Single Stage Modules

1.2A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150°C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6300/007/012	9500/007/012	1.2	0.6	0.9	70	1	4.01	4.01	2.33
6300/018/012	9500/018/012	1.2	1.6	2.5	70	2	6.05	6.05	2.59
6302/031/012	9502/031/012	1.2	2.8	4.3	70	1	7.98	7.98	2.08
6302/065/012	9502/065/012	1.2	5.8	8.9	70	1	12.10	11.20	2.59

1.8A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6300/007/018	9500/007/018	1.8	0.9	0.9	70	1	4.01	4.01	2.03
6300/018/018	9500/018/018	1.8	2.4	2.5	70	2	6.05	6.05	2.28
6302/023/018	9502/023/018	1.8	3.1	3.2	70	1	6.05	7.98	1.77
6302/029/018	9502/029/018	1.8	3.9	4.0	70	1	6.05	9.91	1.77
6302/031/018	9502/031/018	1.8	4.1	4.3	70	1	7.98	7.98	1.77
6302/065/018	9502/065/018	1.8	8.7	8.9	70	1	12.10	11.20	2.28

3.0A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6301/017/030	9501/017/030	3.0	3.8	2.3	72	1	11.50	11.50	3.18
6301/023/030	9501/023/030	3.0	5.2	3.2	72	1	7.39	22.40	3.18
6301/031/030	9501/031/030	3.0	7.0	4.3	72	1	15.10	15.10	3.18
6301/071/030	9501/071/030	3.0	16.0	9.8	72	1	22.40	22.40	3.18
6301/127/030	9501/127/030	3.0	29.0	17.5	72	1	29.70	29.70	3.94

4.0A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6300/017/040	9500/017/040	4.0	5.1	2.3	72	1	15.01	15.10	4.16
6301/017/040	9501/017/040	4.0	5.1	2.3	72	1	11.50	11.50	3.18
6301/023/040	9501/023/040	4.0	6.9	3.2	72	1	7.39	22.40	3.18
6300/031/040	9500/031/040	4.0	9.3	4.3	72	1	20.00	20.00	4.16
6301/031/040	9501/031/040	4.0	9.3	4.3	72	1	15.10	15.10	3.18
6300/035/040	9500/035/040	4.0	10.0	4.8	72	1	15.10	29.80	4.16
6300/071/040	9500/071/040	4.0	21.0	9.8	72	1	29.80	29.80	4.16
6301/071/040	9501/071/040	4.0	21.0	9.8	72	1	22.40	22.40	3.18
6300/127/040	9500/127/040	4.0	38.0	17.5	72	1	39.70	39.70	4.16
6301/127/040	9501/127/040	4.0	38.0	17.5	72	1	29.70	29.70	3.94

The following symbols are used in the tables:

Imax = Maximum input current in amperes

Qmax = Maximum heat pumping capacity in watts at DT = 0

Vmax = Maximum DC input voltage in volts at Imax and DT = 30°C

DTmax = Maximum temperature differential in °C at a zero heat load (Q = 0)

Single Stage Modules

6.0A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6300/017/060	9500/017/060	6.0	7.6	2.3	72	1	15.10	15.10	4.16
6300/031/060	9500/031/060	6.0	14.0	4.3	72	1	20.00	20.00	4.16
6300/035/060	9500/035/060	6.0	16.0	4.8	72	1	15.10	29.80	4.16
6300/071/060	9500/071/060	6.0	32.0	9.8	72	1	29.80	29.80	4.16
6300/127/060	9500/127/060	6.0	57.0	17.5	72	1	39.70	39.70	4.16
6301/127/060	9501/127/060	6.0	57.0	17.5	72	1	29.70	29.70	3.61
6300/128/060	9500/128/060	6.0	57.0	17.6	72	2	39.70	39.70	4.16

8.5A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6300/017/085	9500/017/085	8.5	11.0	2.3	72	1	15.10	15.10	3.94
6300/031/085	9500/031/085	8.5	20.0	4.3	72	1	20.00	20.00	3.94
6300/035/085	9500/035/085	8.5	22.0	4.8	72	1	15.10	29.80	3.94
6300/071/085	9500/071/085	8.5	45.0	9.8	72	1	29.80	29.80	3.94
6300/127/085	9500/127/085	8.5	80.0	17.5	72	1	39.70	39.70	3.94
6300/128/085	9500/128/085	8.5	80.0	17.6	72	2	39.70	39.70	3.94

