

MIL-DTL-83513 /28 TO /33

# PCB CONNECTOR

## STRAIGHT 0.075" PITCH

### METAL SHELL

- Only available in metal shell version.
- Environmentally sealed.
- Board straight connector for flexible and rigid printed circuit boards.
- Several tail lengths available.

**CAGE CODE : OK0J2**

## IDENTIFICATION CODE

**M83513/**
**31-F**
**03**
**N**
**W**

### SERIES

**M83513/** : QPL series.

### TYPE

- 28-A** : Pin connector, metal shell, 9 contacts.
- 28-B** : Pin connector, metal shell, 15 contacts.
- 28-C** : Pin connector, metal shell, 21 contacts.
- 28-D** : Pin connector, metal shell, 25 contacts.
- 28-E** : Pin connector, metal shell, 31 contacts.
- 28-F** : Pin connector, metal shell, 37 contacts.
- 29-G** : Pin connector, metal shell, 51 contacts.
- 30-H** : Pin connector, metal shell, 100 contacts.
- 31-A** : Socket connector, metal shell, 9 contacts.
- 31-B** : Socket connector, metal shell, 15 contacts.
- 31-C** : Socket connector, metal shell, 21 contacts.
- 31-D** : Socket connector, metal shell, 25 contacts.
- 31-E** : Socket connector, metal shell, 31 contacts.
- 31-F** : Socket connector, metal shell, 37 contacts.
- 32-G** : Socket connector, metal shell, 51 contacts.
- 33-H** : Socket connector, metal shell, 100 contacts.

*See pages 16&17 for contact arrangements.*

### TERMINATION LENGTH

**01** : 2.80 mm (.109").

**02** : 3.56 mm (.140").

**03** : 4.37 mm (.172").

 Tolerance  $\pm 0.13$  mm (.005").

### SHELL FINISH

**C** : Cadmium plating.

**N** : Nickel plating.

**P** : Passivated stainless steel.

### HARDWARE CODE

**N** : No jackpost or threaded insert.

**P** : Jackpost installed.

**T** : Threaded inserts installed. For 28-A to 29-G and 31-A to 32-G only.

**W** : Jackpost and threaded inserts installed.

For 28-A to 29-G and 31-A to 32-G only.

**U** : Threaded inserts installed. For 30-H and 33-H only.

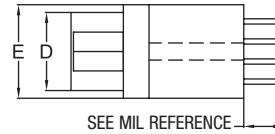
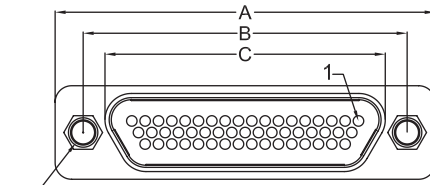
**Y** : Jackpost and threaded inserts installed. For 30-H and 33-H only.

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**

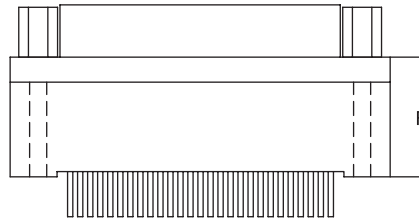
# DIMENSIONS

Dimensions are in millimetres (inches).

## FEMALE connector



9-51 contacts :  
 Ø2.24/2.44 (.088/.096) or THD INSERT 2-56 UNC 2B  
 100 contacts  
 Ø3.68/3.81 (.145/.150) or THD INSERT 4-40 UNC 2B



SEE CONTACT LAYOUT ON PCB PAGES 52/53

	A max.	B ± 0.13 (±.005)	C max.		D max.		E max.	F max.
			Male	Female	Male	Female		
9 P / 9 S	19.94 .785	14.35 .565	8.48 .334	10.16 .400	4.69 .185	6.35 .250	7.87 .310	9.02 .355
15 P / 15 S	23.75 .935	18.16 .715	12.29 .484	14.00 .551	4.69 .185	6.35 .250	7.87 .310	9.02 .355
21 P / 21 S	27.56 1.085	21.97 .865	16.10 .634	17.81 .701	4.69 .185	6.35 .250	7.87 .310	9.02 .355
25 P / 25 S	30.10 1.185	24.51 .965	18.64 .734	20.35 .801	4.69 .185	6.35 .250	7.87 .310	9.02 .355
31 P / 31 S	33.91 1.335	28.32 1.115	22.45 .883	24.16 .951	4.69 .185	6.35 .250	7.87 .310	9.02 .355
37 P / 37 S	37.72 1.485	32.13 1.265	26.26 1.034	27.96 1.101	4.69 .185	6.35 .250	7.87 .310	9.02 .355
51 P / 51 S	36.45 1.435	30.86 1.215	24.99 .984	26.70 1.051	5.79 .228	7.44 .293	10.16 .400	9.02 .355
100 P / 100 S	55.12 2.170	45.72 1.800	35.15 1.384	36.86 1.451	6.88 .271	8.46 .333	12.95 .510	10.92 .430

