

CENTUM™ Series

General Description

The CENTUM™ series is a breakthrough thermoelectric chip (TEC) architecture designed for delivering large temperature differential ($\Delta T > 95^\circ\text{C}$) without compromising on Coefficient of Performance (COP). Sheetak's patented technology makes CENTUM™ TECs a great fit for applications involving refrigerators, freezers, portable coolers, beverage coolers, product display coolers, freezers, temperature assurance products, optical transceivers, data center servers, and PCR thermal cyclers. CENTUM™ series modules are mechanically robust, reliable and compact. Other industry standard products and customized solutions are available within the CENTUM™ series that caters to a wide range of size, cooling and power requirements.



Key Features

- Solid-state design
- Ultrahigh temperature differentials; $\Delta T > 90^\circ\text{C}$
- Industry-best COP metrics
- Options for drop-in replacement for 12V DC applications
- Robust assembly & RoHS Compliant

Applications

- Refrigeration
- Freezers
- Optoelectronics
- Telecommunications
- Temperature assurance
- Thermo-cyclers for PCR/qPCR
- Heat pumps

Ordering Guide

Sample Part Number: SKCM-240-11-T100-SS-T0-F1-AIO

Chip Model Number	Solder Type	Sealant	Thickness Tolerance	Flatness Tolerance	Ceramic Type	Ceramic Surface
<i>SKCM-___-__</i>						
SKCM-240-11 240 couples, 11A max	T100 BiSn (up to 138C)	NS No Sealant	T0 ± 0.1 mm	F0 ± 0.05 mm	AIO Alumina (96% white)	- None
SKCM-168-08 168 couples, 8A max	T200 CuSn (up to 227C)	SS Silicone sealant	T1 ± 0.05 mm	F1 ± 0.025 mm	AIN Aluminum Nitride	M Metalized
SKCM-64-12 64 couples, 12A max		ES Epoxy Sealant	T2 ± 0.025 mm	F2 ± 0.0125 mm		
SKCM-144-03 144 couples, 3A max		CS Customer specified sealant				

Performance Metrics @ 27°C

Chip Model Number	Hot Side Temperature T_h (°C)	ΔT_{max} (°C)	Q_{max} (Watts)	I_{max} (Amps)	V_{max} (DC Volts)	R_{AC} (Ω)	TE Dimensions (mm)			
							A	B	C	D
SKCM-240-11	27	82	73	9.5	18.0	1.80	40	40	3.2	150
SKCM-168-08	27	82	39	7.3	12.5	1.64	27	28	3	150
SKCM-64-12	27	82	16	8.0	4.8	0.57	20	20	2.8	150
SKCM-144-03	27	82	24	3.0	23.1	4.29	19.4	21.3	3.4	150

Notes:

1. All performance values fall within $\pm 10\%$ tolerance of tested data and/or models.
2. Dimensions are typical and subject to change based on exact configuration ordered.
3. Contact Sheetak at info@sheetak.com for additional performance data, chip options or customization

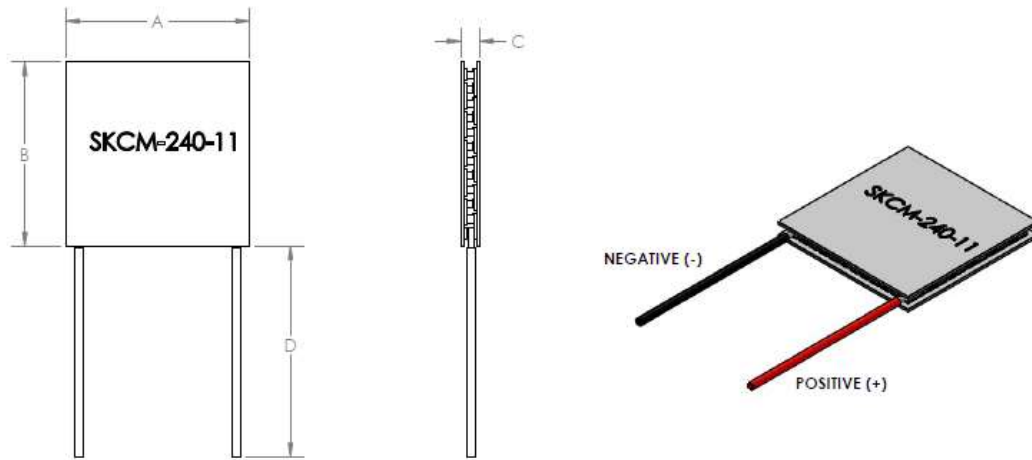
Performance Metrics @ 50°C

Chip Model Number	Hot Side Temperature T_h (°C)	ΔT_{max} (°C)	Q_{max} (Watts)	I_{max} (Amps)	V_{max} (DC Volts)	R_{AC} (Ω)	TE Dimensions (mm)			
							A	B	C	D
SKCM-240-11	50	95	90	10.3	21.7	2.00	40	40	3.2	150
SKCM-168-08	50	95	48	7.5	14.5	1.82	27	28	3	150
SKCM-64-12	50	95	20	8.3	5.4	0.63	20	20	2.8	150
SKCM-144-03	50	95	29	3.1	26.7	4.75	19.4	21.3	3.4	150

Notes:

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Chip Dimensions



Notes:

1. Please see the *Ordering Guide* for flatness and thickness tolerances.
2. Ceramic face with part number is the cold side and wires are soldered on the hot side.
3. Some TECs may have a porch design or wires soldered on the side.