

IDEAL FOR TODAY'S AND TOMORROW'S COMPACT ELECTRONICS

- Wearables (smart watches, cameras, fitness bands, headphones, etc.)
- Laptops
- Tablets/eReaders
- Cell/Smart Phones
- Gaming/Hand Held Devices/Virtual Reality
- Infotainment/Automotive Electronics



Parts for smaller and/or thinner applications have been designed. Please contact us for more information.

<p>MPP™ microPEM® Self-clinching Pins Ideal for positioning and alignment applications- PAGE 3</p>		<p>MSIA™/MSIB™ microPEM® Inserts For Plastics Designed for use in straight or tapered holes. The symmetrical design eliminates the need for orientation. They are installed by pressing them into the mounting hole with ultrasonic equipment or with a thermal press - PAGE 8</p>	
<p>MSO4™ microPEM® Self-clinching Standoffs Designed for mounting and/or spacing in extremely limited space applications - PAGE 3</p>		<p>MSOFS™ microPEM® Flaring Standoffs Attach permanently in any type of panel, including metal, plastic and PC board. Flaring feature allows for captivation of multiple panels - PAGE 9</p>	
<p>TA™/T4™ microPEM® TackPin® Fasteners Enable sheet-to-sheet attachment, replacing costly screw installation in applications where disassembly is not required - PAGE 4</p>		<p>SMTSO™ microPEM® Surface Mount Fasteners These fasteners for compact electronic assemblies attach to PC boards for nut/standoff applications. These fasteners mount on PC boards in the same manner and at the same time as other surface mount components prior to the automated reflow solder process - PAGE 10</p>	
<p>TKA™/TK4™ microPEM® TackSert® Pins Enables attachment of metal sheets to plastic, replacing costly screw installation in applications where disassembly is not required - PAGE 5</p>		<p>microPEM® Screws Available in thread codes as small as M0.8 and lengths as short as 1 mm / .039" - PAGE 11</p>	
<p>TFA™ microPEM® FLEXTACK™ FASTENERS The Bellville washer shaped head of the microPEM® FlexTack™ fastener is designed to increase vertical installation tolerance in designs - PAGE 6</p>	<p>NEW</p>	<p>Material and finish specifications - PAGE 12</p>	
<p>TS4™ microPEM® TackScrew™ Fasteners Enable cost effective sheet-to-sheet attachment by simply pressing into place. Can be removed by simply unscrewing, similar to other threaded fasteners - PAGE 6</p>		<p>Installation - PAGES 13 - 16</p>	
<p>CDS™ microPEM® ClampDisk™ Fasteners Press straight onto a 1 mm pin to replace threads, adhesive, rivets and other small fasteners - PAGE 7</p>		<p>Performance data - PAGES 17 - 19</p>	



Fastener drawings and models are available at www.pemnet.com

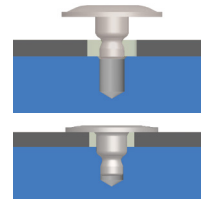


TFA™ microPEM® FLEXTACK™ FASTENERS

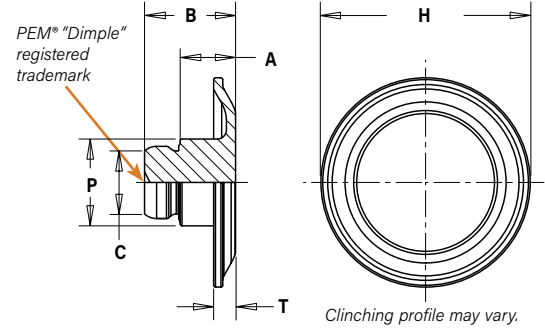
The Belleville washer shaped head of the microPEM® FlexTack™ fastener is designed to increase vertical installation tolerance in designs.

