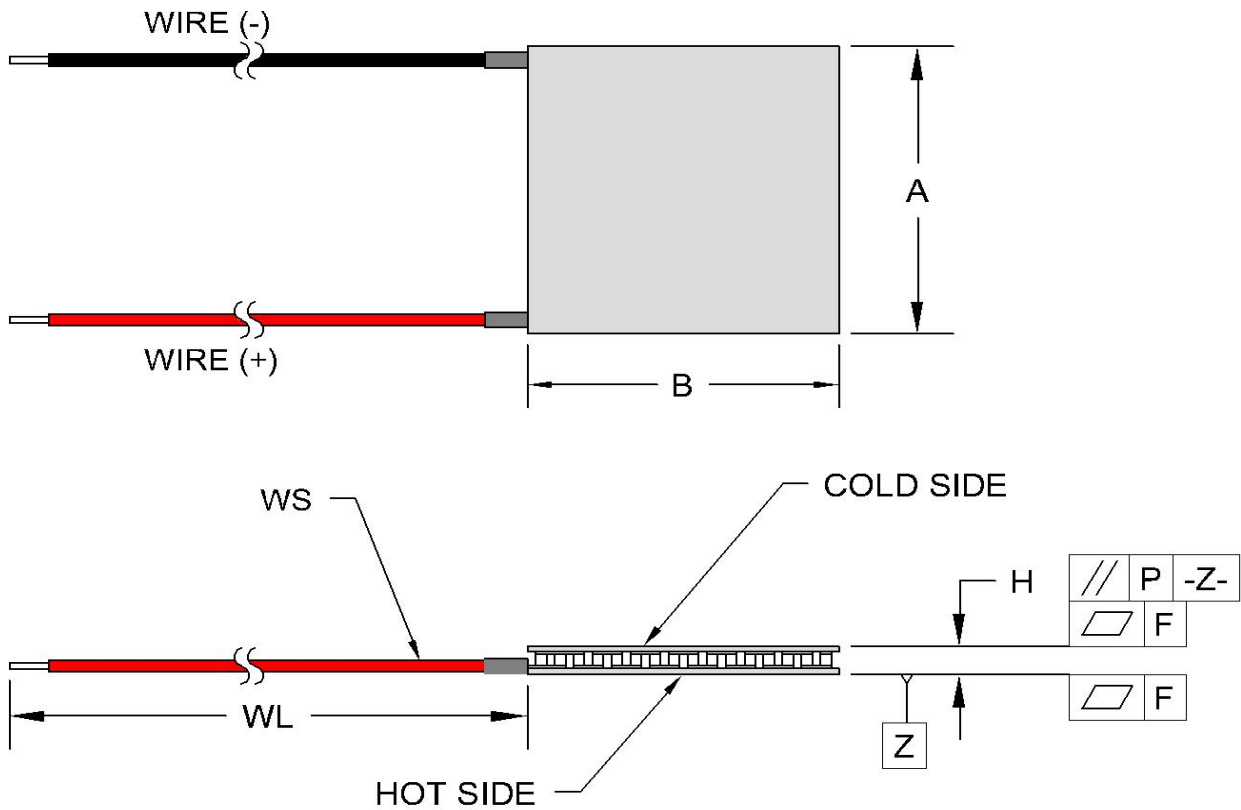


<b>VT-199-1.4-0.8 Thermoelectric Module (Peltier Module) Specifications</b>		Material Specifications (27 °C hot side temperature)	Material Specifications (50 °C hot side temperature)	Module <i>material</i> specifications are nominal values based on the hot-side temperature indicated. Thermoelectric material parameter tolerance is +/-10%.  In no case should the module temperature be allowed to exceed its maximum operation/storage temperature.  Please review all product and technical information, <i>Thermoelectric Module Mounting Procedure</i> , parameter definitions, FAQ's, and ordering information posted on our website before purchasing or using this product.
	Vmax (V)	24.6	27.3	
	I <sub>max</sub> (A)	11.3	11.3	
	Q <sub>max</sub> (W)	172.0	188.7	
DT <sub>max</sub> (°C)	69	78		
Operation/storage temperature	-40 °C to +200 °C			



Width, A (mm)	40 +0.5/-0.2
Width, B (mm)	40 +0.5/-0.2
Height, H (mm)	3.2 ±0.05
Flatness, F (mm)	0.02
Parallelism, P (mm)	0.03
Wire Size, WS (mm <sup>2</sup> )	0.5
Wire Length, WL (mm)	120

Optional Features and Notes:

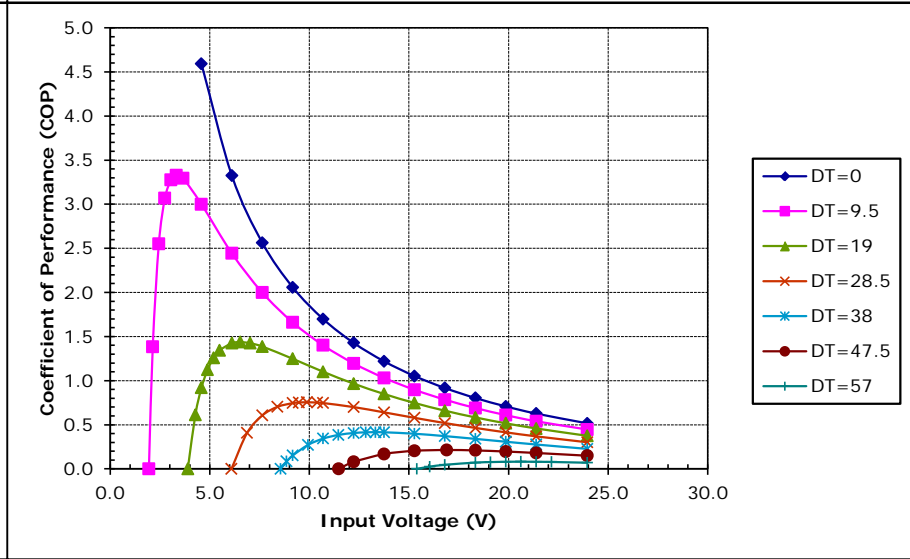
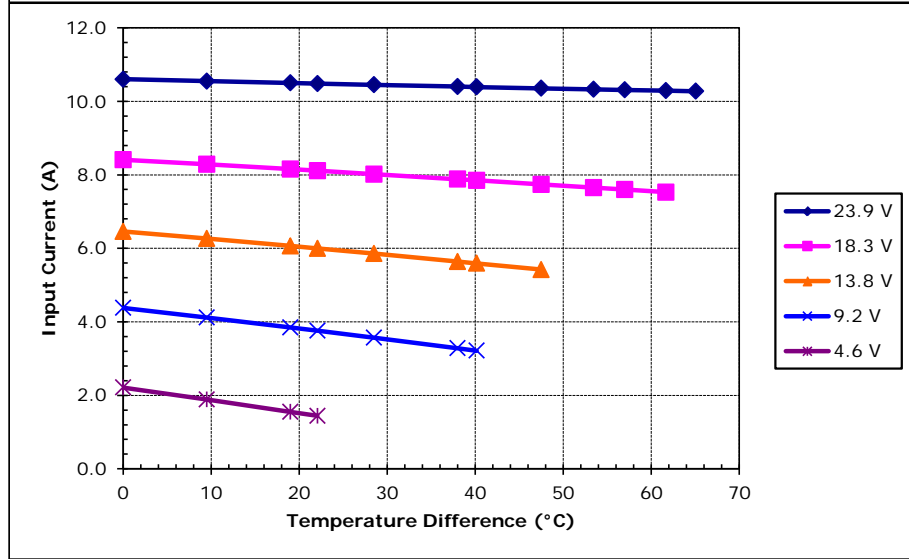
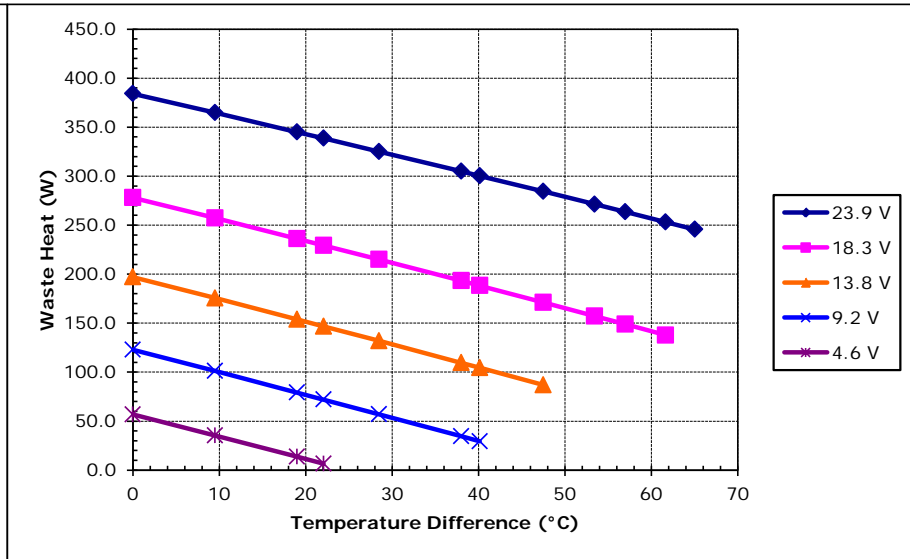
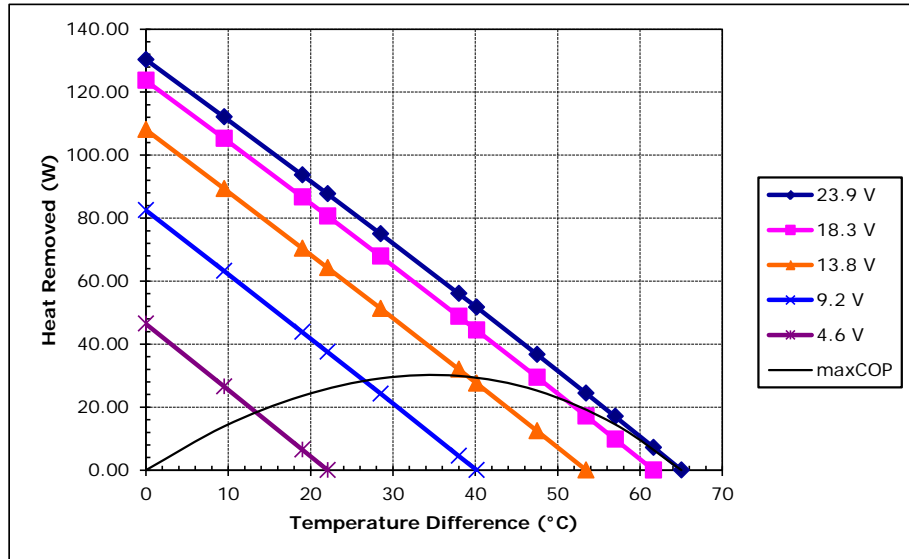
Add "P" to part number for sealing module with epoxy potting.  
Maximum operating/storage temperature with potting is 150 °C

Performance graphs include thermal resistance of substrates.

