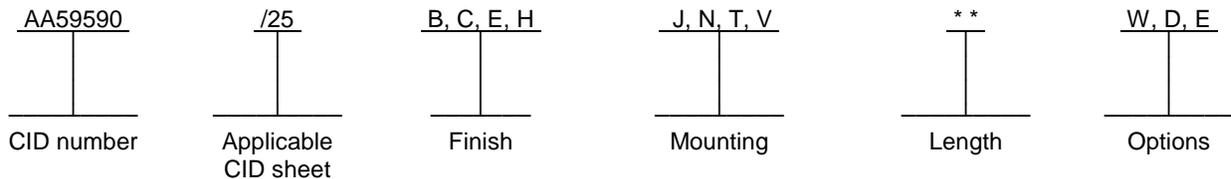
HOLDERS, ELECTRICAL CARD, WEDGE RETAINERS, 3 PIECE, SCREW ACTUATED DRIVE,  
.225 X .260 INCH BODY SIZE, WITH EJECTION ACTION AND VISUAL LOCK INDICATION

The General Services Administration has authorized the use of this commercial item description (CID) for all federal agencies.

The complete requirements for procuring electrical card holders described herein shall consist of this document and the latest issue in effect of A-A-59590.

**SCOPE.** This CID specification sheet covers 3 piece card holders with a visual locking indicator and ejection action feature that forces the circuit card assembly to disengage from its installed position when used in heat sinking devices (cold plates, heat exchanger) or other applications. Card holders covered by this CID are intended to provide maximum contact between thermal paths on the circuit card assemblies and the heat sink surfaces and to provide resistance to loosening due to shock and vibration. Items covered by this CID are intended for all federal agency applications and environments.

**CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN).** This CID specification sheet uses a classification system which is included in the Part Identification Number (PIN) as shown in the following example (see notes).



**SALIENT CHARACTERISTICS.**

**Performance.** Card holders shall hold the circuit card firmly in place providing high resistance to shock and vibration while providing maximum thermal transfer. The recommended installation torque is as follows: 6 inch-pounds (0.7 N-m) for assemblies using no options or option "W" and 8 inch-pounds (0.91 N-m) for assemblies using options "D" or "E".

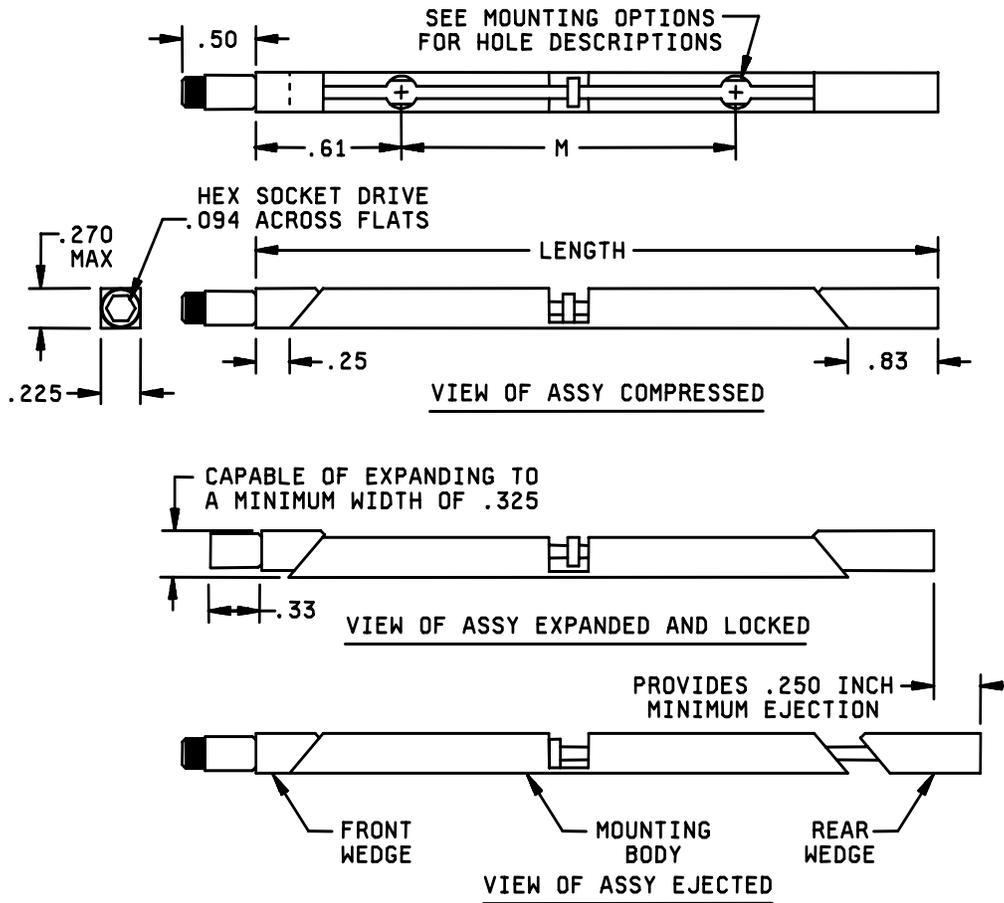
**Interface and physical dimensions.** The card holders supplied to this CID specification sheet shall be as specified herein and the general CID. An ejection action shall be incorporated into the card holder. The ejection action shall be used to allow for initial ejection of the circuit card assembly from its installed position without damaging circuits, components, or connector pins. Card holders shall also have a visual indicator to show when the assembly is in its relaxed (unlocked) and expanded (locked) state.

