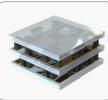


OptoTEC™ MSX Series

The MSX Series utilizes advanced automation and next-generation thermoelectric materials to boost cooling capacity by as much as 10% and assure high process repeatability.

The multistage TECs offer micro footprints on the cold side down to 2.0 x 4.0 mm's with height thicknesses down to 3.3 mm's.

Standard Product Portfolio

	MFG PART NUMBER	DESCRIPTION	QCMAX (WATTS)	IMAX (AMPS)	VMAX (VOLTS)	ΔTMAX (°C)	ACR (Ω)	L1 (MM)	W1 (MM)	H (MM)
 2 Stage MSX	387014127	MSX2-041-F1N-0707-06-00-W2	1.211	1.07	3.6	99	3.23	6.4	6.4	2.90
	387014128	MSX2-041-F1N-0707-08-00-W2	0.899	1.8	3.6	100	4.35	6.4	6.4	3.34
	387014438	MSX2-041-F1N-0707-09-00-W2	0.872	0.77	3.6	100	4.51	6.4	6.4	3.40
	387014129	MSX2-041-F1N-0707-10-00-W2	0.729	0.65	3.6	100	5.38	6.4	6.4	3.74
	387014132	MSX2-041-F1N-0707-12-00-W2	0.654	0.58	3.6	101	5.99	6.4	6.4	3.98
	387014130	MSX2-041-F1N-0707-13-00-W2	0.589	0.52	3.6	101	6.66	6.4	6.4	4.24
	387014131	MSX2-041-F1N-0707-15-00-W2	0.514	0.46	3.6	101	7.63	6.4	6.4	4.62
 3 Stage MSX	387014545	MSX3-070-F1N-0808-06-00-W2	1.253	1.678	5.615	118.99	3.25	8	8	3.752
	387014546	MSX3-070-F1N-0808-082-00-W2	0.924	1.240	5.630	120.34	4.44	8	8	4.412
	387014547	MSX3-070-F1N-0808-085-00-W2	0.892	1.197	5.630	120.47	4.60	8	8	4.502
	387009176	MSX3-070-F1N-0808-09-00-W2	0.843	1.133	5.635	120.66	5.87	8	8	4.652
	387014548	MSX3-070-F1N-0808-10-00-W2	0.746	1.003	5.641	121.06	5.52	8	8	5.012
	387014549	MSX3-070-F1N-0808-12-00-W2	0.668	0.899	5.642	121.37	6.16	8	8	5.372
	387014550	MSX3-070-F1N-0808-13-00-W2	0.600	0.809	5.646	121.64	6.86	8	8	5.762
	387014551	MSX3-070-F1N-0808-15-00-W2	0.523	0.705	5.647	121.96	7.88	8	8	6.332

Features include:

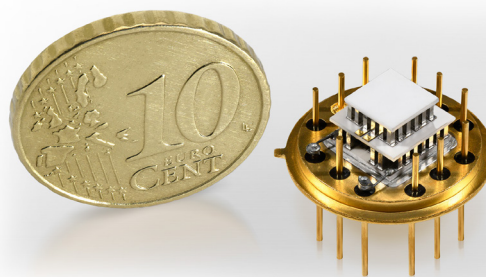
- High performance next generation thermoelectric materials
- Deep cooling with large temperature differential
- Energy efficient

Designed for:

- Infrared (IR) Detectors
- Charge-Coupled Devices (CCD)
- Complementary Metal Oxide Semiconductors (CMOS)
- X-Ray Detectors

Optical TEAs

MSX multistage micro thermoelectric coolers are available as a standalone or integrated into an optical package with a proprietary bonding technique to adhere TECs to optical packages with minimal solder voiding.



TTS 
TARK THERMAL
SOLUTIONS

**Active Cooling
Solutions for
Advanced
Optoelectronics**

OptoTEC™ MBX Series

NEW high-performance thermoelectric cooler to support next-generation optoelectronic applications.



