eGRAF® THERMAL SOLUTIONS

HS-400 & SS-500

BONDED FIN HEAT SINK & FIN-STOCK GUIDELINES

General Information and Design Guidelines

A. Slot Depth	1.5mm
B. Slot Width	Fin thickness + 0.127mm
C. Recommended Pitch: Natural Convection	2.0mm to 10.0mm
C. Recommended Pitch: Forced Convection	2.0mm to 5.0mm
D1. Shroud -or- D2. Outer fin	optional for protection, typically aluminum *(as shown in Figure 1)*
E. Base Thickness and Material	Thick enough to meet thermal requirements and to prevent mounting holes from entering fin slots
F. Recommended Epoxy	Lord Thermoset 340[1]

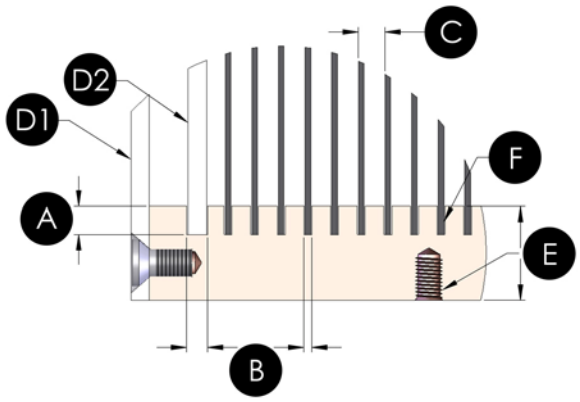

Figure 1

eGRAF® Fin-Stock Typical[2] Properties

Property	Units	Direction	HS-400 Fin-Stock Material	SS-500 Fin-Stock Material[3]
Description			Resin-impregnated graphite composite	Aluminum-clad graphite sheet
Standard Sheet Size			520.7mm x 635mm	304.8 x 609.6mm
Standard Thicknesses[4]			0.42, 0.79, 1.18, 1.57mm	0.93, 1.68
Density	g/cm^3		1.94	*1.80*
Thermal Conductivity	W/m-K	In-Plane	370	*500*
Thermal Conductivity	W/m-K	Thickness	6.5	*3.5*
Emissivity			0.8	*0.6*
Specific Heat Capacity	J/kgK		846	*711*
Volume Resistivity	$\mu\Omega$m	In-Plane	6	*7*
CTE (30 – 100°C)	10^{-6}m/m/°C	In-Plane	-2.4	*-0.4*
CTE (30 – 100°C)	10^{-6}m/m/°C	Thickness	54	*27*
Flexural Strength	MPa	In-Plane	70	TBD
Young's Modulus	GPa	In-Plane	42	TBD
Hardness	Rockwell R	In-Plane	96	TBD

[1] Use 0.1mm bond-line thickness (3-sides) and 1.5 W/m-K for thermal modeling purposes.
[2] Properties listed are typical and cannot be used as accept/reject specifications.
[3] Properties in italics are for graphite only (excluding aluminum cladding).
[4] Custom thicknesses may be available upon request.

For additional information, contact the GrafTech Sales Office: +1 (800) 253-8003 (Toll-Free in USA), +1 (216) 529-3777 (International), +1 (216) 529-3922 (Fax)

AM459-EG-HSK-GUIDELINES.doc Updated: 07/28/2009

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