**Finish options.** The finish options B, C, E, or H shall be as specified in A-A-59590.

**Mounting options.** The mounting options J, N, T or V shall be as specified in A-A-59590. Except when using mounting option "N", two mounting holes are required on card holders. See table I and figure 1 for mounting hole spacing requirements.

Counterbore holes. Counterbore holes shall be .066/.073 inch (1.68/1.85 mm) diameter, countersunk 100 degrees by .140 inch (3.56 mm) diameter through holes with an access/clearance hole of .156 inch (3.96 mm) diameter by .200 inch (5.08 mm) deep.

Length, expanded and relaxed dimensions. The length, expanded and relaxed dimensions shall be as specified on figure 1. The length designator shall be as specified in A-A-59590 and the available lengths are listed in table I.



| Inches | mm   |
|--------|------|--------|------|--------|------|--------|------|--------|------|
| .06    | 1.5  | .225   | 5.72 | .270   | 6.86 | .33    | 8.4  | .61    | 15.5 |
| .094   | 2.39 | .250   | 6.35 | .325   | 8.26 | .50    | 12.7 | .83    | 21.1 |

NOTES:

1. Dimensions are in inches. Metric equivalents are given for information only.
2. Unless otherwise specified, tolerances are for  $\pm .02$  inch (0.51 mm) for two place decimals and  $\pm .010$  (0.25 mm) for three place decimals.

FIGURE 1. Relaxed and expanded dimensions.

TABLE I. Additional assembly dimensions (see figure 2).

| PIN length designator | Dimension "LENGTH"<br>± .02 (0.5 mm) | Dimension "M"<br>± .005 (0.13 mm) |
|-----------------------|--------------------------------------|-----------------------------------|
| 28                    | 2.8 (71)                             | 1.00 (25.4)                       |
| 32                    | 3.2 (89)                             | 1.40 (35.6)                       |
| 38                    | 3.8 (97)                             | 2.00 (50.8)                       |
| 48                    | 4.8 (122)                            | 3.00 (76.2)                       |
| 64                    | 6.4 (163)                            | 4.60 (116.8)                      |

Ejection action. The minimal amount of ejection action distance shall be .25 inches (6.4 m) (see figure 2).

