

## EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



### 401 AND 403 SERIES Double-Surface Heat Sinks for TO-3 Case Styles

TO-3; Stud-Mount

Standard P/N	Width in. (mm)	Overall Dimensions in. (mm)	Height in. (mm)	Semiconductor Mounting Hole Pattern	Thermal Performance at Typical Load		Weight lbs. (grams)
					Natural Convection	Forced Convection	
401A ▲	4.750 (120.7)	1.500 (38.1)	1.250 (31.8)	(1) TO-3	80°C @ 30W	1.5°C/W @ 250 LFM	0.1500 (68.04)
401F ▲	4.750 (120.7)	1.500 (38.1)	1.250 (31.8)	0.270 in. (6.9)-Dia Hole	80°C @ 30W	1.5°C/W @ 250 LFM	0.1500 (68.04)
401K ▲	4.750 (120.7)	1.500 (38.1)	1.250 (31.8)	None	80°C @ 30W	1.5°C/W @ 250 LFM	0.1500 (68.04)
403A ▲	4.750 (120.7)	3.000 (76.2)	1.250 (31.8)	(1) TO-3	55°C @ 30W	0.9°C/W @ 250 LFM	0.3500 (158.76)
403F ▲	4.750 (120.7)	3.000 (76.2)	1.250 (31.8)	0.270 in. (6.9)-Dia Hole	55°C @ 30W	0.9°C/W @ 250 LFM	0.3500 (158.76)
403K ▲	4.750 (120.7)	3.000 (76.2)	1.250 (31.8)	None	55°C @ 30W	0.9°C/W @ 250 LFM	0.3500 (158.76)

With fins oriented vertically in cabinet sidewall applications, 401 and 403 Series heat sinks are recommended for critical space applications where maximum heat dissipation is required for high-power TO-3 case styles. Forced convection performance is also exemplary with these double surface fin types. Semiconductor mounting hole style "F" offers a single centered

0.270 in. (6.9)-diameter mounting hole (with a 0.750 in. (19.1)-diameter area free of anodize) for mounting stud-type diodes and rectifiers. Hole pattern "V" available upon request. Material: Aluminum Alloy, Black Anodized.

#### MECHANICAL DIMENSIONS

403 SERIES

Dimensions: in. (mm)

#### NATURAL AND FORCED CONVECTION CHARACTERISTICS

#### SEMICONDUCTOR MOUNTING HOLES

401 AND 403 SERIES (EXTRUSION PROFILE 1024)



### 413/421/423 SERIES Low-Height Double-Surface Heat Sinks for TO-3 Case Styles and Diodes

TO-3; DO-5; Stud-Mount

Standard P/N	Width in. (mm)	Nominal Dimensions		Semiconductor Mounting Hole Pattern	Thermal Performance at Typical Load		Weight lbs. (grams)
		Length in. (mm)	Height "A" in. (mm)		Natural Convection	Forced Convection	
413A	4.750 (120.7)	3.000 (76.2)	1.875 (47.6)	(1) TO-3	72°C @ 50W	0.85°C/W @ 250 LFM	0.6300 (285.77)
413F	4.750 (120.7)	3.000 (76.2)	1.875 (47.6)	0.270 in. (6.9)-Dia Hole	72°C @ 50W	0.85°C/W @ 250 LFM	0.6300 (285.77)
413K ▲	4.750 (120.7)	3.000 (76.2)	1.875 (47.6)	None	72°C @ 50W	0.85°C/W @ 250 LFM	0.6300 (285.77)
421A	4.750 (120.7)	3.000 (76.2)	2.625 (66.7)	(1) TO-3	58°C @ 50W	0.7°C/W @ 250 LFM	0.6300 (285.77)
421F	4.750 (120.7)	3.000 (76.2)	2.625 (66.7)	0.270 in. (6.9)-Dia Hole	58°C @ 50W	0.7°C/W @ 250 LFM	0.6300 (285.77)
421K ▲	4.750 (120.7)	3.000 (76.2)	2.625 (66.7)	None	58°C @ 50W	0.7°C/W @ 250 LFM	0.6300 (285.77)
423A	4.750 (120.7)	5.500 (140.2)	2.625 (66.7)	(1) TO-3	47°C @ 50W	0.5°C/W @ 250 LFM	1.1700 (530.71)
423K ▲	4.750 (120.7)	5.500 (140.2)	2.625 (66.7)	None	47°C @ 50W	0.5°C/W @ 250 LFM	1.1700 (530.71)

Space-saving double surface 413, 421, and 423 Series utilize finned surface area on both sides of the power semiconductor mounting surface to provide maximum heat dissipation in a compact profile. Ready to install on popular power components in natural and forced convection applications. Apply

Wakefield Type 126 silicone-free thermal compound or Wakefield DeltaPad™ interface materials for maximum performance. Material: Aluminum Alloy, Black Anodized.

#### MECHANICAL DIMENSIONS

413 SERIES (EXTRUSION PROFILE 2276)

421 SERIES (EXTRUSION PROFILE 1025)

423 SERIES (EXTRUSION PROFILE 1025)

Dimensions: in. (mm)

#### NATURAL AND FORCED CONVECTION CHARACTERISTICS

#### SEMICONDUCTOR MOUNTING HOLES

SERIES	"A"	"B"
413	1.875 (47.6)	0.200 (5.1)
421	2.625 (66.7)	0.190 (4.8)