

Standard  
Density  
Rectangular

# HEAVY-DUTY RECTANGULAR CCITT V.35 INTERFACE CONNECTORS



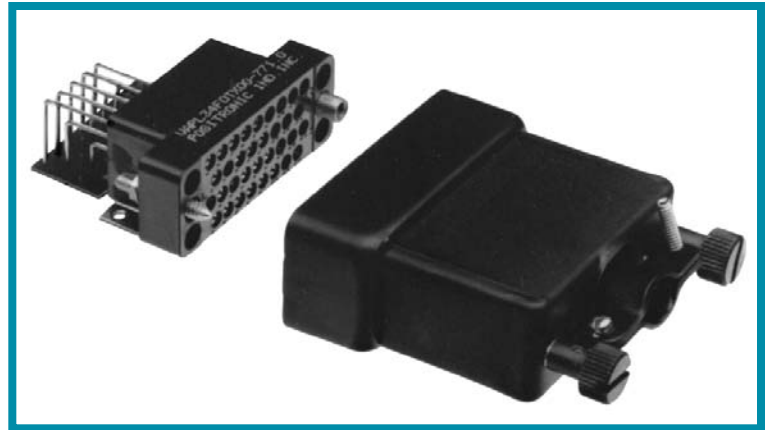
Positronic Industries  
connectpositronic.com

**Size 16 Contacts  
Connectors Qualified to  
MIL-DTL-28748**

**Contacts Qualified to  
SAE AS 39029**

**IEC Publication 807-7  
ISO International  
Standard 2593**

U.L. Recognized, File #E49351  
Telecommunication U.L. File #E140980



VMCT and VAPL series connectors are high reliability connectors meeting international standards for CCITT V.35 interfacing. To meet these specifications, VMCT and VAPL series connectors come in 34 position glass filled DAP insulators with 0.062 inch [1.57mm] diameters, size 16 contacts rated to 13 amperes.

VMCT Series connectors are offered in crimp, solder cup, printed board mount, press-fit and wrap post terminations. VAPL Series connectors have right angle printed board mount terminations. VMCT and VAPL series connectors meet performance requirements for MIL-DTL-28748 and SAE AS 39029.

A wide array of mounting, locking, shrouding and polarizing accessories is available for these connectors. For details, see the Heavy-Duty Rectangular Connector Accessories section, GMCT 34 variant.

VMCT and VAPL series connectors were specifically designed to satisfy requirements for V.35 interfacing and high speed data transmission found in the telecommunications, modem and computer industries. These connectors fully comply with the contact and jackscrew system requirements of ISO standard 2593, as revised by ISO TC 97/SC6 N 2599 and 3236.

## V.35 SERIES TECHNICAL CHARACTERISTICS

### VMCT SERIES CONNECTORS WITH REMOVABLE CONTACTS

#### MILITARY SPECIFICATIONS:

Qualified to MIL-DTL-28748/3 and MIL-DTL-28748/4. Contacts qualified to SAE AS 39029/34 and SAE AS 39029/35.

#### INTERNATIONAL STANDARDS:

IEC 807-1 and IEC 807-7.  
U.L. Recognized.

#### MATERIALS AND FINISHES:

<b>Insulator:</b>	Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available.
<b>Removable Contacts:</b>	Copper alloy with gold flash over nickel. Military contacts plated 0.000050 inch [1.27 microns] gold over copper. Other finishes available upon request.
<b>Hoods, Cable Adapters:</b>	Aluminum with yellow or black anodize. Steel with zinc plate and chromate seal.
<b>Shells:</b>	Aluminum with yellow or black anodize.
<b>Jackscrew System:</b>	Passivated stainless steel.
<b>Polarizing Guides:</b>	Copper alloy with nickel plate or passivated stainless steel.
<b>Vibration Locks:</b>	Copper alloy with zinc plate and chromate seal.

#### MECHANICAL CHARACTERISTICS:

<b>Removable Contacts:</b>	Insert contact to rear face of insulator, release from front face of insulator. Size 16 [13 amps.] contacts available. Female contact has "closed entry" design for highest reliability.
<b>Contact Retention in Insulator:</b>	20 lbs. [89N] after 10 cycles of contact insertion extraction.