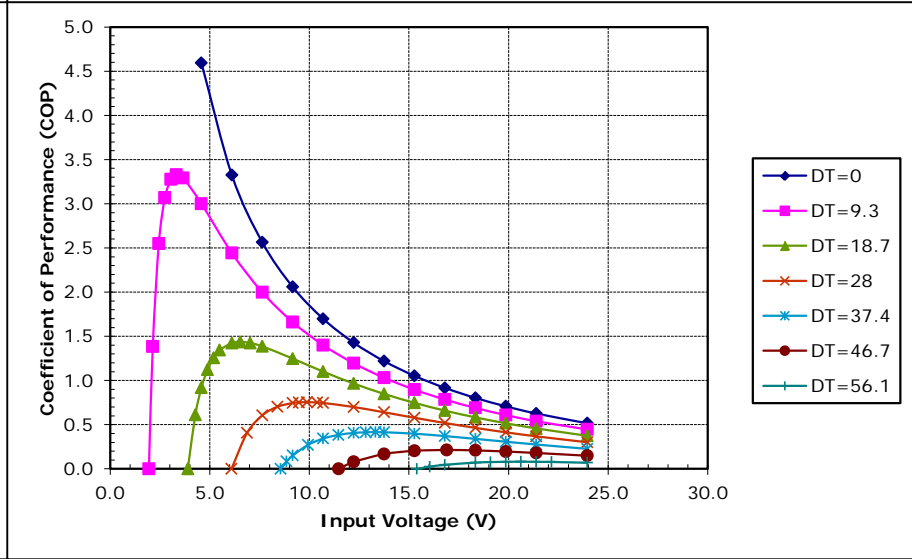
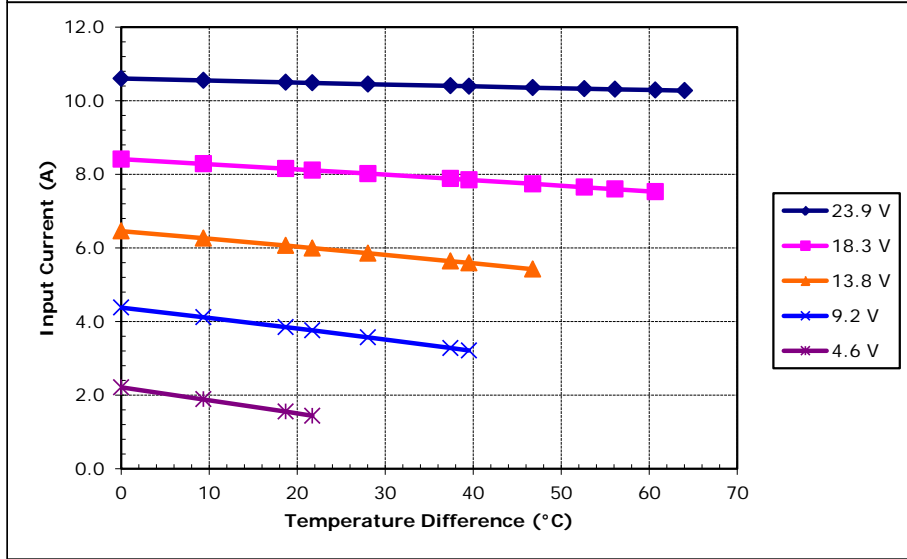
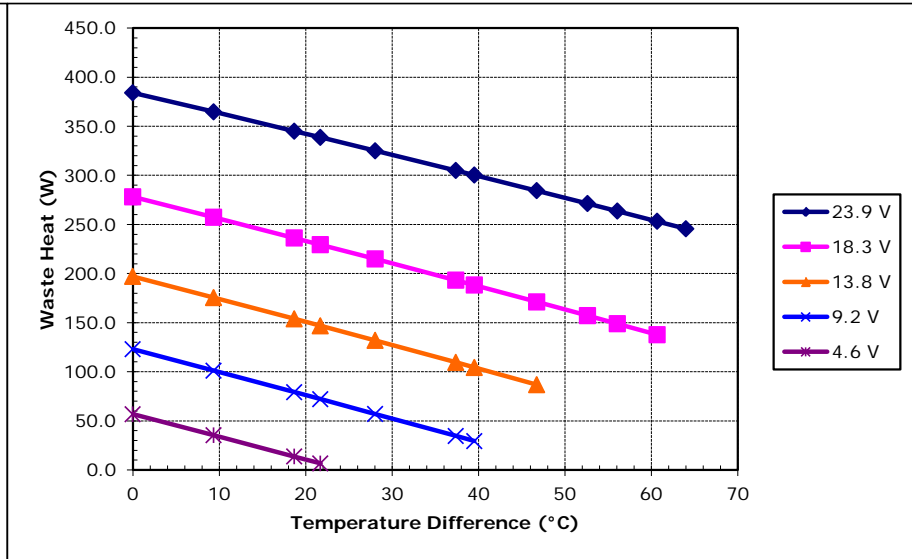
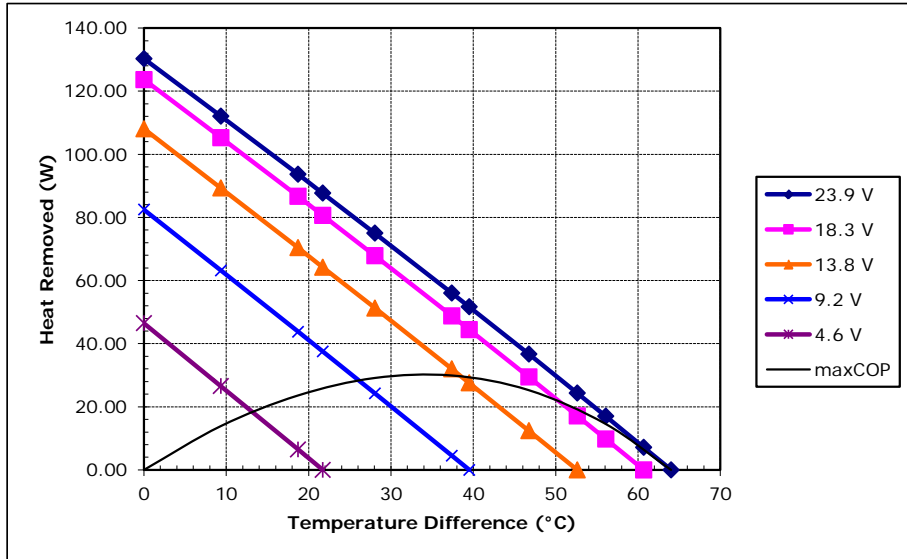
RoHS Compliant