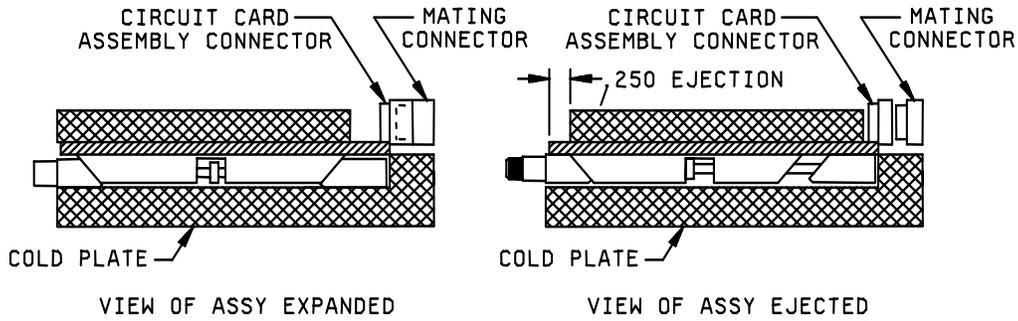


FIGURE 2. View of assembly installed and ejected.

Visual lock indicator (see figure 3). When the card holder is in the unlocked (relaxed) state, the end of the actuating screw shall display a red band on the side of the screw. When the actuating screw on the card holder has been tightened (assembly expanded) so that the assembly is in the locked position, this red band shall be concealed.

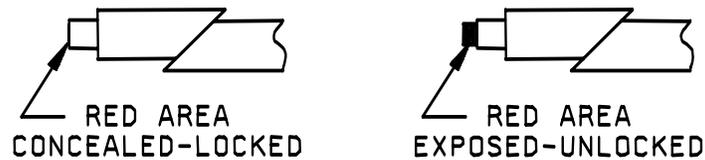


FIGURE 3. Visual lock indicator.

Options. Card holders can have the following options. Card holders not requiring the following option shall leave the position in the PIN blank.

Lockwasher and flat washer (see figure 4). A lockwasher and flat washer located under the screw head will provide for additional resistance to loosening from shock and vibration. Card holders requiring a lockwasher and flat washer option shall include a suffix "W" in the PIN (see classification and notes).

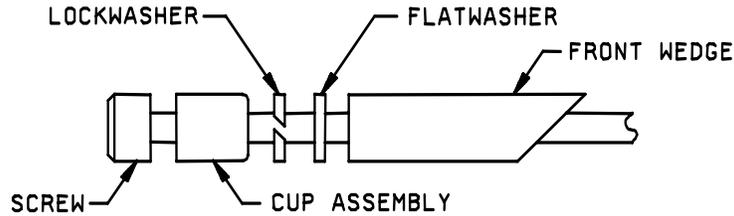


FIGURE 4. Lockwasher and flat washer details.

Screw self-locking element (see figure 5). The use of a screw self-locking element will provide prevailing torque for resistance to loosening from shock vibration. Card holders requiring a screw self-locking element shall include a suffix "E" in the PIN (see classification and notes).



FIGURE 5. Screw self-locking element details.

Lockwasher, flat washer, and screw self-locking element. Card holders requiring a lockwasher, flat washer, and screw self-locking element option shall include a suffix "D" in the PIN (see classification and notes).

NOTES.

PIN. The PIN should be used for Government purposes to buy commercial products to this CID specification sheet. See the classification section for PIN format example.

Commercial products. As part of the market analysis and research effort, this CID specification sheet was coordinated with the following manufacturers of commercial products. At the time of preparation and coordination of this CID specification sheet, these manufacturers were known to have commercial products that would meet the requirements of this CID specification sheet. (NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict procurement to only the manufacturers shown.)

| <u>Manufacturer CAGE</u> | <u>Manufacturer name and address</u>  | <u>Manufacturer contact information</u>   |
|--------------------------|---|---|
| 18915                    | APW Electronic Solutions<br>14100 Danielson Street<br>Poway, CA 92064-6898    | Tel: (858) 679-4550<br>Fax: (858) 679-4555<br>E-mail: sales.electronicsolutions@apw.com<br>URL: www.apw.com |
| 52094                    | Calmark Corporation<br>4915 Walnut Grove Avenue<br>San Gabriel, CA 91776-2099 | Tel: (626) 287-0451<br>Fax: (626) 287-7350<br>E-mail: sales@calmark.com<br>URL: www.calmark.com             |