<b>Contact Termination:</b>	Crimp all wire sizes from 14 AWG [2.5 mm <sup>2</sup> ] through 32 AWG [0.03 mm <sup>2</sup> ]. Solder cup, wrap post, press-fit and printed board mount.
<b>Locking Systems:</b>	Friction, vibration locks and jackscrews.
<b>Polarization:</b>	Polarized guides, polarized shells and jackscrew system.
<b>Mechanical Operations:</b>	1000 operations per IEC 512-5.
<b>Jackscrews:</b>	Standard threads, 6-32 UNC. Metric threads, M3X0.5 available.

#### ELECTRICAL CHARACTERISTICS:

<b>Contact Current Rating:</b>	Size 16: 0.062 inch [1.57 mm] diameter – 13 amps nominal.
<b>Initial Contact Resistance:</b>	Size 16 – 0.003 ohms.
<b>Flash over Voltage:</b>	2700 V.AC [rms].
<b>Test Voltage:</b>	Size 16 – 2000 V.AC [rms].
<b>Insulation Resistance (minimum):</b>	5 G ohms.
<b>Clearance and Creepage Distance (minimum):</b>	0.080 inch [2.03 mm].
<b>Working Temperature:</b>	-55°C to 125°C.
<b>Working Voltage:</b>	250 V.AC [rms].



For RoHS options  
see page 36.

DIMENSIONS ARE IN INCHES [MILLIMETERS].  
ALL DIMENSIONS ARE SUBJECT TO CHANGE.



### VAPL SERIES TECHNICAL CHARACTERISTICS

#### MILITARY SPECIFICATIONS:

Conforms to MIL-DTL-28748.

#### INTERNATIONAL STANDARDS:

IEC 807-1 and IEC 807-7.  
U.L. Recognized.

#### MATERIALS AND FINISHES:

- Insulator:** Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available.
- Fixed Contacts:** Copper alloy, gold flash over nickel.
- Jackscrew System:** Passivated stainless steel.
- Polarizing Guides:** Copper alloy with nickel plate or passivated stainless steel.
- Vibration Locks:** Copper alloy with zinc plate and chromate seal.

#### MECHANICAL CHARACTERISTICS:

- Fixed Contacts:**
  - Male** – Size 16: 0.062 inch [1.57 mm] diameter.
  - Female** – “Closed entry” design for highest reliability.
- Contact Retention in Insulator:** 10 lbs. [44.5N] minimum.
- Contact Termination:** Right angle printed board mounted.
- Locking Systems:** Friction, vibration locks and jackscrews.
- Polarization:** Polarized guides and jackscrew system.
- Mechanical Operations:** 1000 operations per IEC 512-5.
- Jackscrews:** Standard threads, 6-32 UNC. Metric threads, M3X0.5 available.

#### ELECTRICAL CHARACTERISTICS:

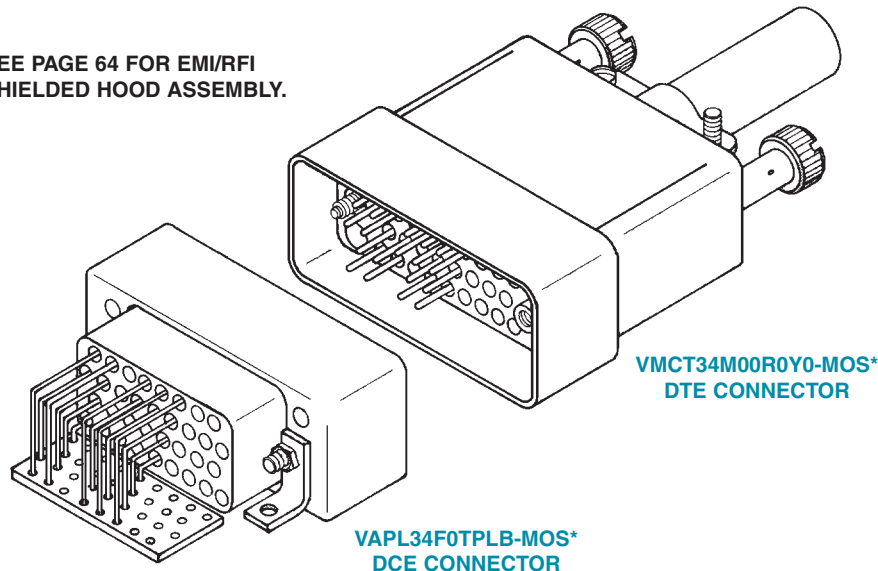
- Contact Current Rating:** 7.5 amps. limited at contact termination diameter.
- Initial Contact Resistance:** 0.003 ohms.
- Flash over Voltage:** 2500 V.AC [rms].
- Test Voltage:** 1200 V.AC [rms].
- Insulation Resistance (minimum):** 5 G ohms.
- Clearance and Creepage Distance (minimum):** 0.047 inch [1.19 mm].
- Working Temperature:** -55°C to 125°C.
- Working Voltage:** 250 V.AC [rms].