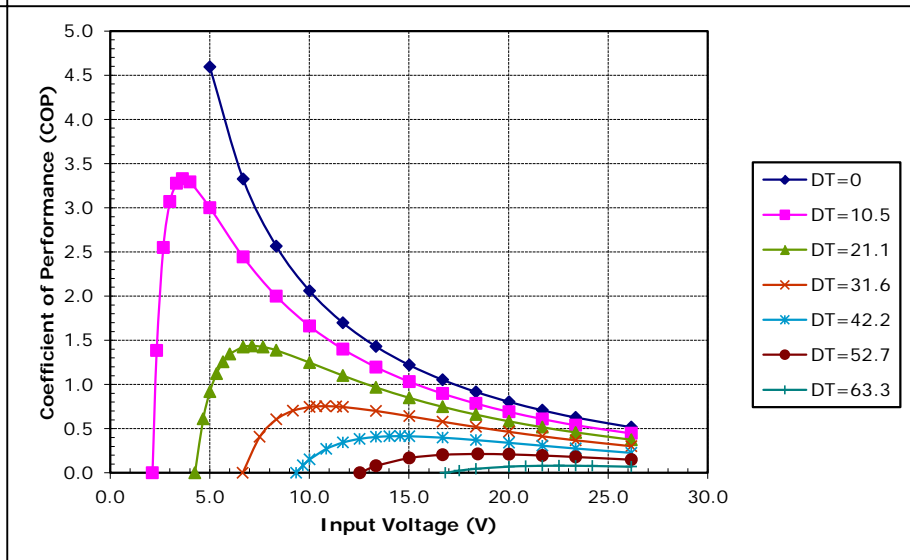
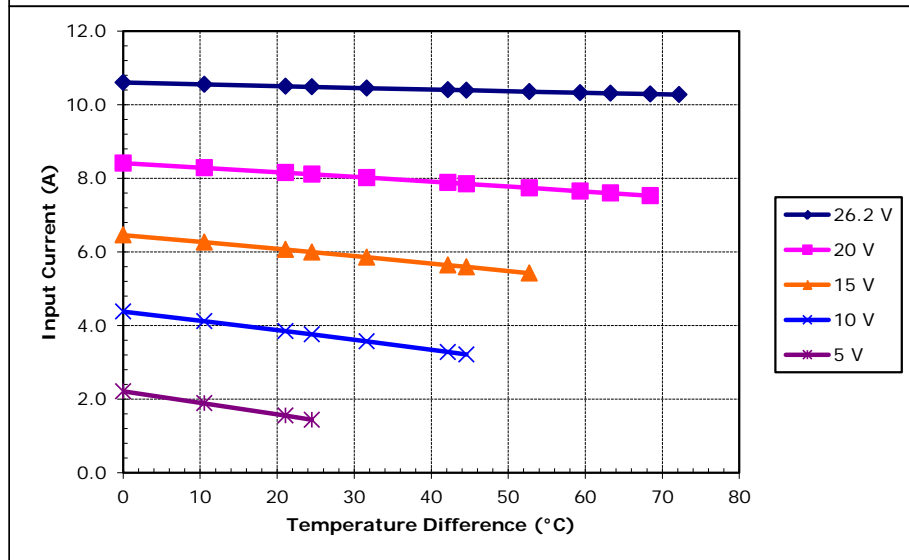
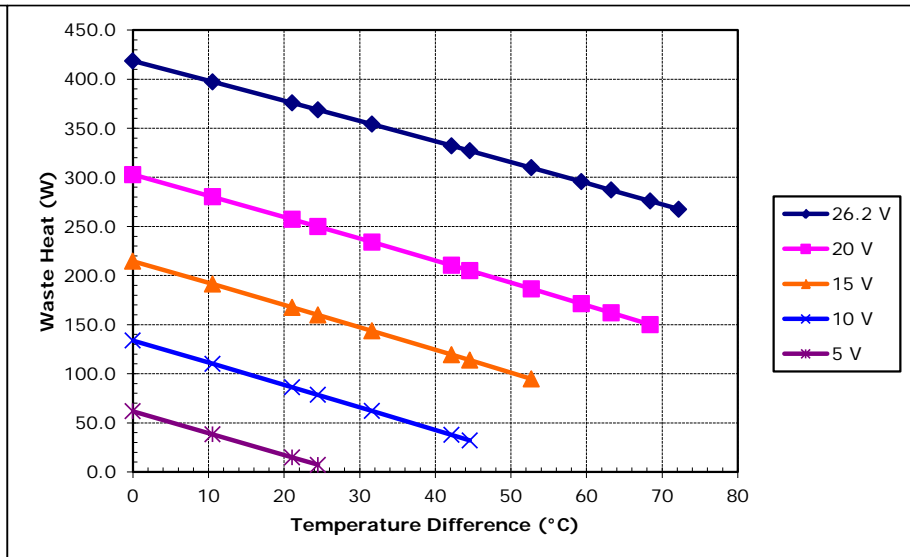
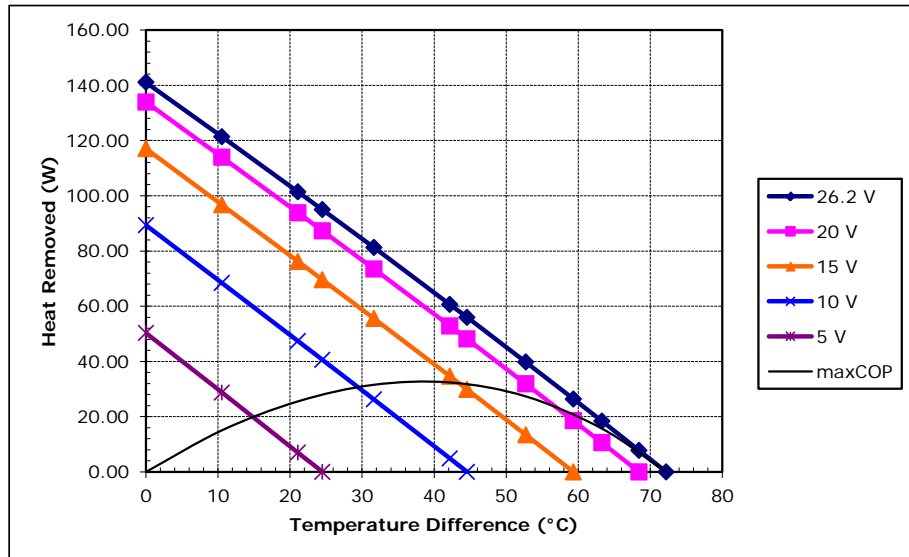
1590 Keane Drive, Traverse City, MI, 49696-8257 USA  
PH: 231-929-3966 FAX: 231-929-4163 email: cool@totech.com



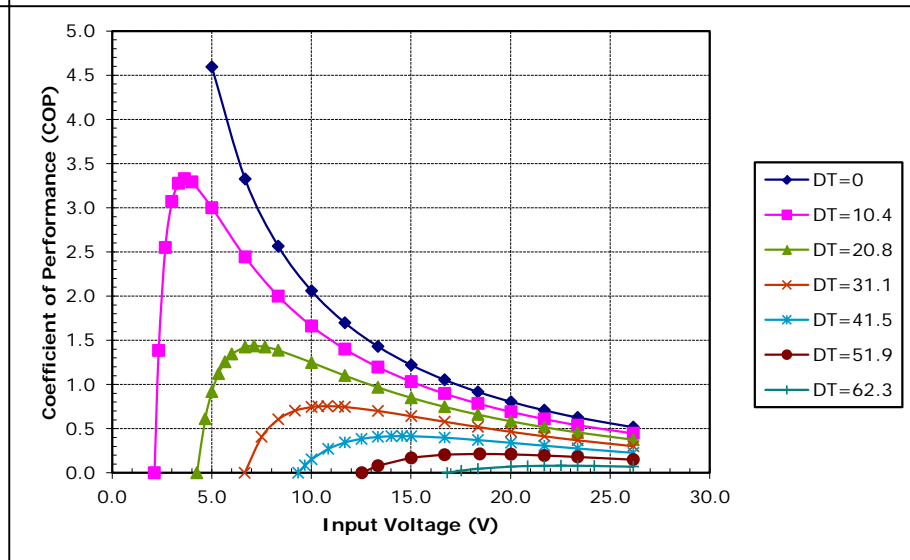
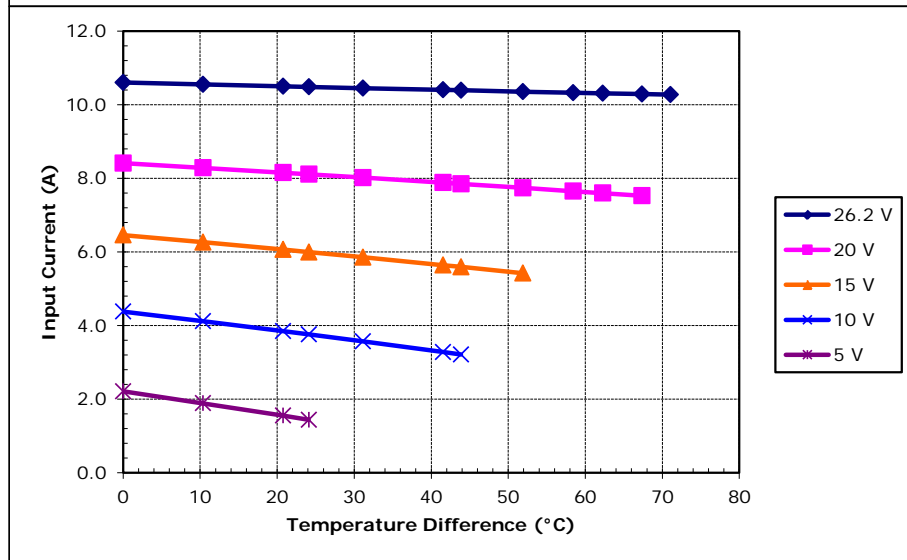
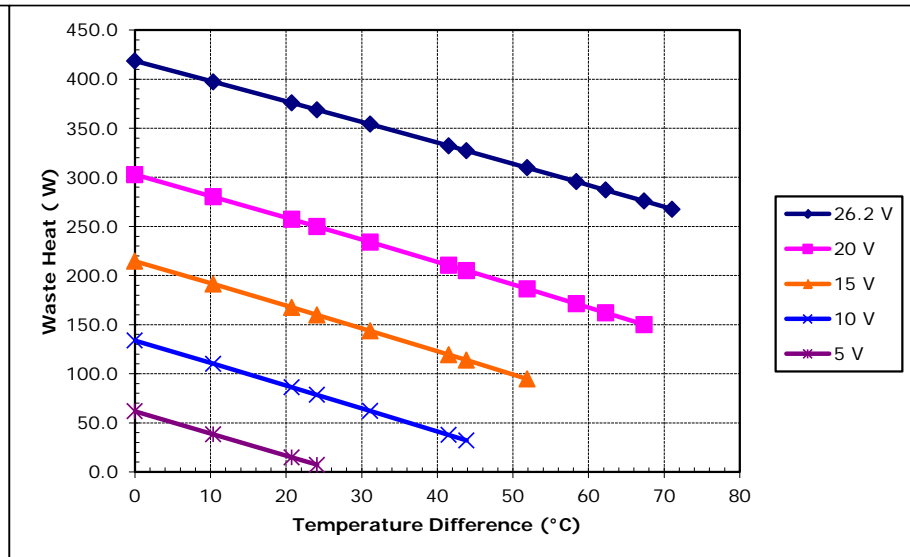
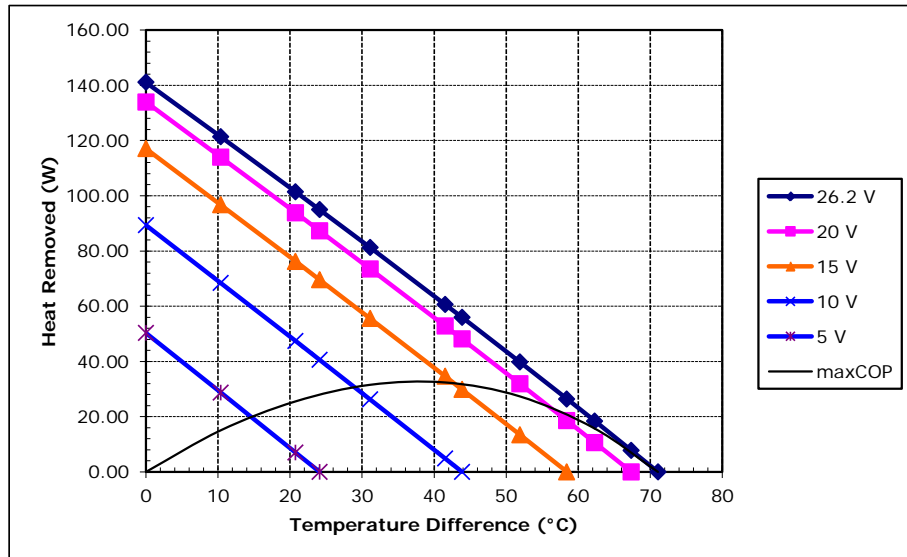
Unpotted VT-199-1.4-0.8 at a hot-side temperature of 30 °C