9.0A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6300/031/090	9500/031/090	9.0	22.0	4.3	72	1	29.80	29.80	4.65

12.0A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6304/071/120	9504/071/120	12.0	63.0	9.8	72	1	40.10	40.10	4.65

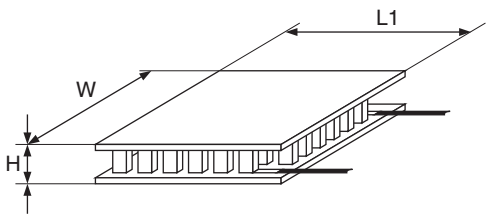
15.0A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6300/031/150	9500/031/150	15.0	35.0	4.3	72	1	29.80	29.80	4.60
6304/071/150	9504/071/150	15.0	79.0	9.8	72	1	40.10	40.10	4.65

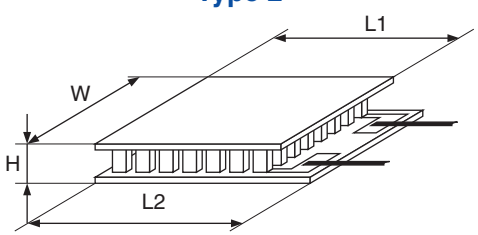
24.0A Models

TE MODULE NUMBER		Imax	Qmax	Vmax	DTmax	Type	DIMENSIONS (mm)		
150° C	200° C	(A)	(W)	(V)	(°C)s		W	L	H
6304/031/240	9504/031/240	24.0	55.0	4.3	72	1	39.70	39.70	4.62

Type 1



Type 2



Type 2 thermoelectric modules feature a "porch" for easy attachment of leads. This makes the L2 dimension slightly longer than the L1 dimension. Please call for exact L2 measurements for the modules that you are interested in.

Miniature Modules for Laser Diode and Optoelectronics Applications

TE MODULE NUMBER	Imax	Qmax	Vmax	Dtmax	Type	DIMENSIONS (mm)		
200° C	(A)	(W)	(V)	(°C)s		W	L	H
9503/018/012M	1.2	1.6	2.5	70	1	6.05	7.19	1.64
9503/018/018M	1.8	2.4	2.5	70	1	6.05	7.19	1.64
9503/023/018M	1.8	3.1	3.2	70	1	6.05	8.18	1.64
9503/029/018M	1.8	3.9	4.0	70	1	6.05	10.20	1.64
9503/031/018M	1.8	4.1	4.3	70	1	7.98	7.98	1.64
9503/035/018M	1.8	4.7	4.8	70	1	6.05	12.20	1.64
9503/018/020M	2.0	2.6	2.5	70	1	6.05	7.19	1.64
9503/035/025M	2.5	6.5	4.8	70	1	6.05	12.20	1.64

2 Stage Modules

TE MODULE NUMBER		Imax	Qmax	Vma	Dtmax	Type	DIMENSIONS (mm)				
150° C	200° C	(A)	(W)	(V)	(°C)		W1	L1	W2	L2	H
6320/157/035	9520/157/035	3.5	11.0	18.2	106	1	20.00	20.00	39.6	39.60	7.39
6320/185/065	9520/185/065	6.5	37.0	17.9	95	1	29.80	29.80	39.7	39.70	6.99
6320/157/070	9520/157/070	7.0	24.0	17.3	106	1	20.00	20.00	39.7	39.70	6.99
6320/094/360	9520/094/360	24.0	74.0	8.2	88	2	45.20	54.10	45.2	45.10	7.49

3 Stage Modules

TE MODULE NUMBER	Imax	Qmax	Vma	Dtmax	Type	DIMENSIONS (mm)						
200° C	(A)	(W)	(V)	(°C)		W1	L1	W2	L2	W3	L3	H
9530/119/045M	4.5	9.7	8.6	111.0	1	15.20	15.20	20.00	20.00	29.80	29.80	9.20
9530/228/045M	4.5	18.0	16.4	111.0	1	20.00	20.00	29.80	29.80	39.70	39.70	9.82