- Alternative to using micro-screws, eliminating the need to tap or use threaded inserts.
- Installation time to simply press the part in (1.5 seconds) is less than the time to thread a screw in, equals less total installed cost.
- The Belleville-shaped head allows for stack-up tolerance relief in a design.
- Lowest overall total installed costs from the elimination of the following:
 - Cost of screw, patch to prevent loosening, threaded insert or tapped hole and driver bits
 - Cost of rework due to cross-threading or driver bit "cam-out"

NEW



The Belleville shaped head flattens upon a simple press-in installation and draws panels together to accommodate vertical stack tolerances.



Patented

PART NUMBER DESIGNATION

TFA - 10 - 025

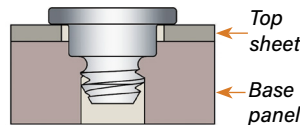
Type & Material
Base Panel Hole Size Code
Top Sheet Thickness Code

Type	Base Panel Hole Size Code	Top Sheet Thickness Code	Top Sheet Thickness		Base Panel Min. Sheet Thickness ⁽¹⁾		Top Sheet Hole Size ±0.05 mm / ±.002"		Base Panel Hole Size -0.05 mm / -.002"		A ±0.04 mm / ±.0015"		B ±0.08 mm / ±.003"		C Max.		H ±0.1 mm / ±.004"		P ±0.05 mm / ±.002"		T ±0.1 mm / ±.004"		Min. Dist. Hole \varnothing To Edge	
			mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		
TFA	10	025	0.18 - 0.28	.007 - .011	0.89	.035	1.47	.058	1.02	.040	0.67	.026	1.16	.046	0.89	.035	2.91	.115	1.21	.048	0.3	.012	1	.039
TFA	10	035	0.28 - 0.38	.011 - .015	0.89	.035	1.47	.058	1.02	.040	0.77	.030	1.26	.050	0.89	.035	2.91	.115	1.21	.048	0.3	.012	1	.039
TFA	10	045	0.38 - 0.48	.015 - .019	0.89	.035	1.47	.058	1.02	.040	0.87	.034	1.37	.054	0.89	.035	2.91	.115	1.21	.048	0.3	.012	1	.039
TFA	10	055	0.48 - 0.58	.019 - .023	0.89	.035	1.47	.058	1.02	.040	0.97	.038	1.47	.058	0.89	.035	2.91	.115	1.21	.048	0.3	.012	1	.039

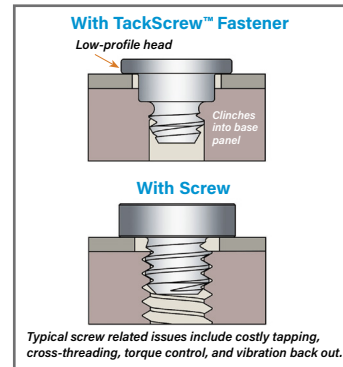
(1) 0.89 mm / .035" for blind holes and 0.5 mm / .020" for through holes.

TS4™ microPEM® TackScrew™ FASTENERS

- Allows for 1-cycle re-usability by unscrewing and then reinstallation with thread locking adhesive
- Reduce installation time vs. a screw
- Simple, press in installation eliminates many costs and concerns associated with micro screws:
 - Cross threading
 - Tapping
 - Tightening torque control
 - Vibrational back-out
- Low profile head provides space savings
- Tapered tip aligns fastener in hole
- Interference fit minimizes hole tolerance issues
- Easily installed automatically



Can be installed into blind or through hole applications.