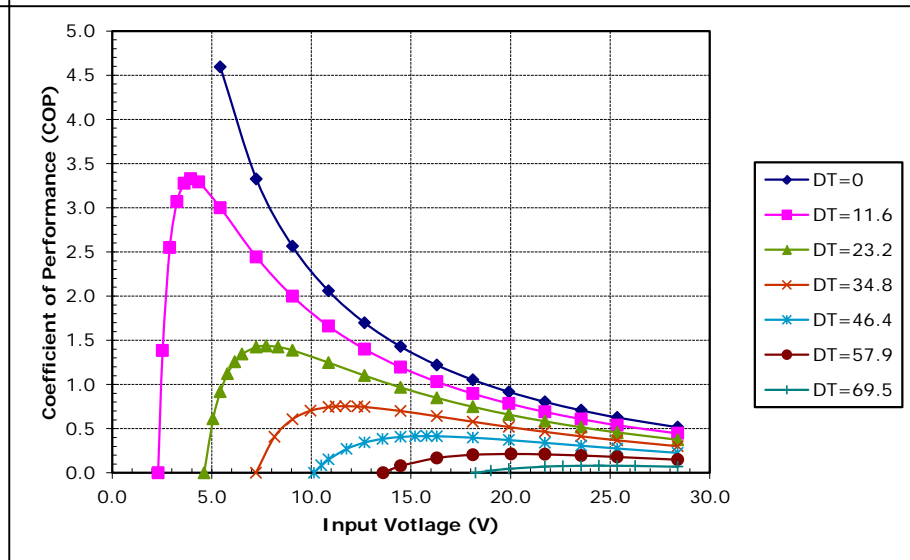
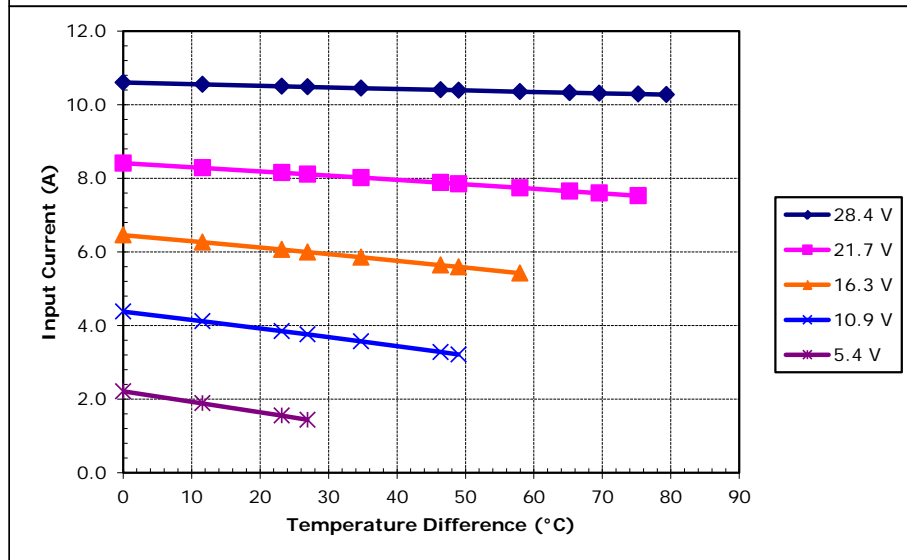
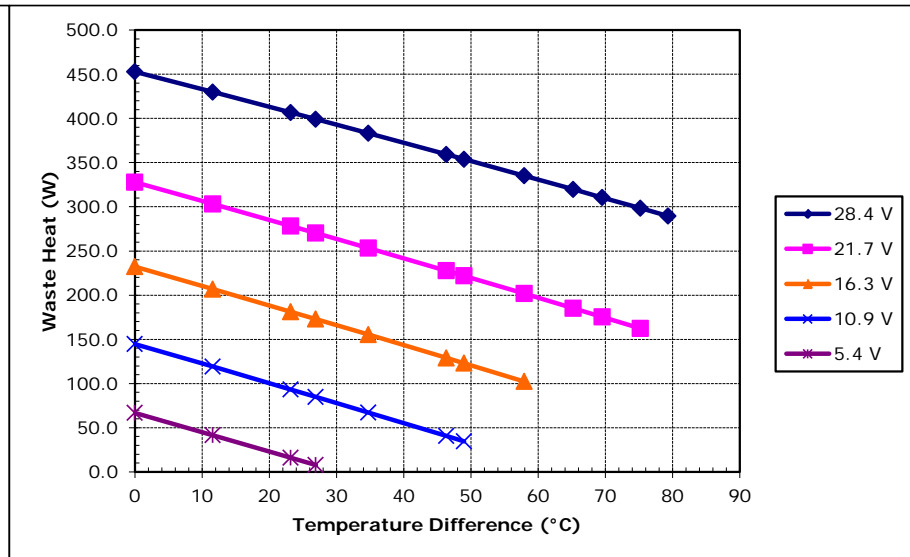
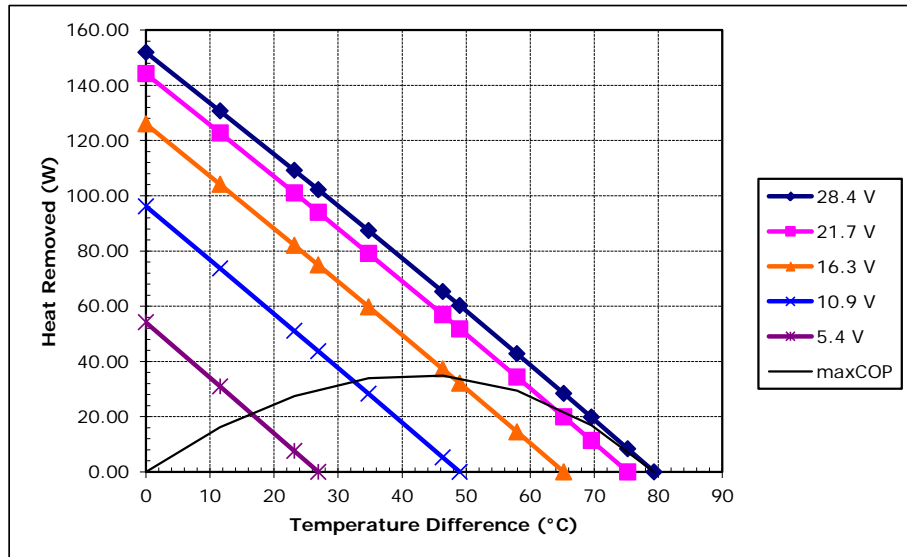
Potted VT-199-1.4-0.8 at a hot-side temperature of 30 °C