## SUMMARY OF CHARACTERISTICS

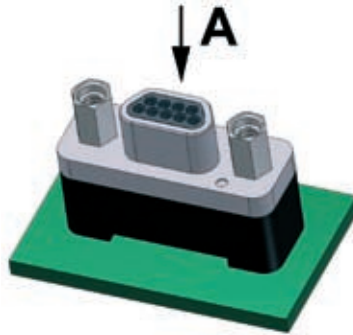
ELECTRICAL & MECHANICAL PERFORMANCE	
CURRENT RATING	3 A max.
CONTACT RESISTANCE	8 mΩ max.
INSULATION RESISTANCE	5000 MΩ min. @ 500 V DC
DIELECTRIC WITHSTANDING VOLTAGE	Sea level : 600 V AC Altitude 21 km (70,000 ft) : 150 V AC
CONTACT ENGAGING FORCE	170 g max. (6 oz)
CONTACT SEPARATING FORCE	14 g min. (0.5 oz)
CONTACT RETENTION	2.26 kg (5 lbs)
DURABILITY	500 mating cycles min.
VIBRATION	20g's - No discontinuity > 1 μs
SHOCK	50g's - No discontinuity > 1 μs

MATERIAL & FINISH	
SHELL	Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
MOULDED INSULATOR	Liquid Crystal Polymer (LCP)
INTERFACIAL SEAL	Fluorosilicone rubber
PIN CONTACT	Copper and beryllium copper, gold over nickel plating
SOCKET CONTACT	Copper alloy, gold over nickel plating
ENCAPSULANT	Epoxy resin
MOULDED TRAY	Liquid Crystal Polymer (LCP)
PCB TERMINALS	Gold plated copper, solder dipped in 63/37 tin-lead
HARDWARE	300 series stainless steel, passivated