Part number supersession data. This CID specification sheet part numbers supersedes the following manufacturer's part numbers as shown in table II. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE II. Commercial part number supersession data. 1/

| PIN designator<br>AA59590/25 | Vendor similar designator<br>or type part number <u>2/</u><br>CAGE 18915 | Vendor similar designator<br>or type part number <u>2/</u><br>CAGE 52094 |
|------------------------------|--|--|
| CJ28                         | 45-5073-2.80   | VE225-2.80H  |
| CN28                         | 45-5073-2.80-A   | VE225-2.80   |
| CT28                         | 45-5073-2.80-T   | VE225-2.80T0   |
| CV28                         | 45-5073-2.80-S   | VE225-2.80T2   |
| CJ28E                        | 45-5073-2.80-L   | VE225-2.80HL   |
| CN28E                        | 45-5073-2.80-AL  | VE225-2.80L  |
| CT28E                        | 45-5073-2.80-TL  | VE225-2.80T0L  |
| CV28E                        | 45-5073-2.80-SL  | VE225-2.80T2L  |
| CJ28W                        | 45-5074-2.80   | WVE225-2.80H   |
| CN28W                        | 45-5074-2.80-A   | WVE225-2.80  |
| CT28W                        | 45-5074-2.80-T   | WVE225-2.80T0  |
| CV28W                        | 45-5074-2.80-S   | WVE225-2.80T2  |
| CJ28D                        | 45-5074-2.80-L   | WVE225-2.80HL  |
| CN28D                        | 45-5074-2.80-AL  | WVE225-2.80L   |
| CT28D                        | 45-5074-2.80-TL  | WVE225-2.80T0L   |
| CV28D                        | 45-5074-2.80-SL  | WVE225-2.80T2L   |
| BJ28                         | 45-5073-2.80-B   | VEA225-2.80H   |
| BN28                         | 45-5073-2.80-BA  | VEA225-2.80  |
| BT28                         | 45-5073-2.80-BT  | VEA225-2.80T0  |
| BV28                         | 45-5073-2.80-BS  | VEA225-2.80T2  |
| BJ28E                        | 45VI-5073-2.80-BAL   | VEA225-2.80HL  |
| BN28E                        | 45VI-5073-2.80-BTL   | VEA225-2.80L   |
| BT28E                        | 45VI-5073-2.80-BSL   | VEA225-2.80T0L   |
| BV28E                        | 45VI-5073-2.80-BL  | VEA225-2.80T2L   |
| BJ28W                        | 45VI-5074-2.80-B   | WVEA225-2.80H  |
| BN28W                        | 45VI-5074-2.80-BA  | WVEA225-2.80   |
| BT28W                        | 45VI-5074-2.80-BT  | WVEA225-2.80T0   |
| BV28W                        | 45VI-5074-2.80-BS  | WVEA225-2.80T2   |
| BJ28D                        | 45VI-5074-2.80-BL  | WVEA225-2.80HL   |
| BN28D                        | 45VI-5074-2.80-BAL   | WVEA225-2.80L  |
| BT28D                        | 45VI-5074-2.80-BTL   | WVEA225-2.80T0L  |
| BV28D                        | 45VI-5074-2.80-BSL   | WVEA225-2.80T2L  |

See footnotes at end of table.

TABLE II. Commercial part number supersession data – Continued.