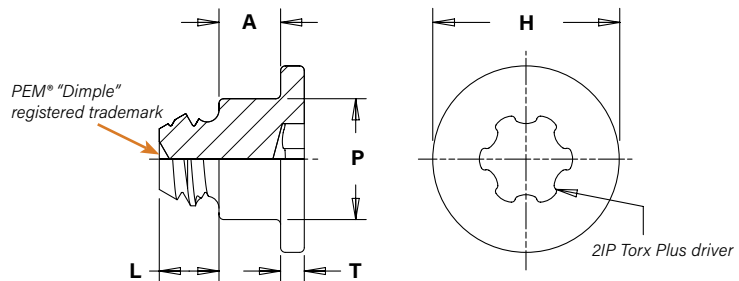
PART NUMBER DESIGNATION

TS4 - 10 - 025

Type & Material
Base Panel Hole Size Code
Top Sheet Thickness Code



Patented



Type	Material	Base Panel Hole Size Code	Top Sheet Thickness Code	Top Sheet Thickness		Base Panel Min. Sheet Thickness ⁽²⁾		Top Sheet Hole Size ±0.05 mm / ±.002"		Base Panel Hole Size ±0.025 mm / ±.001"		A ±0.05 mm / ±.002"		H ±0.1 mm / ±.004"		L ±0.1 mm / ±.004"		P ±0.05 mm / ±.002"		T ±0.1 mm / ±.004"		Min. Dist. Hole \varnothing To Edge	
				mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		
TS4	Hardened Stainless Steel	10	025	0.2 - 0.28	.008 - .011	0.91	.036	1.47	.058	0.99	.039	0.406	.016	2	.079	0.64	.025	1.3	.051	0.25	.010	1	.039
TS4	Hardened Stainless Steel	10	050	0.48 - 0.56	.019 - .022	0.91	.036	1.47	.058	0.99	.039	0.686	.027	2	.079	0.64	.025	1.3	.051	0.25	.010	1	.039

(2) Minimum sheet to prevent protrusion from through hole or minimum blind hole depth.

MATERIAL AND FINISH SPECIFICATIONS

Type	Fastener Materials							Standard Finishes ⁽¹⁾			For Use in Sheet Hardness: ⁽²⁾						
	Carbon Steel	Age Hardened A286 Stainless Steel	300 Series Stainless Steel	Hardened 400 Series Stainless Steel	Hardened Aluminum	Aluminum	Free-Machining Leaded Brass	Passivated and/or Tested Per ASTM A380	Electro-Plated Tin ASTM B 545, Class A, with Clear Preservative Coating, Annealed ⁽³⁾	Plain Finish	HRB 50 / HB 89 or Less	HRB 88 / HB 183 or Less	HRB 92 / HB 202 or Less	PC Board	Plastics	Castings and Brittle Materials	Any Panel Hardness
MPP		▪						▪					▪				
MSO4				▪				▪					▪				
SMTSO	▪								▪					▪			
TA					▪					▪	▪						
T4				▪				▪				▪					
TKA					▪					▪				▪	▪		
TK4				▪				▪						▪	▪	▪	
TFA					▪					▪	▪						
TS4				▪				▪				▪					
CDS			▪					▪									▪ ⁽⁴⁾
MSIA										▪					▪		
MSIB										▪					▪		
MSOFS			▪					▪									▪
Part Number Codes For Finishes							None	ET	None								

(1) See PEM Technical Support section of our web site for related plating standards and specifications.

(2) HRB - Hardness Rockwell "B" Scale. HB - Hardness Brinell.

(3) Optimal solderability life noted on packaging.

(4) The top panel can be any material and the pin must be under a max hardness of HRB 90 / HB 192.

A NOTE ABOUT HARDENED 400 SERIES STAINLESS STEEL

In order for self-clinching fasteners to work properly, the fastener must be harder than the sheet into which it is being installed. In the case of stainless steel panels, fasteners made from 300 Series Stainless Steel do not meet this hardness criteria. It is for this reason that 400 series fasteners (MSO4, T4, TK4 and TS4) are offered. However, while these 400 Series fasteners install and perform well in 300 Series stainless sheets they should not be used if the end product:

- Will be exposed to any appreciable corrosive presence
- Requires non-magnetic fasteners
- Will be exposed to any temperatures above 300°F (149°C)

If any of the these are issues, please contact techsupport@pemnet.com for other options.