For RoHS options  
see page 37.

### VMCT/VAPL SERIES TYPICAL CONNECTOR MATING ASSEMBLY

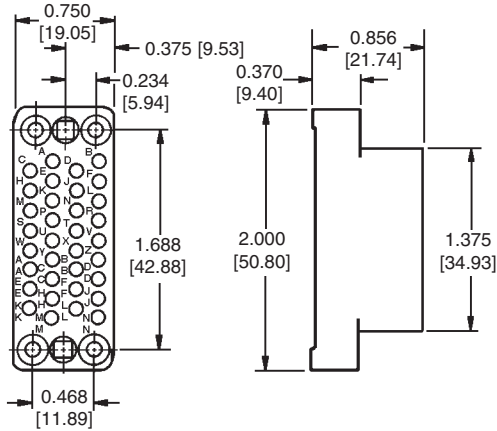
SEE PAGE 64 FOR EMI/RFI  
SHIELDED HOOD ASSEMBLY.



\* MOS DESIGNATES THE NUMBERING SYSTEM FOR SPECIAL CUSTOMER REQUIREMENTS. SELECTIVE LOADING OF CONTACTS FOR V.35 CONNECTORS IS ACHIEVED THROUGH THIS SYSTEM. PLEASE CONTACT TECHNICAL SALES FOR DETAILS.

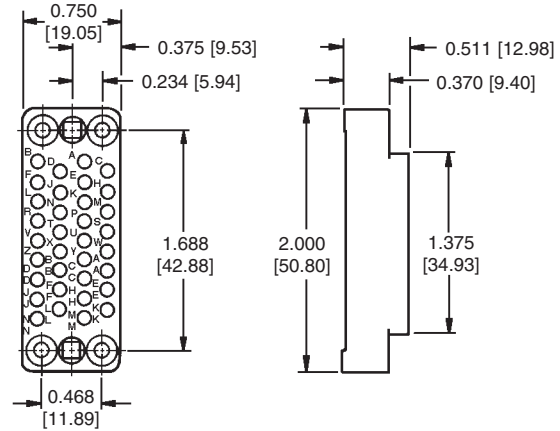
## VMCT SERIES CONNECTOR INSULATOR DIMENSIONS

### FEMALE CONNECTOR



FOR VMCT [V.35] SERIES CONTACTS,  
SEE GMCT SERIES CONTACT SECTION

### MALE CONNECTOR

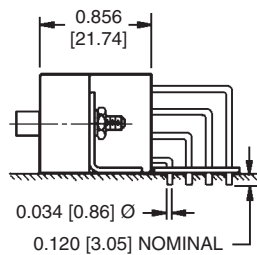
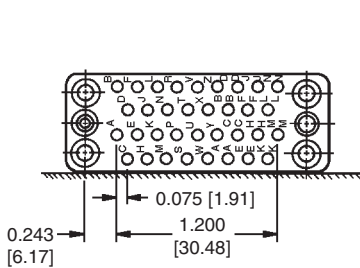


FOR VMCT SERIES CONTACT HOLE POSITIONS,  
SEE GMCT SERIES CONTACT HOLE POSITIONS, PAGE 7

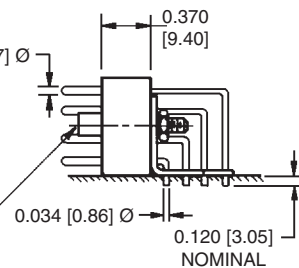
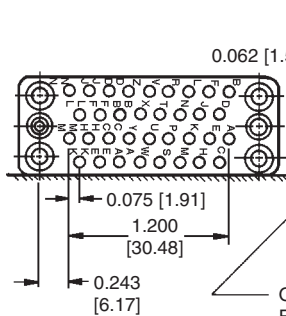
MATERIAL: GLASS FILLED DIALYL PHTHALATE  
PER ASTM-D-5948 TYPE SDG-F