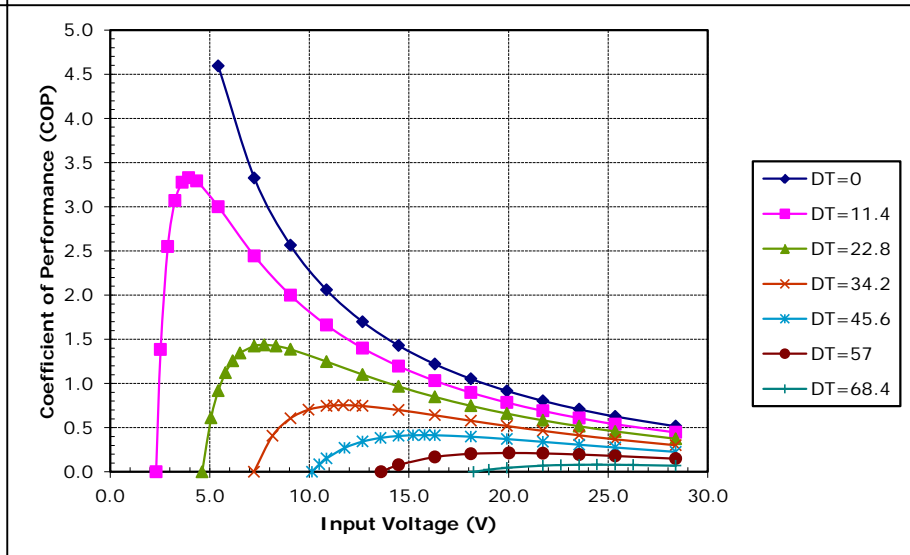
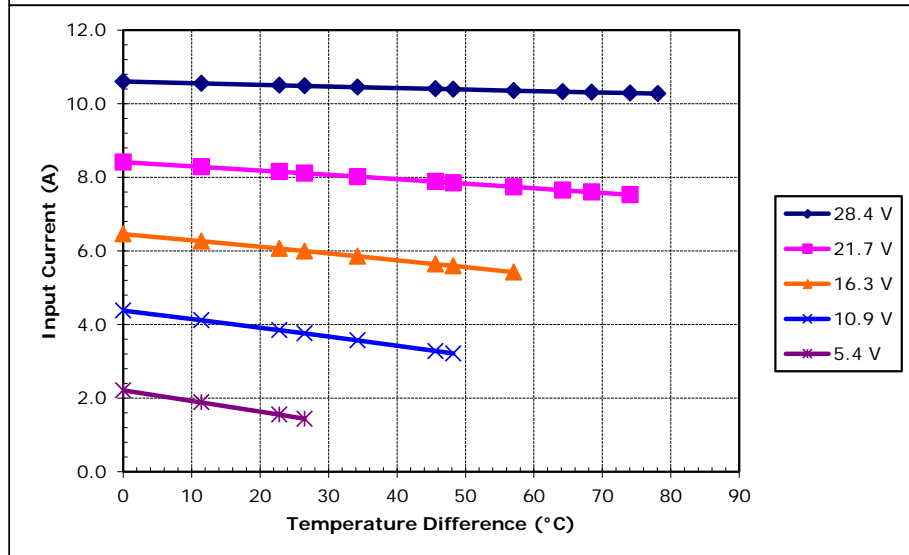
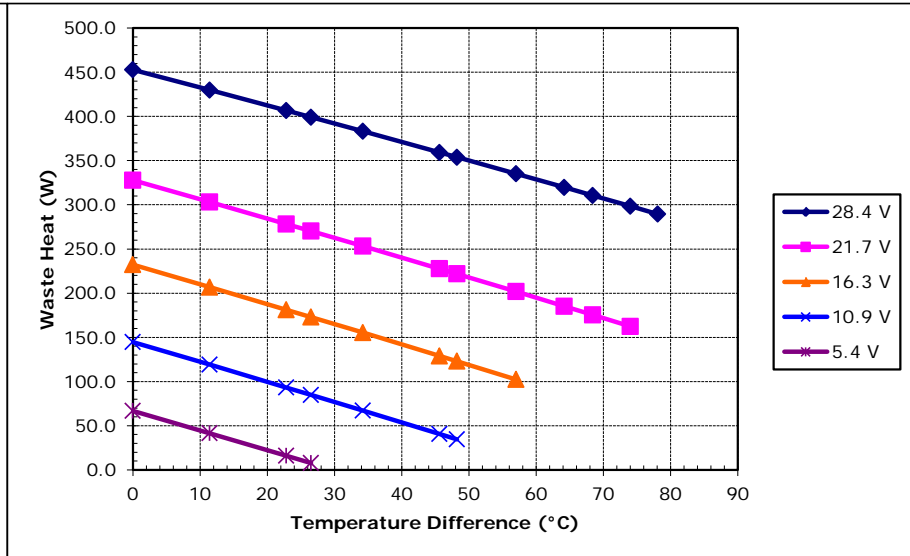
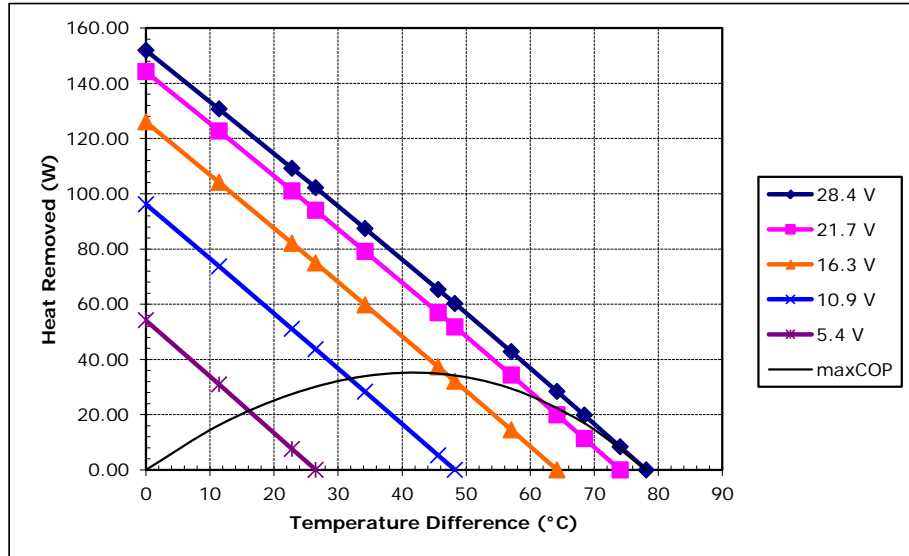
Unpotted VT-199-1.4-0.8 at a hot-side temperature of 50 °C



Potted VT-199-1.4-0.8 at a hot-side temperature of 50 °C



Unpotted VT-199-1.4-0.8 at a hot-side temperature of 70 °C



Potted VT-199-1.4-0.8 at a hot-side temperature of 70 °C



**Perfil 8586 (120x70)mm**

Weight (Kg/mt)	Width (mm)	Height (mm)	RTH (C/W)*	*Lenght (mm)

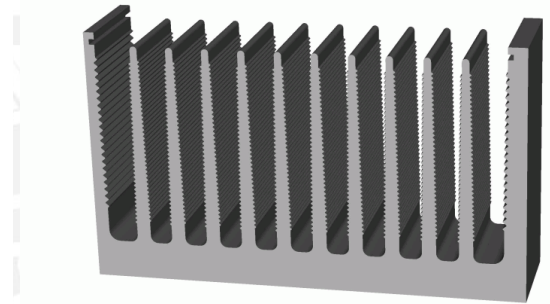
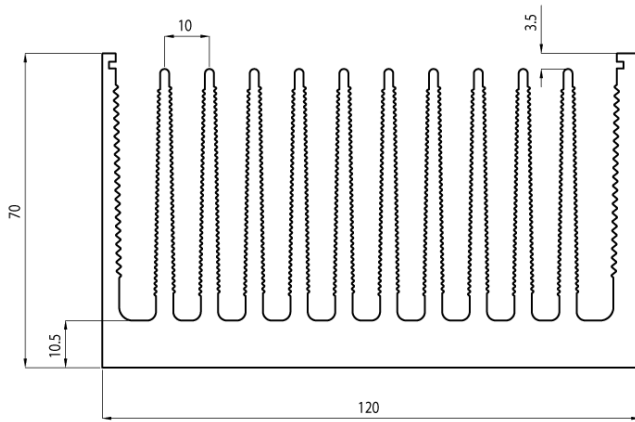
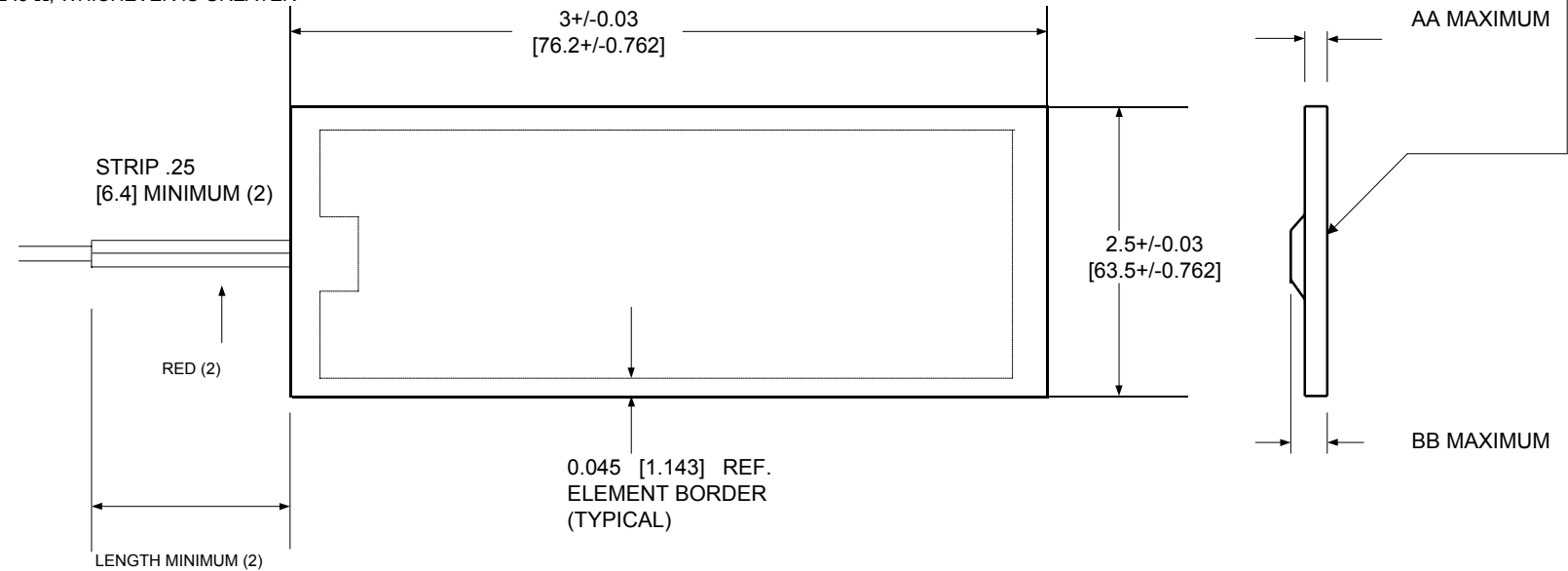
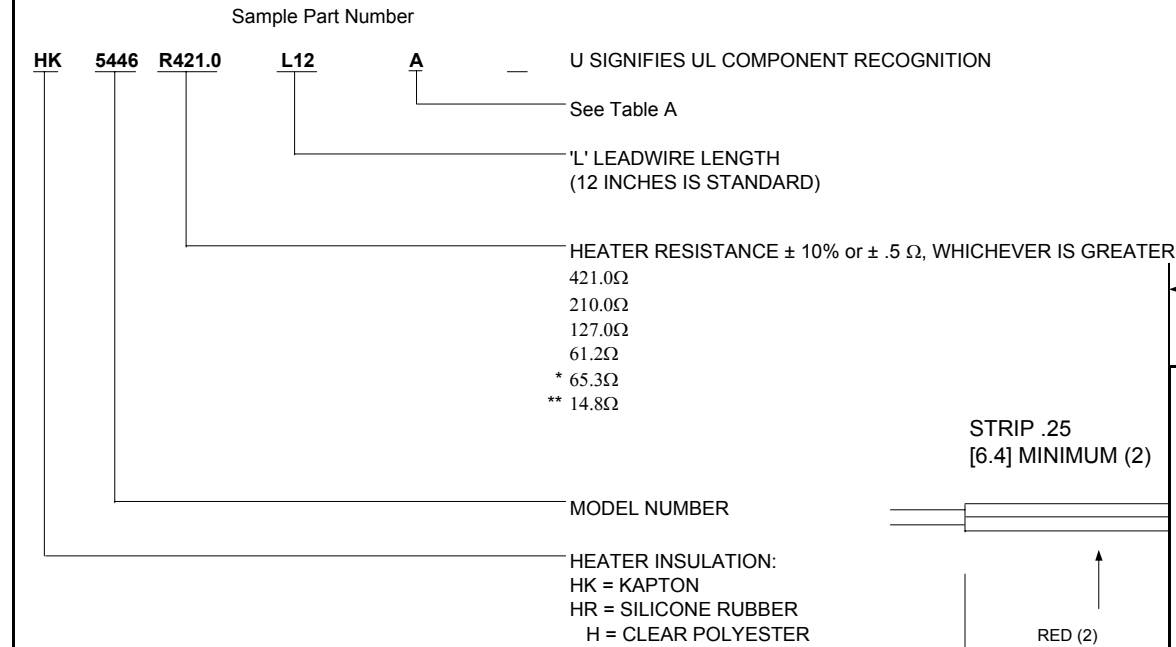