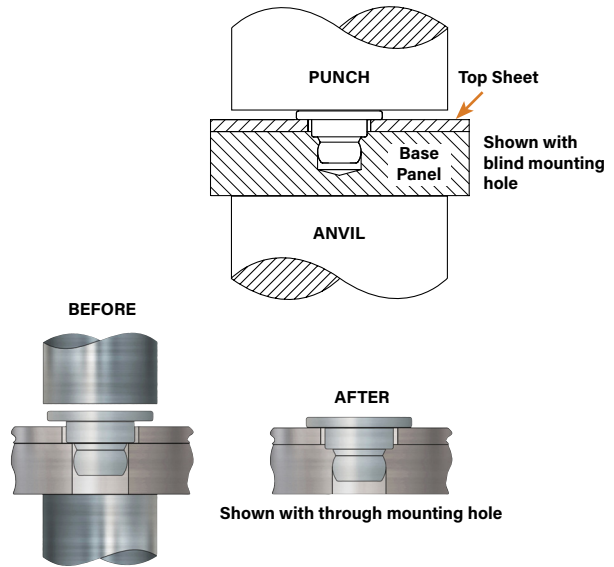
INSTALLATION

TA/T4 FASTENERS

1. Prepare properly sized mounting hole in top sheet and base panel. Base panel mounting hole can be through or blind.
2. Place top sheet and base panel in proper position.
3. Place fastener through hole in top sheet and into mounting hole (preferably the punch side) of base panel.
4. With installation punch and anvil surfaces parallel, apply squeezing force until the head of the fastener contacts the top sheet.

PEMSERTER® Installation Tooling

Size	Manual Punch Part Number	Manual Anvil Part Number
TA/T4-10-025	8014167	975200046
TA/T4-10-050		
TA/T4-10-075		

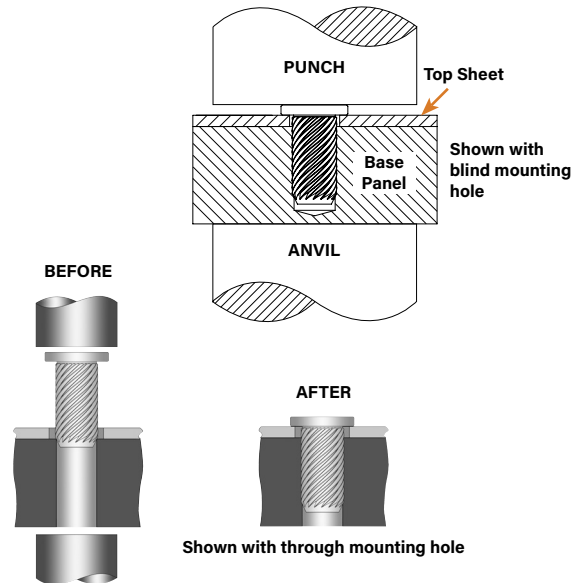


TKA/TK4 PINS

1. Prepare properly sized mounting hole in top sheet and base panel. Base panel mounting hole can be through or blind.
2. Place top sheet and base panel in proper position.
3. Place pin through hole in top sheet and into mounting hole of base panel.
4. With installation punch and anvil surfaces parallel, apply squeezing force until the head of the pin contacts the top sheet.

PEMSERTER® Installation Tooling

Size	Punch Part Number	Anvil Part Number
TKA/TK4-10-100	8014167	975200046
TKA/TK4-10-150		
TKA/TK4-10-200		
TKA/TK4-10-250		
TKA/TK4-10-300		



TFA FASTENERS

1. Prepare properly sized mounting hole in top sheet and base panel. Base panel mounting hole can be through or blind.
2. Place top sheet and base panel in proper position.
3. Place fastener through hole in top sheet and into mounting hole (preferably the punch side) of base panel.
4. With installation punch and anvil surfaces parallel, apply squeezing force until the head of the fastener flattens and contacts the top sheet.

PEMSERTER® Installation Tooling

Size	Manual Punch Part Number	Manual Anvil Part Number
TFA-10-025	8014167	975200046
TFA-10-035		
TFA-10-045		
TFA-10-055		