| PIN designator<br>AA59590/25 | Vendor similar designator<br>or type part number <sup>2/</sup><br>CAGE 18915 | Vendor similar designator<br>or type part number <sup>2/</sup><br>CAGE 52094 |
|------------------------------|--|--|
| HJ28                         | 45I-5073-2.80-B3   | VEHA225-2.80H  |
| HN28                         | 45-5073-2.80B3A  | VEHA225-2.80   |
| HT28                         | 45-5073-2.80B3T  | VEHA225-2.80T0   |
| HV28                         | 45-5073-2.80B3S  | VEHA225-2.80T2   |
| HJ28E                        | 45-5073-2.80B3L  | VEHA225-2.80HL   |
| HN28E                        | 45-5073-280B3AL  | VEHA225-2.80L  |
| HT28E                        | 45-5073-280B3TL  | VEHA225-2.80T0L  |
| HV28E                        | 45-5073-280B3SL  | VEHA225-2.80T2L  |
| HJ28W                        | 45-5074-2.80-B3  | WVEHA225-2.80H   |
| HN28W                        | 45-5074-2.80B3A  | WVEHA225-2.80  |
| HT28W                        | 45-5074-2.80B3T  | WVEHA225-2.80T0  |
| HV28W                        | 45-5074-2.80B3S  | WVEHA225-2.80T2  |
| HJ28D                        | 45-5074-2.80B3L  | WVEHA225-2.80HL  |
| HN28D                        | 45-5074-280B3AL  | WVEHA225-2.80L   |
| HT28D                        | 45-5074-280B3TL  | WVEHA225-2.80T0L   |
| HV28D                        | 45-5074-280B3SL  | WVEHA225-2.80T2L   |
| EJ28                         | 45-5073-2.80-EN  | VEEN225-2.80H  |
| EN28                         | 45-5073-2.80ENA  | VEEN225-2.80   |
| ET28                         | 45-5073-2.80ENT  | VEEN225-2.80T0   |
| EV28                         | 45-5073-2.80ENS  | VEEN225-2.80T2   |
| EJ28E                        | 45-5073-2.80ENL  | VEEN225-2.80HL   |
| EN28E                        | 45-5073-280ENAL  | VEEN225-2.80L  |
| ET28E                        | 45-5073-280ENTL  | VEEN225-2.80T0L  |
| EV28E                        | 45-5073-280ENSL  | VEEN225-2.80T2L  |
| EJ28W                        | 45-5074-2.80-EN  | WVEEN225-2.80H   |
| EN28W                        | 45-5074-2.80ENA  | WVEEN225-2.80  |
| ET28W                        | 45-5074-2.80ENT  | WVEEN225-2.80T0  |
| EV28W                        | 45-5074-2.80BENS   | WVEEN225-2.80T2  |
| EJ28D                        | 45-5074-2.80ENL  | WVEEN225-2.80HL  |
| EN28D                        | 45-5074-280ENAL  | WVEEN225-2.80L   |
| ET28D                        | 45-5074-280ENTL  | WVEEN225-2.80T0L   |
| EV28D                        | 45-5074-280ENSL  | WVEEN225-2.80T2L   |

1/ CID PINs listed only with length designator "28". See Table III for CID PIN construction using other available lengths.

2/ The manufacturer's part number shall not be used for procurement to the requirements of this CID specification sheet. At the time of preparation of this CID specification sheet, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements, see the marking paragraph of the basic CID.

TABLE III. Example of PIN with available length designators.

| PIN designator<br>AA59590/25 | Vendor similar designator<br>or type part number <sup>1/</sup><br>CAGE 18915 | PIN designator<br>AA59590/25 | Vendor similar designator<br>or type part number <sup>1/</sup><br>CAGE 52094 |
|------------------------------|--|------------------------------|--|
| CJ28                         | 45-5073-2.80   | CJ28                         | VE225-2.80H  |
| CJ32                         | 45-5073-3.20   | CJ35                         | VE225-3.20H  |
| CJ38                         | 45-5073-3.80   | CJ38                         | VE225-3.80H  |
| CJ48                         | 45-5073-4.80   | CJ48                         | VE225-4.80H  |
| CJ64                         | 45-5073-6.40   | CJ64                         | VE225-6.40H  |

<sup>1/</sup> The manufacturer's part number shall not be used for procurement to the requirements of this CID specification sheet. At the time of preparation of this CID specification sheet, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements, see the marking paragraph of the basic CID.

MILITARY INTERESTS:

Custodians:  
 Army – CR  
 Navy – EC  
 Air Force – 11  
 DLA – CC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – 7FXE  
 Preparing Activity  
 DLA – CC  
 Project 5998-0135