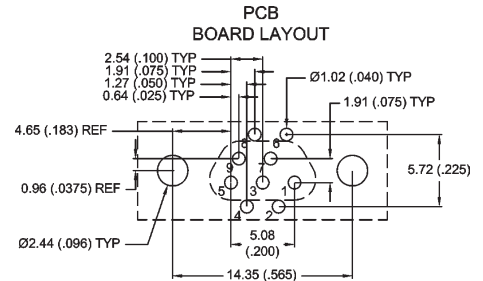
SEE PAGE 15 FOR MORE INFORMATION

# PCB LAYOUT FOR QPL STRAIGHT 0.075" PITCH - MALE CONNECTORS

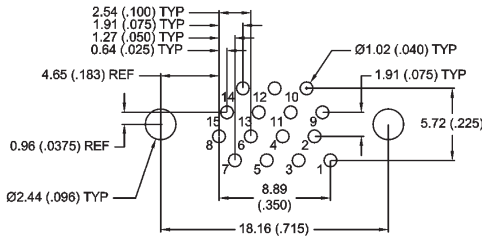
VIEW A



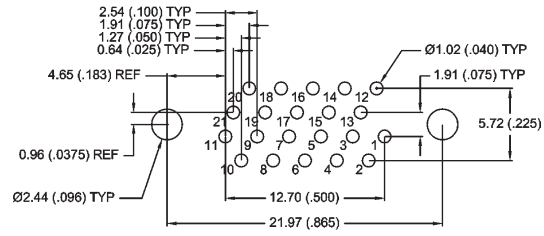
9 CONTACTS - VIEW A



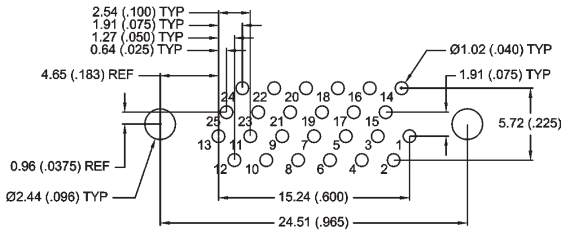
15 CONTACTS - VIEW A



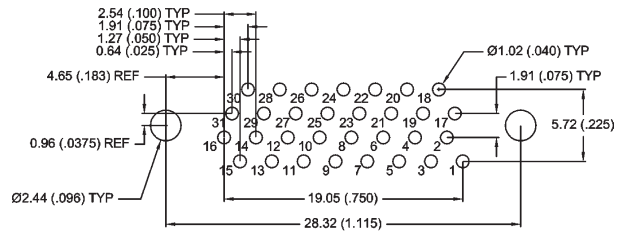
21 CONTACTS - VIEW A



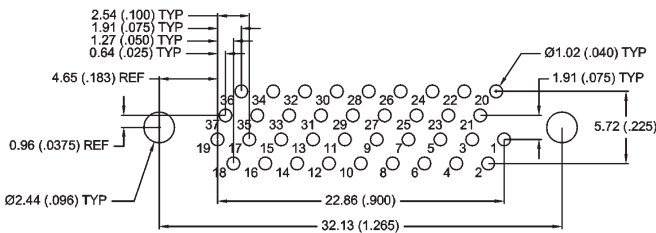
25 CONTACTS - VIEW A



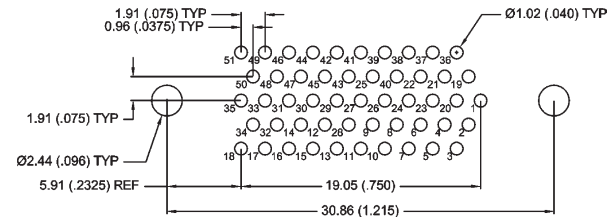
31 CONTACTS - VIEW A



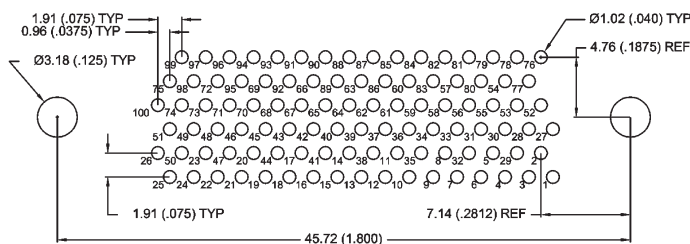
37 CONTACTS - VIEW A



51 CONTACTS - VIEW A

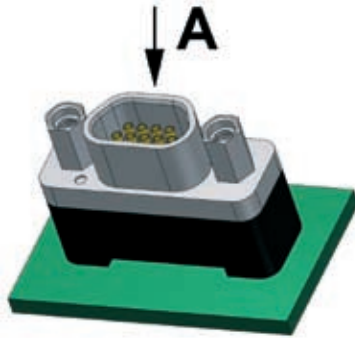


100 CONTACTS - VIEW A

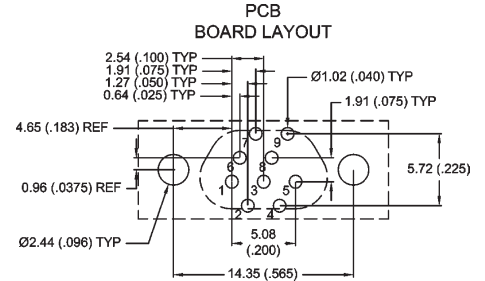


# PCB LAYOUT FOR QPL STRAIGHT 0.075" PITCH - FEMALE CONNECTORS

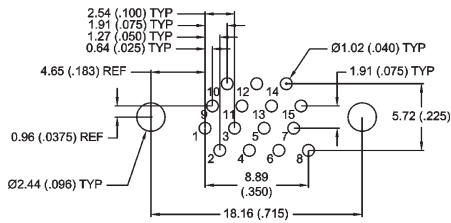
VIEW A



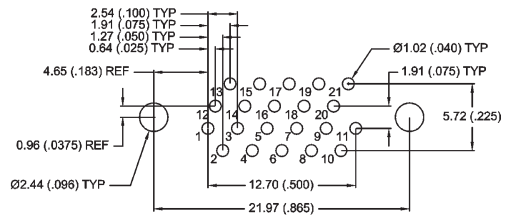
9 CONTACTS - VIEW A



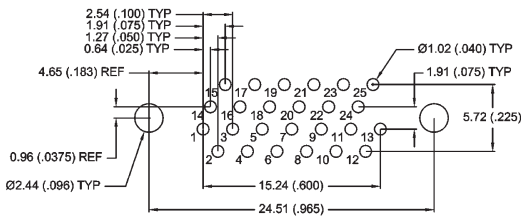
15 CONTACTS - VIEW A



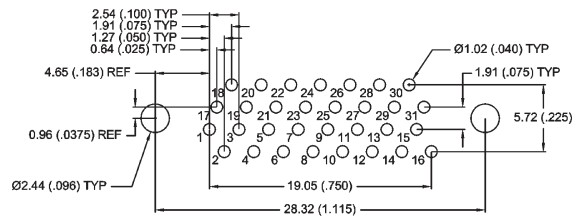
21 CONTACTS - VIEW A



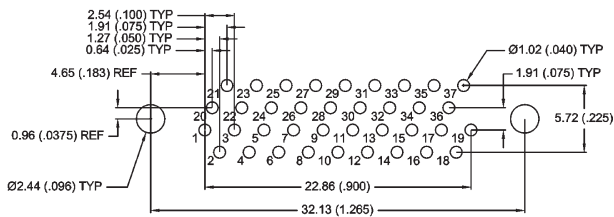
25 CONTACTS - VIEW A



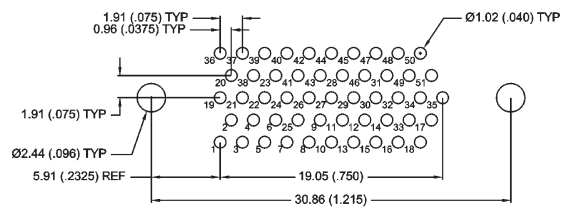
31 CONTACTS - VIEW A



37 CONTACTS - VIEW A



51 CONTACTS - VIEW A



100 CONTACTS - VIEW A

