

# 3M™ Pak 50 Low Profile Plug

.050" Vertical Stacking with and without Flanges

P50L Series



- Low profile offers mating heights between 0.276" - 0.472" (7-12 mm) for board stacking applications
- High temperature insulator compatible with IR and wave soldering
- Guide posts for easy mating/unmating
- Retention clips stabilize connector to the board during wave soldering
- RoHS\* compliant version (DA plating suffix) available

Date Modified: March 1, 2006

TS-2053-02  
Sheet 1 of 3

---

## Physical

### Insulation

Material: Glass filled PPS  
Flammability: UL 94V-0  
Color: Black

### Contact

Material: Phosphor Bronze

### Plating

Underplating: Nickel  
Wiping Area: Gold flash  
Solder Tails: Tin Alloy over Nickel or Gold Flash (RoHS compliant)  
Retaining Clips: Tin lead or tin-copper (RoHS compliant)

---

## Electrical

**Current Rating:** 0.5 A  
**Insulation Resistance:**  $10^3 \Omega$  at 500 Vdc  
**Withstanding Voltage:** 650V AC for 1 minute

---

## Environmental

**Temperature Rating:** -55°C to +85°C  
**Process Rating:** 260°C (per J-STD-020C)

"RoHS compliant" means that the product or part does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's knowledge and belief based upon information provided by third party suppliers to 3M.

File No.: E68080

# 3M™ Pak 50 Low Profile Plug

.050" Vertical Stacking with and without Flanges

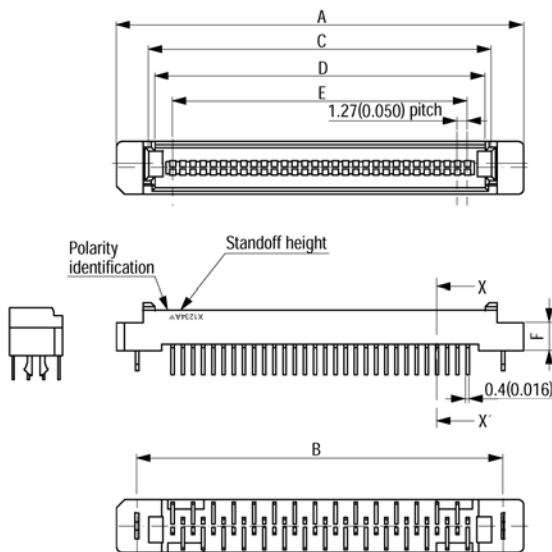
P50L Series

## Plug with Flanges and Retention Clips

### Product Table / Dimensions

Contact Quantity	A	B	C	D	E
20	25.43 [1.001]	20.32 [0.800]	17.43 [0.686]	15.83 [0.623]	11.43 [0.450]
30	31.78 [1.251]	26.67 [1.050]	23.78 [0.936]	22.18 [0.873]	17.78 [0.700]
40	38.13 [1.501]	33.02 [1.300]	30.13 [1.186]	28.53 [1.123]	24.13 [0.950]
50	44.48 [1.751]	39.37 [1.550]	36.48 [1.436]	34.88 [1.373]	30.48 [1.200]
60	50.83 [2.001]	45.72 [1.800]	42.83 [1.686]	41.23 [1.623]	36.83 [1.450]
80	63.53 [2.501]	58.42 [2.300]	55.53 [2.186]	53.93 [2.123]	49.53 [1.950]
100	76.23 [3.001]	71.12 [2.800]	68.23 [2.686]	66.63 [2.623]	62.23 [2.450]
120	88.93 [3.501]	83.82 [3.300]	80.93 [3.186]	79.33 [3.123]	74.93 [2.950]

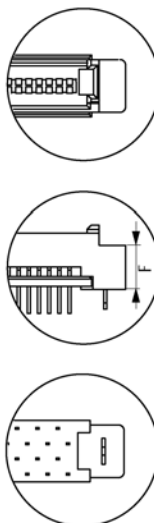
A type (Standoff height)



Note:

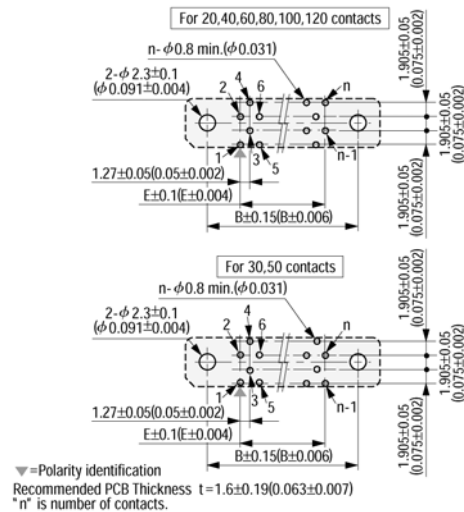
Plugs/sockets with flanges and retention clips are not interchangeable with plugs/sockets without flanges and retention clips

C type



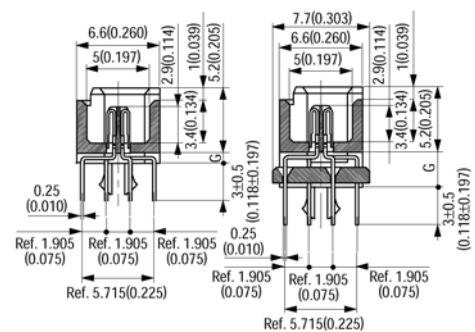
Type	F	G
A	3.50 [0.138]	0.80 [0.032]
C	5.50 [0.217]	2.80 [0.110]

### Printed Circuit Board Layout (Component Side View)



▽=Polarity identification  
Recommended PCB Thickness  $t = 1.6 \pm 0.19 (0.063 \pm 0.007)$   
"n" is number of contacts.

### X-X' Cross Section



A type

C type

## Ordering Information

### P5XL - XXXP - X - XXX

0 = With Flanges and Retention Clips  
1 = Without Flanges and Retention Clips

Contact Quantity  
See Table

A = Type A  
C = Type C

Plating Options:  
TGF =  $2 \mu\text{m}$  [  $0.05 \mu\text{m}$  ] min. Gold with Sn-Pb solder tails  
DA = Gold flash overall (RoHS compliant)

TS-2053-02  
Sheet 2 of 3

3M

Interconnect Solutions

<http://www.3M.com/interconnects/>

3M is a trademark of 3M Company.

For technical, sales or ordering information call

800-225-5373

# 3M™ Pak 50 Low Profile Plug

.050" Vertical Stacking with and without Flanges

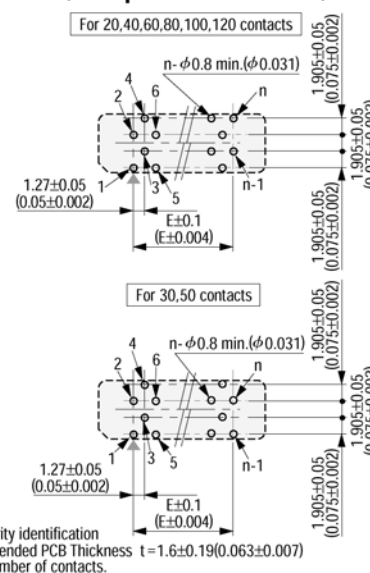
P50L Series

Product Table / Dimensions

Contact Quantity	A	B	C	D	E
20	18.83 [0.741]	17.43 [0.686]	15.83 [0.623]	14.23 [0.560]	11.43 [0.450]
30	25.18 [0.991]	23.78 [0.936]	22.18 [0.873]	20.58 [0.810]	17.78 [0.700]
40	31.53 [1.241]	30.13 [1.186]	28.53 [1.123]	26.93 [1.060]	24.13 [0.950]
50	37.88 [1.491]	36.48 [1.436]	34.88 [1.373]	33.28 [1.310]	30.48 [1.200]
60	44.23 [1.741]	42.83 [1.686]	41.23 [1.623]	39.63 [1.560]	36.83 [1.450]
80	56.93 [2.241]	55.53 [2.186]	53.93 [2.123]	52.33 [2.060]	49.53 [1.950]
100	69.63 [2.741]	68.23 [2.686]	66.63 [2.623]	65.03 [2.560]	62.23 [2.450]
120	82.33 [3.241]	80.93 [3.186]	79.33 [3.123]	77.73 [3.060]	74.93 [2.950]