## VAPL SERIES RIGHT ANGLE PRINTED BOARD MOUNT CONNECTORS

### FEMALE CONNECTOR

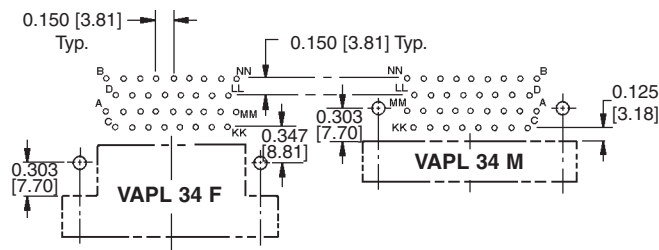


### MALE CONNECTOR



ON A MALE CONNECTOR, THE  
FEMALE JACKSCREW IS LOCATED  
AT CONTACT POSITION A

## VAPL SERIES RIGHT ANGLE PRINTED BOARD HOLE PATTERN



FOR MOUNTING BRACKET DIMENSIONS SEE GAPL SERIES, GAPL 34 VARIANT, PAGE 30

SUGGEST 0.052 [1.32] Ø HOLES IN PRINTED BOARD FOR CONTACT TERMINATIONS

SUGGEST 0.125 [3.18] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES

DIMENSIONS ARE IN INCHES [MILLIMETERS].  
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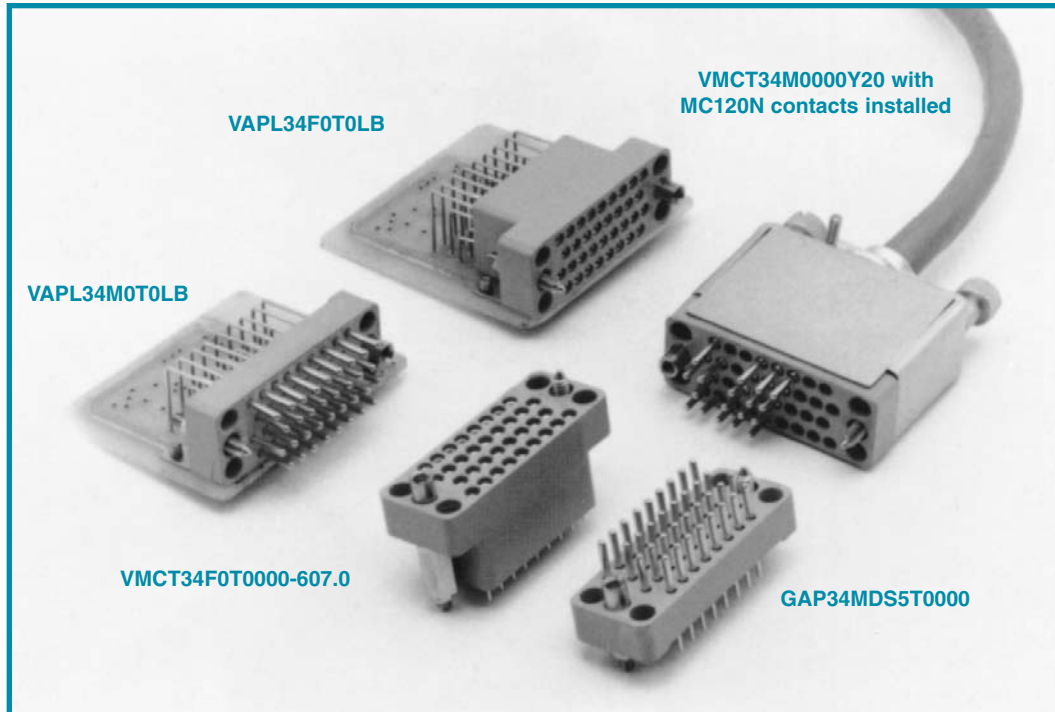
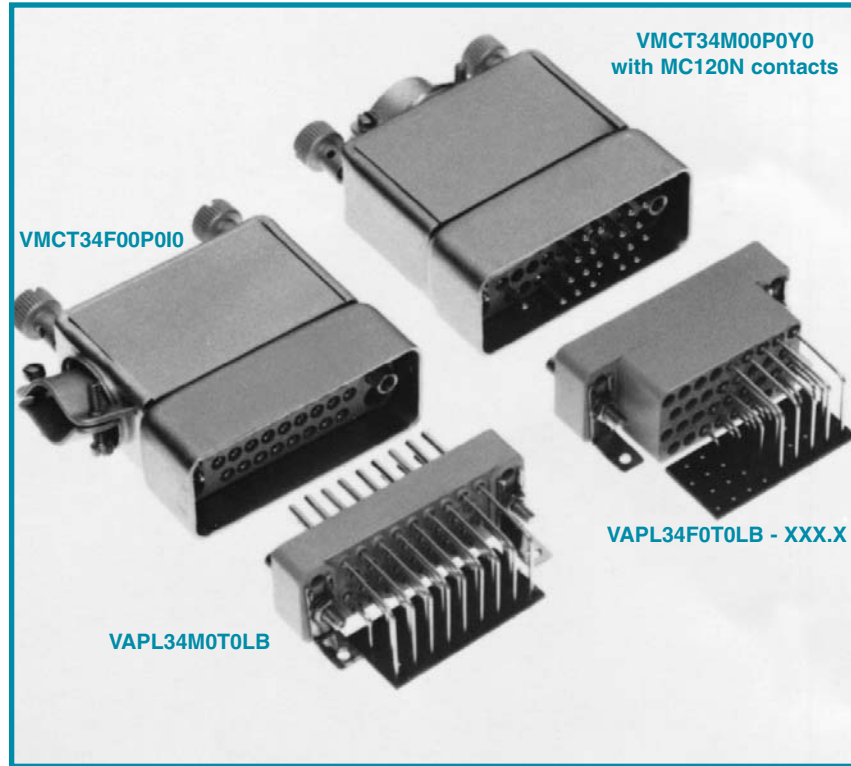
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V.35 SERIES



## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 9

### VMCT SERIES

STEP	1	2	3	4	5	6	7	8	9	10	11
EXAMPLE	VMCT	34	F	0	0	R	B	Z	0	/AA	
<b>STEP 1 - BASIC SERIES</b> VMCT Series (V.35).											<b>STEP 11 - SPECIAL OPTIONS</b> CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS
<b>STEP 2 - CONNECTOR VARIANTS</b> 34											<b>STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS</b> /AA - Compliant per EU Directive 2002/95/EC (RoHS)
<b>STEP 3 - CONNECTOR GENDER</b> M - Male Insulator F - Female Insulator											 <b>NOTE:</b> If compliance to environmental legislation is not required, this step will not be used. Example: VMCT34F00RBZ0
<b>STEP 4 - CONTACT TERMINATION TYPE</b> All Female contacts "closed entry" design. 0 - Contacts to be ordered separately, see contact ordering charts.											<b>*STEP 9 - ADDITIONAL FEATURES</b> B - For black anodized aluminum parts. C - Set screw option, offered on the E and EL jackscrew systems. R - For yellow chromate coating on aluminum parts. V - Lock tab. VL - Lock lever. FB - Floating bushings for mounting plate. 0 - If no additional options are required.
<b>*STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEM</b> G - Polarizing grounding guides. N - Polarizing guides. NSS - Stainless steel polarizing guides. T - Fixed jackscrews. E - Short turnable jackscrews, offered with set screw option. EL - Long turnable jackscrews, offered with set screw option. 0 - If no polarizing guides or jackscrews are required. Also, use "0" if ordering hoods equipped with jackscrews, see STEP 8.											<b>*STEP 8 - CABLE ADAPTERS (HOODS)</b> J - Top opening hood (formed). L - Side opening hood (formed). Y - Top opening hood (formed), equipped with stainless steel jackscrew system. I - Side opening hood (formed), equipped with stainless steel jackscrew system. Z - Top opening hood (drawn, side access), equipped with stainless steel jackscrew system. V - Side opening hood (drawn, side access), equipped with stainless steel jackscrew system. 0 - If no hoods are required.
<b>*STEP 6 - SHELLS AND MOUNTING PLATES</b> P - Male shell. R - Female shell. H - Mounting plate. W - Male shell with mounting plate. U - Female shell with mounting plate. 0 - If no shells or mounting plates are required.											<b>*STEP 7 - POLARIZATION POSITIONS OF SHELLS</b> Select letter to designate position of male pin and female slot for polarization system.  A, B, C, D, E, F, G 0 - If no polarization is required or if no shells are required.

**\*NOTE:** \*NOTE: FOR DETAILS OF ITEMS LISTED IN STEPS 5 THROUGH 9, SEE HEAVY-DUTY RECTANGULAR CONNECTOR ACCESSORIES SECTION, GMCT 34 VARIANT, PAGES 51-66.