TABLE A							
Factory Applied Adhesive Film or Foil		***NOTE AA AND BB ARE MAXIMUM THICKNESSES***					
Code	Backing	Temperature Range		AA: Thickness over Element		BB: Thickness over Leads	
		Kapton	Rubber	Kapton	Rubber	Kapton	Rubber
A	No Adhesive	200°C -200°C	235°C -45°C	0.012 [0.3]	0.020 [0.5]	0.060 [1.5]	0.080 [2.0]
B	Acrylic PSA	100°C -32°C	-----	0.012 [0.3]	-----	0.060 [1.5]	-----
	#12 PSA	-----	177°C -45°C	-----	0.025 [0.6]	-----	0.095 [2.4]
C	#17 Film	150°C -200°C	-----	0.012 [0.3]	-----	0.060 [1.5]	-----
		150°C -200°C	235°C -45°C	0.017 [0.4]	0.030 [0.7]	0.065 [1.6]	0.100 [2.5]
E	.003 Aluminum with Acrylic PSA	150°C -32°C	150°C -32°C	0.017 [0.4]	0.030 [0.7]	0.065 [1.6]	0.100 [2.5]
		200°C -73°C	204°C -45°C	0.017 [0.4]	0.030 [0.7]	0.065 [1.6]	0.100 [2.5]

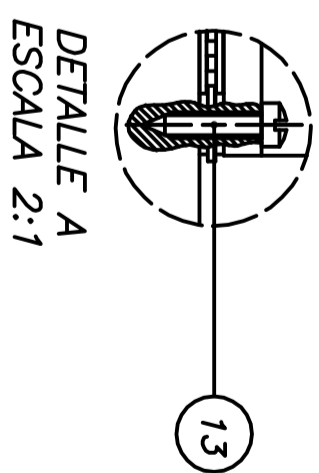
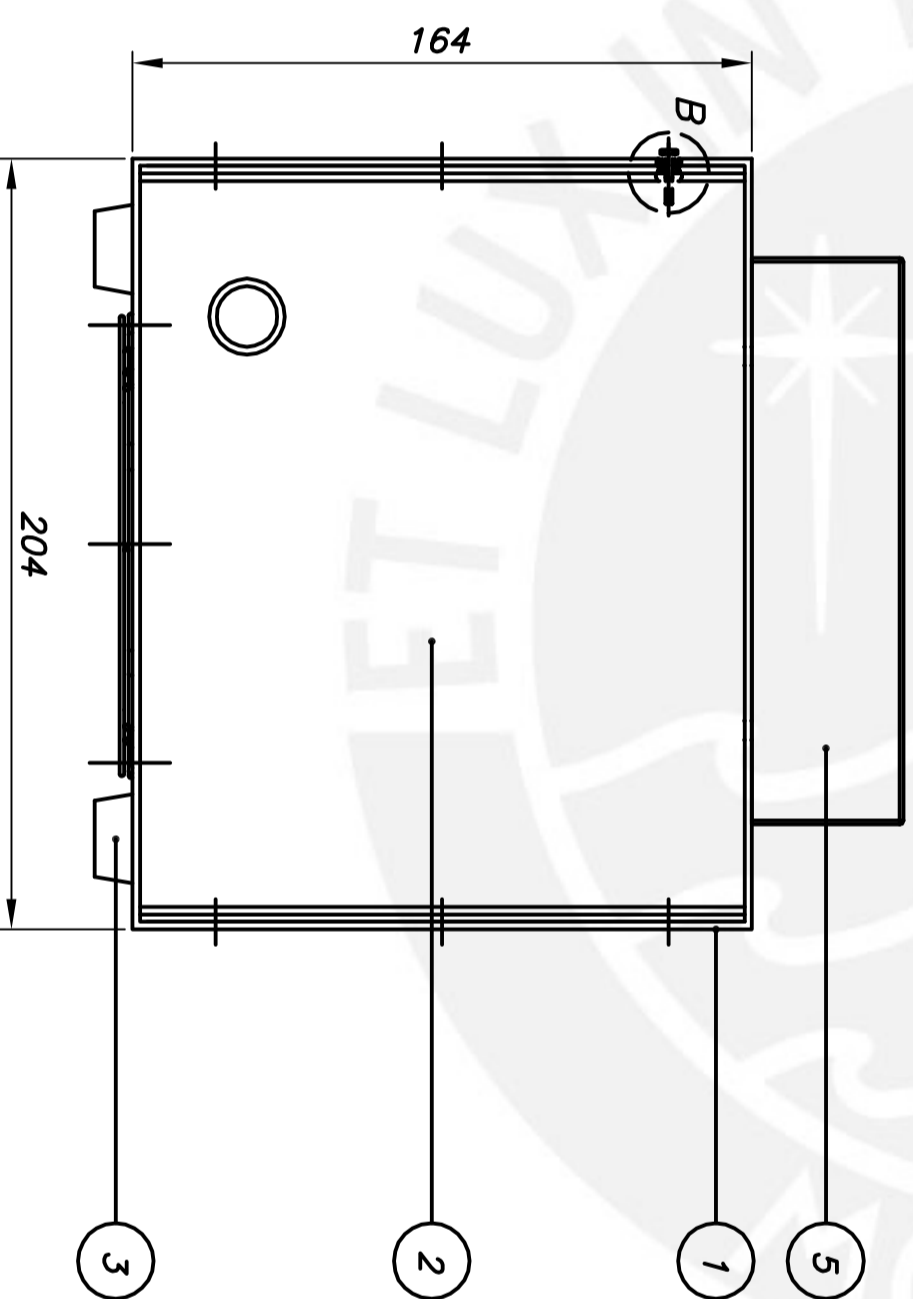
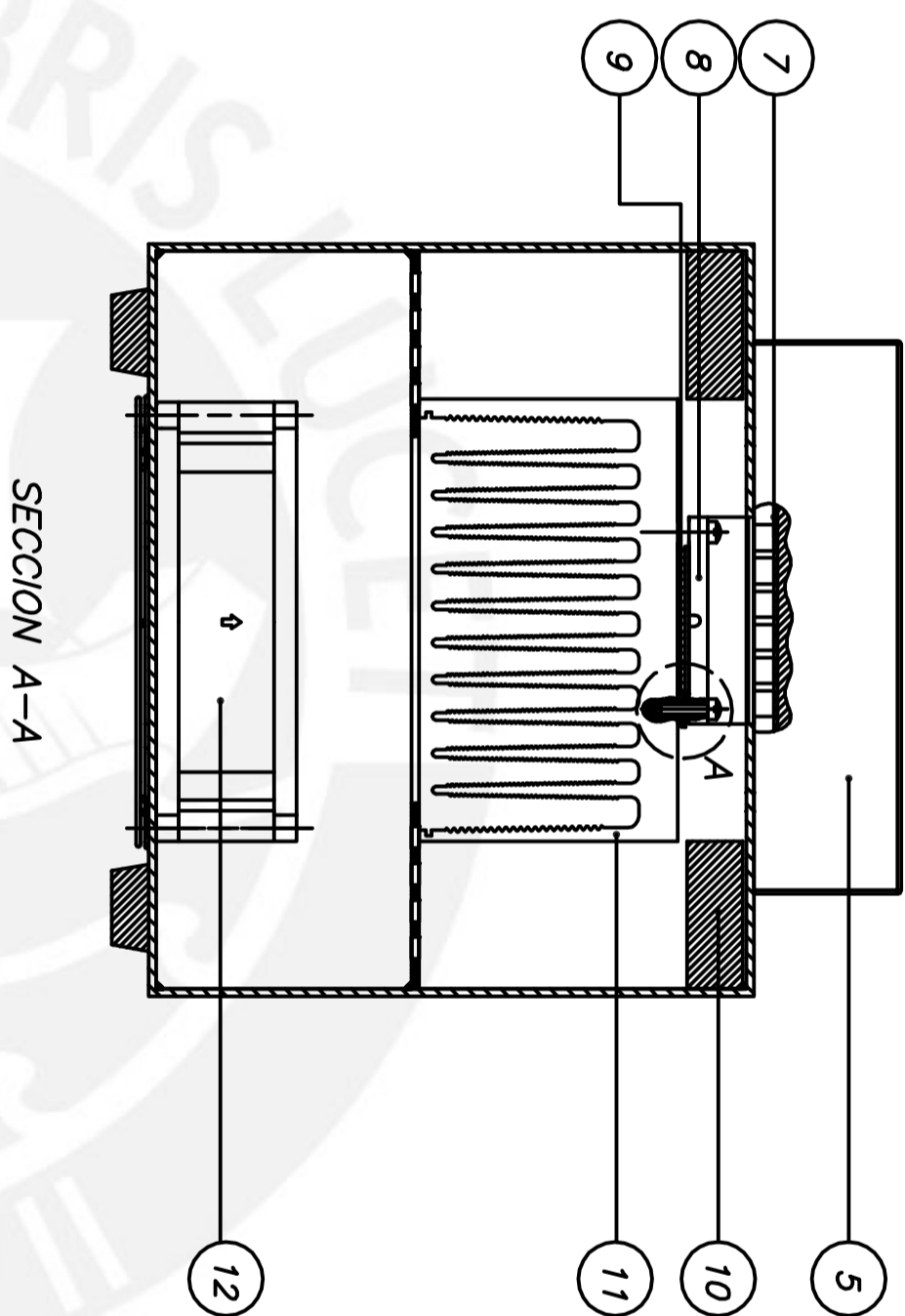
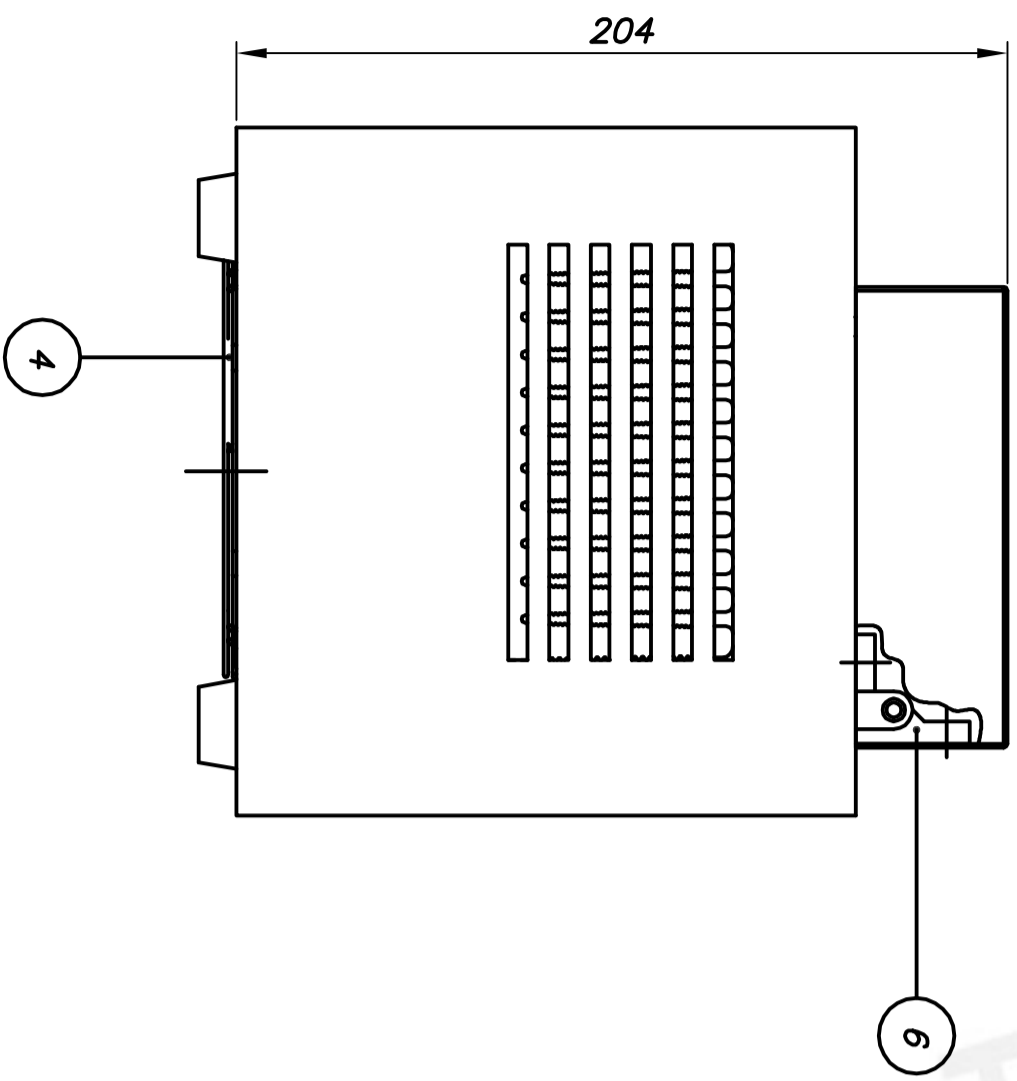
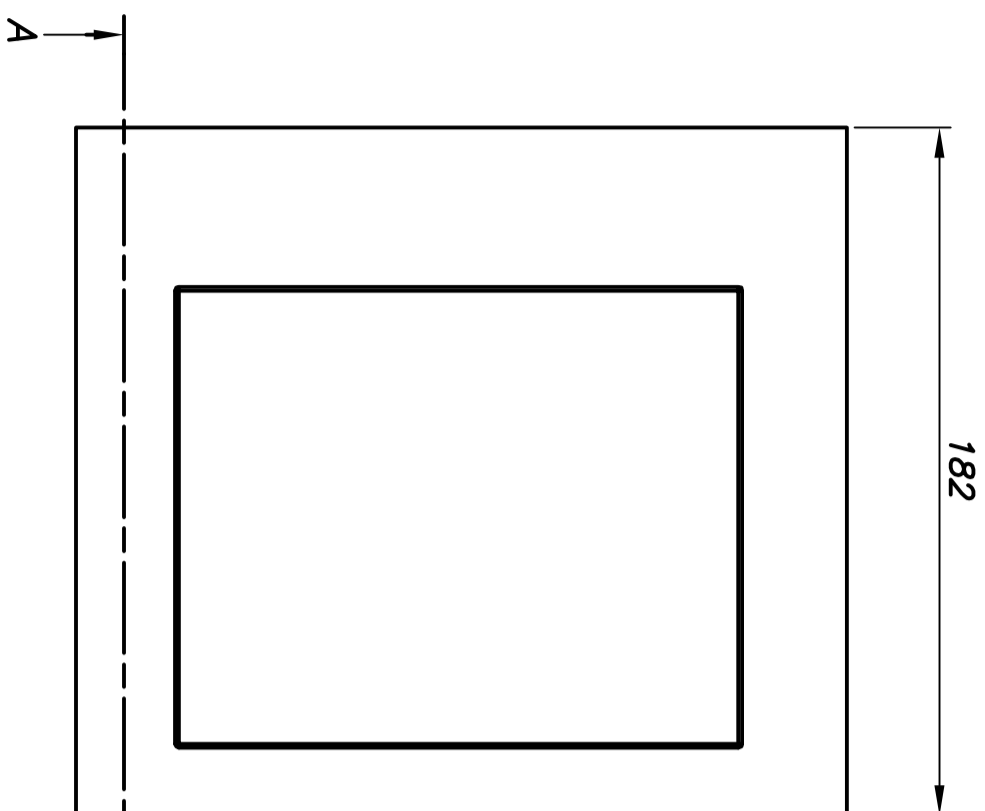
\*\*\*\*\*NOTE\*\*\*\*\* MODEL AVAILABLE IN KAPTON OR RUBBER