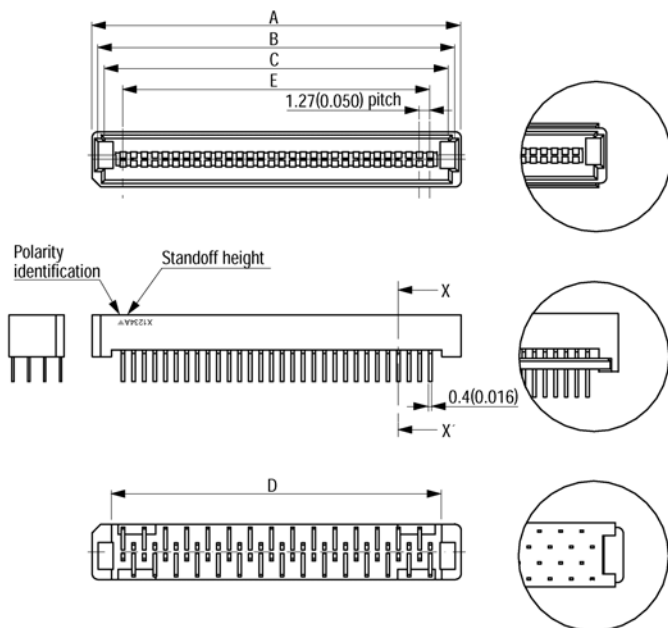
Plug without Flanges and Retention Clips

Printed Circuit Board Layout (Component Side View)

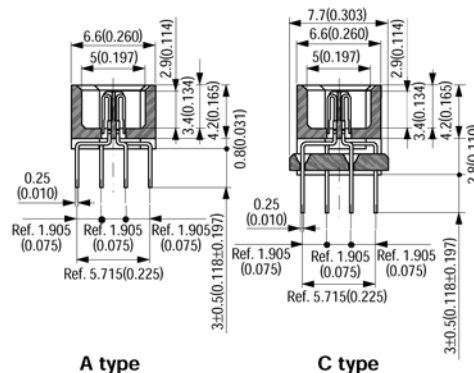


A type (Standoff height)

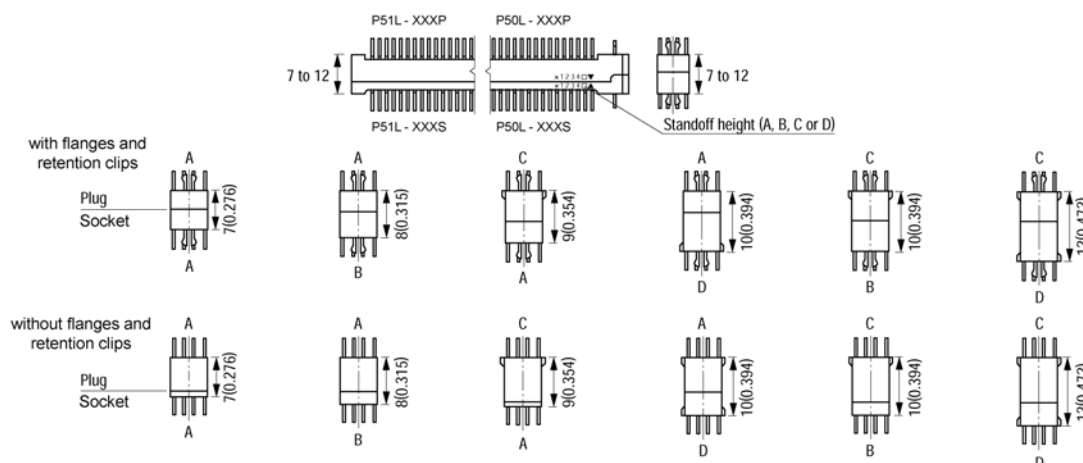
C type



X-X' Cross Section



Stacked Mating Combinations



TS-2053-02  
Sheet 3 of 3

3M

Interconnect Solutions

<http://www.3M.com/interconnects/>

3M is a trademark of 3M Company.

For technical, sales or ordering information call

800-225-5373

## Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.



### 3M Electronics

6801 River Place Blvd.  
Austin, TX 78726-9000  
800/225-5373  
[www.3M.com/electronics](http://www.3M.com/electronics)

## Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture for a period of one (1) year from the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



Minimum 10%  
Post-Consumer Fiber

Printed in USA.

© 3M 2006