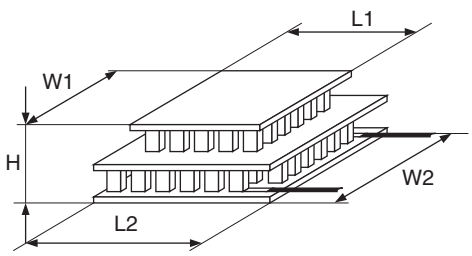
Modules with Center Holes

TE MODULE NUMBER	Imax	Qmax	Vmax	Dtmax	Type	DIMENSIONS (mm)			
200° C	(A)	(W)	(V)	(°C)s		W	L	H	Hole Dia.
9506/023/030B	3.0	5.2	3.2	72	1	15.10	15.10	3.18	6.7
9506/023/040B	4.0	6.9	3.2	72	1	15.10	15.10	3.18	5.0
9504/023/040B	4.0	6.9	3.2	72	1	18.0	18.0	3.18	8.0

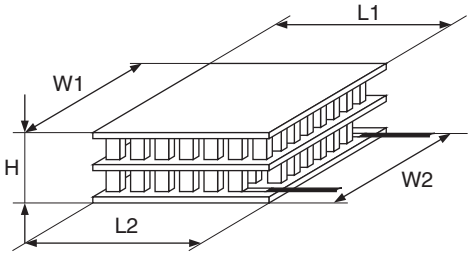
Products available from stock. For other products please call for delivery information.

Tabulated specifications are derived from the average performance of actual modules operating in ambient air at sea level. Temperature differential is the difference in temperature between two copper plates attached to the hot and cold module face plate using zinc-oxide-loaded silicone grease at the plate-to-module interfaces.

Multistage Type 1 — "CASCADE"



Multistage Type 2



TEC NUMBERING SYSTEM

6300 / 127 / 060AX

1. 2. 3. 4. 5. 6. 7.

1. Product Line

63 = 150°C Maximum operating temperature

95 = 200°C Maximum operating temperature

2. Shape

0 = Standard module

1 = Undesignated

2 = 2 stage module

3 = 3 stage module

3. Classification number

0 = Standard module

1 = Small size module

2 = Miniature module

3 = Modules configured for laser diode applications

4 = High current module

4. Number of couples

5. Maximum current

0.1 Ampere increments

6. Substrate specification

A. Standard type—plain ceramic surface

- Miniature module (+0.15mm height tolerance)
- Standard module (+0.25mm height tolerance)
- 2 stage module (+0.35mm height tolerance)

B. Lapped type – plain ceramic surface

- Miniature module (No specification)
- Standard module (+0.025mm height tolerance)
- 2 stage module (+0.25mm height tolerance)

H. Solderable metalized ceramic on hot side external surface

M. Solderable metalized ceramic on both hot and cold side external surface

7. Options

S = RTV seal

ADVANTAGES

- No moving parts
- Small and lightweight
- Maintenance free
- Solid state reliability
- Acoustically silent and electrically "quiet"
- Heating or cooling
- Wide operating temperature range
- Highly precise temperature control
- Low power requirements (DC powered)
- Localized (spot) cooling
- Processing temperatures to 200°C
- Operation in any orientation
- Operation in zero gravity and high G-levels
- Environmentally friendly

APPLICATIONS

- For avionics/electronic package cooling
- Compact heat exchangers
- Thermal cycling devices (DNA and blood analyzer)
- Precision device cooling (lasers and microprocessors)
- Long lasting cooling devices
- Small portable/stationary refrigeration
- Wafer thermal characterization
- Silicon wafer cooling
- Charge coupled device coolers (CCD)
- Charge induced device coolers (CID)
- Cold chambers
- Constant temperature baths
- Dewpoint hygrometers
- Electrophoresis cell coolers
- Gyros for navigation
- Immersion coolers
- Inertial guidance systems
- Infrared detectors
- Infrared seeking missiles
- Integrated circuit coolers
- Laboratory cold plates
- Laser diode coolers
- Microtome stage coolers
- NEMA enclosures
- Osmometer stir coolers
- Parametric amplifiers
- Thermal viewers
- Night vision equipment
- Thermal weapons sights
- Tissue preparation and storage
- Vidicon tube coolers
- Wet process temperature controller