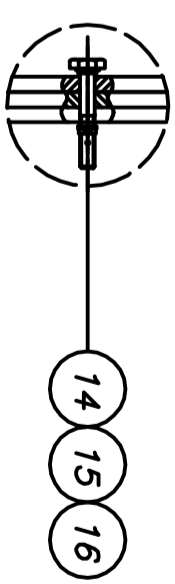
REVISIONS				
Rev.	Description	Date	ECO #	App.

- 5) RESISTANCE AT ROOM TEMPERATURE. \* TCR = .00519 AND RESISTANCE AT 0°C.  
\*\* TCR = .00536 AND RESISTANCE AT 0°C.
- 4) IF HEATER IS SUPPLIED WITH ADHESIVE BACKING, INSTALL HEATER PER THE ENGINEERING INSTRUCTION INCLUDED WITH SHIPMENT.
- 3) LEADWIRE: A.W.G. #26, STRANDED, TFE INSULATED.
- 2) DIELECTRIC STRENGTH: 1,000 VOLTS RMS.
- 1) ELEMENT: NON-INDUCTIVE PATTERN.

Unless otherwise specified, Dimensions shown are Inches Dimensions in [ ] are in Millimeters	INITIALS DR: DD CHK: TGG	DATE 8/10/2005	 <b>MINCO</b> A critical component of your success™
 THIRD ANGLE PROJECTION	APP: MRP ENG: JBH D.A: CDF PRO:		
MATERIAL:	NEXT	WT.	<b>THERMOFOIL™</b> <b>HEATER</b> <b>HK5446</b> SHEET 1 OF 1
FINISH:	ASSY	DWG size	
	NOT TO SCALE		



DETALLE A  
ESCALA 2:1



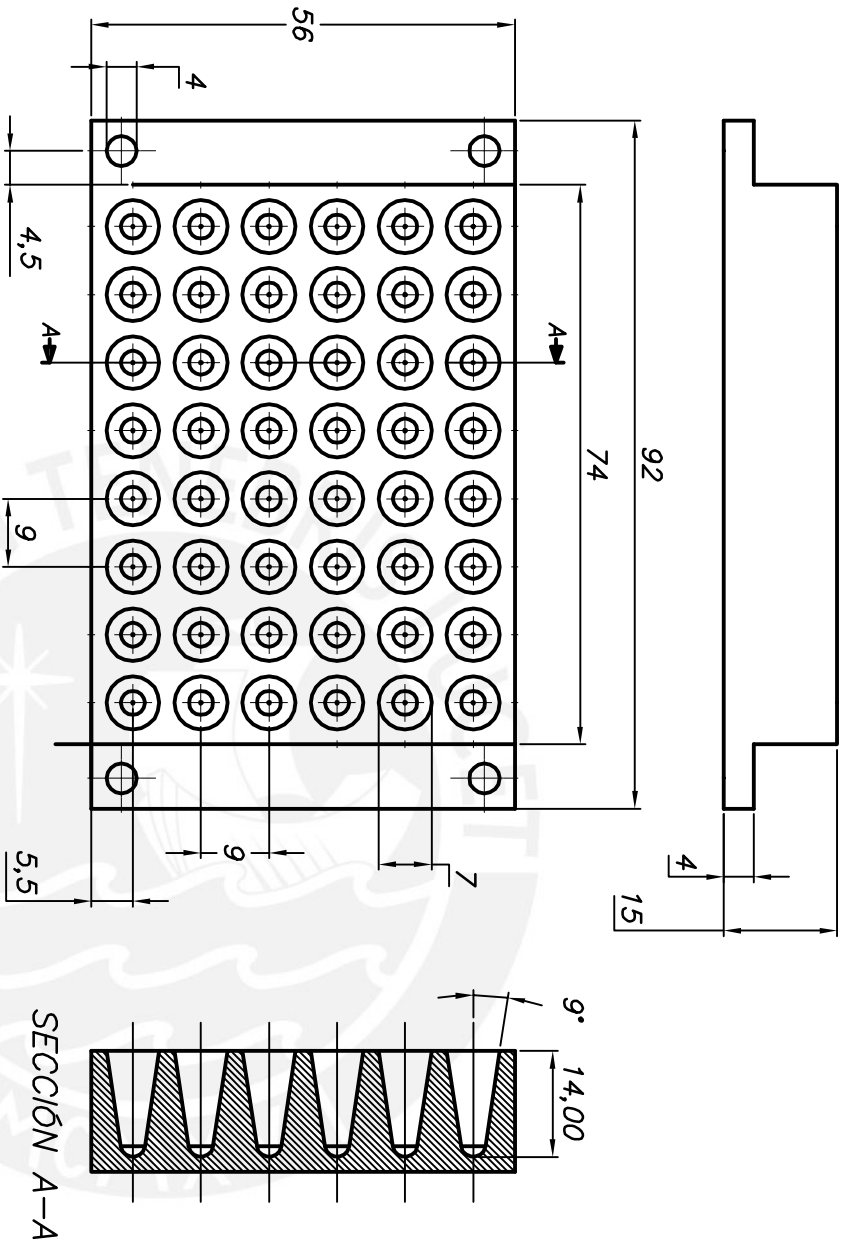
DETALLE B  
ESCALA 2:1

16	10	TUERCA M4	ISO 4032	ASTM A304	
15	10	ARANDELA M4	ISO 7091	ASTM A304	
14	10	TORNILLO M4 x 30	ISO 4018	ASTM A304	
13	4	TORNILLO M3x32	ISO 7045	ASTM A304	
12	1	VENTILADOR			120 x 120 mm
11	1	DISIPADOR DE CALOR		AW-8080	170 x 120 x 70 mm
10	1	ASLANTE CARCASA e=40 mm		POLESTIRENO	204 x 182 mm
9	2	CELULAS PELTER			40 x 40 mm
8	1	BANDEJA PORTAMUESTRAS		PLATA PURA	92 x 56 x 16 mm
7	1	PROBETAS 48 AGUJEROS		POLIPROPILENO	56 x 72 mm
6	2	BSAGRA		SI	#=9TC
5	1	TAPA e= 2mm		ASTM A304	150 x 120 x 40 mm
4	1	REJILLA PARA VENTILADOR		SI	120 x 120 mm
3	4	PIAS SOPORTE			
2	1	PLANCHA TRASERA e= 2mm		ASTM A304	200 x 2 x 160 mm
1	1	CARCASA e=2 mm		ASTM A304	204 x 182 x 154 mm
POS. CANT.		DESCRIPCION	NORMA	MATERIAL	OBSERVACIONES

PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU  
FACULTAD DE CIENCIAS E INGENIERIA – ESPECIALIDAD: ING. MECANICA

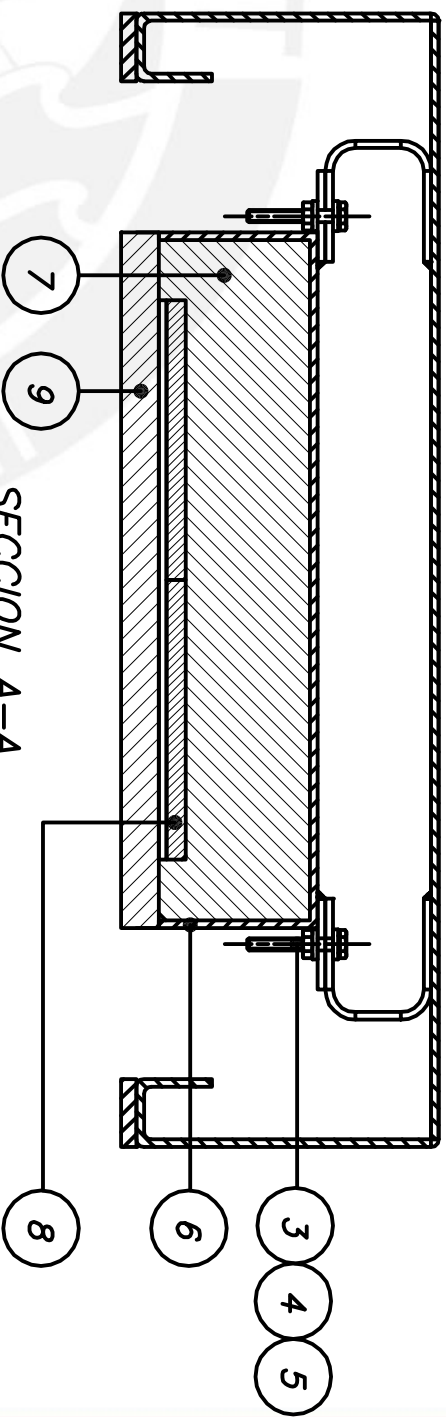
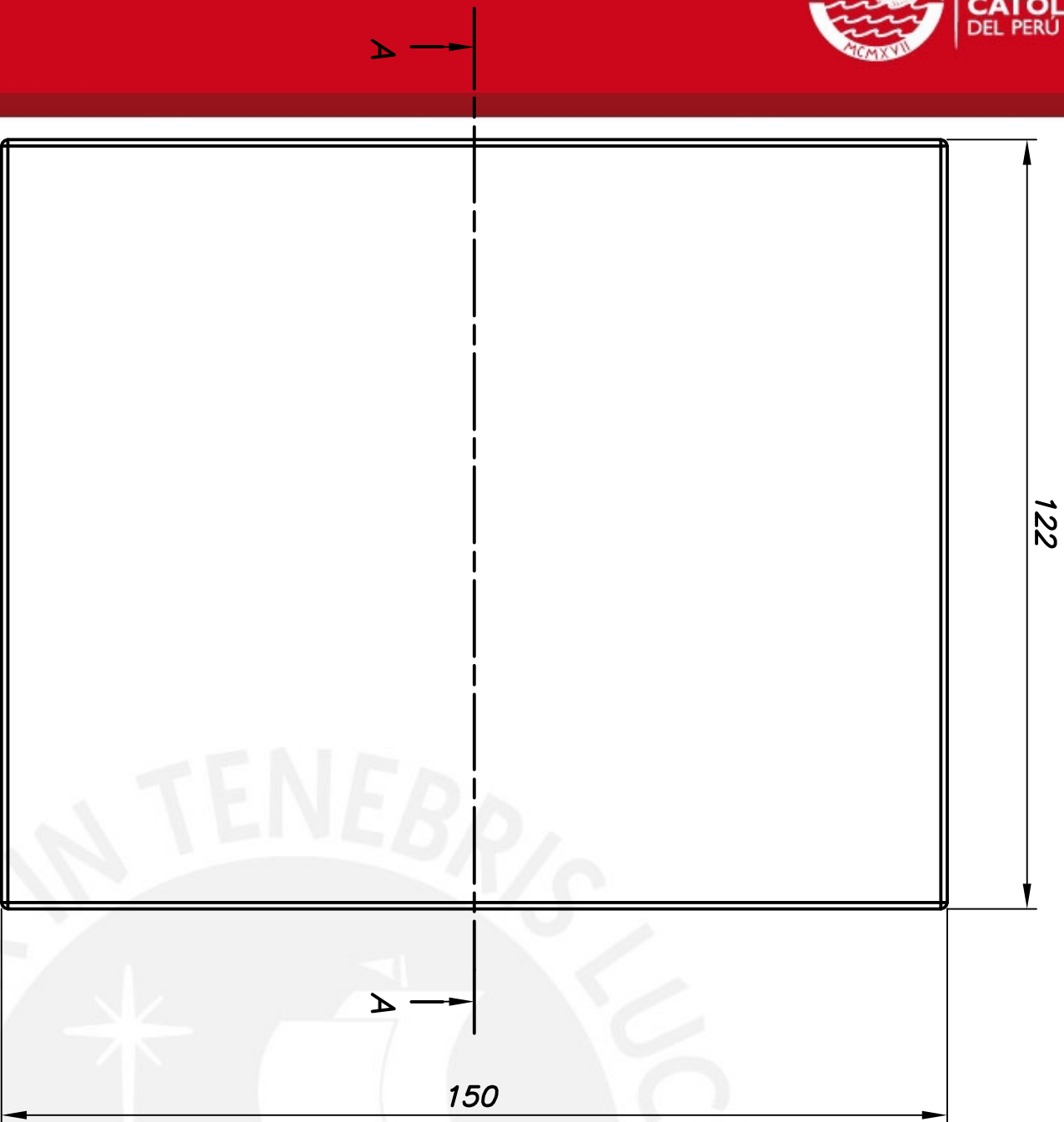
METODO DE PROYECCION  
MODULO TERMO-MECANICO  
ESCALA

20060381  
HUARCAYA VICTORIA, NATALYA  
FECHA: 2014, 10, 03  
LAMINA A2



COTA NOMINAL	COTA MAXIMA	COTA MINIMA

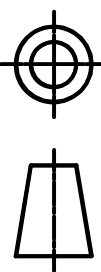
ACABADO SUPERFICIAL	TOLERANCIA GENERAL	MATERIAL
PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU FACULTAD DE CIENCIAS E INGENIERIA – ESPECIALIDAD: ING. MECANICA		
METODO DE PROTECCION	BANDEJA PORTAMUESTRAS	
20060381	HUARCAYA VICTORIA, NATALYA	
		FECHA: 2014.06.19
		LAMINA: A4
		ESCALA 1:1



9	1	SELLO $e=5$ mm		CAUCHO	74 x 56 mm
8	2	RESISTENCIAS DE POLIAMIDA			KAPTON HEATER
7	1	ASLANTE TAPA		POLISTIRENO	
6	1	CUERPO INTERIOR $e=2$ mm		ASTM A304	74 x 56 x 20 mm
5	4	TUERCA M2	ISO 4032	ASTM A304	
4	4	ARANDELA M2	ISO 7091	ASTM A304	
3	4	TORNILLOS M2x10	ISO 4014	ASTM A304	
2	2	BISAGRAS			$\phi=94^{\circ}$
1	1	CUERPO EXTERIOR $e=2$ mm		ASTM A304	150 x 122 x 40 mm
POS. CANT.		DESCRIPCION	NORMA	MATERIAL	OBSERVACIONES

PONTIFICIA UNIVERSIDAD CATOLICA DEL PERU  
FACULTAD DE CIENCIAS E INGENIERIA – ESPECIALIDAD: ING. MECANICA

METODO DE PROYECCION



ENSAMBLE TAPA

ESCALA

1:1

20060381

HUARCAYA VICTORIA, NATALYA

FECHA:  
2014.11.05  
LAMINA:  
A3