Features include:

- Micro footprints down to 1.5 x 1.1 mm's
- Thin profiles down to 0.65 mm
- High performance next generation thermoelectric materials
- High heat flux densities
- Operation in high-temperature environments
- Telcordia GR-468-Core Iss 2 validation approved

**MBX Series TECs
required for coherent
1.6TB optical transceivers
and beyond**

**Designed to stabilize
temperature in
high-performance
applications**

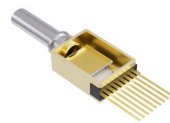
- Pluggable optical transceivers for telecom and datacom AI cluster computing
- Next-generation LiDAR systems for autonomous vehicles
- High-powered Indium Phosphide VCSELs

Standard Product Portfolio

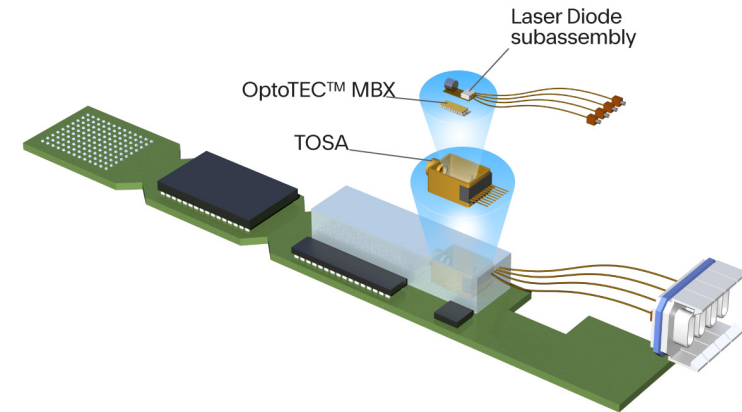
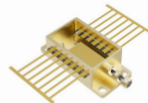
for TO-Can



for TOSA



for Butterfly



MFG PART NUMBER	DESCRIPTION	QCMAX (WATTS)	IMAX (AMPS)	VMAX (VOLTS)	ΔTMAX (°C)	DIM A (MM)	DIM B (MM)	DIM C (MM)	DIM D (MM)
387013090	MBX16-06-F2N-0101-GG-W0	0.7	1.6	0.77	81.8	1.5	1.1	1.5	0.8
387012171	MBX14-08-F2N-0101-GG-W0	0.8	1.3	1.03	81.8	1.9	1.5	1.5	0.8
387012172	MBX14-09-F1N-0101-GG-W0	0.9	1.3	1.16	81.8	1.8	1.5	1.5	0.7
387012173	MBX11-15-F2N-0202-GG-W0	1.2	1	1.94	81.8	2.4	1.8	2.1	0.8
387013091	MBX11-18-F2N-0202-GG-W0	1.4	1	2.32	81.8	2.7	2.0	2.0	0.9
387012175	MBX18-15-F2N-0202-GG-W0	2	1.8	1.94	81.8	2.6	1.9	2.3	0.9
387012176	MBX15-21-F2N-0302-GG-W0	2.2	1.4	2.71	81.8	3.4	2.8	2.4	0.9
387012181	MBX18-20-F2N-0203-GG-W0	2.7	1.8	2.58	81.8	3.5	3.0	2.6	0.9
387012182	MBX17-24-F2N-0402-GG-W0	2.9	1.6	3.1	81.8	4.2	3.5	2.6	1
387010765	MBX12-38-F2N-0502-GG-W0	3.2	1.1	4.9	81.8	5.1	4.4	2.8	1.1
387012183	MBX19-28-F2N-0303-GG-W0	3.8	1.8	3.61	81.8	3.7	3.1	3.6	0.9
387012184	MBX19-32-F2N-0403-GG-W0	4.3	1.8	4.13	81.8	4.4	3.7	3.7	1
387012185	MBX20-36-F2N-0403-GG-W0	5.2	1.9	4.65	81.8	4.8	4.0	3.6	0.9
387012186	MBX20-40-F2N-0503-GG-W0	5.7	1.9	5.16	81.8	5.5	4.8	3.9	1
387012187	MBX21-45-F2N-0505-GG-W0	6.8	2	5.81	81.8	5.1	5	5	1
387013092	MBX18-67-F2A-0904-GG-W0	9.6	1.9	8.65	81.8	9.2	8.5	4	1.3
387012190	MBX18-72-F2A-0606-GG-W0	9.9	1.8	9.29	81.8	6.8	6.1	6.1	1.4
387010764	MBX20-42-F2A-1206-GG-W0	6.3	2	5.42	81.8	12	10.1	6	2.1
387012191	MBX25-59-F2A-0605-GG-W0	8.9	2	7.62	81.8	6.2	5.7	5.2	1.2
387012192	MBX27-64-F2A-0904-GG-W0	14.2	2.9	8.26	81.8	9.1	8.4	4.3	1.2
387012193	MBX28-71-F1A-0606-GG-W0	16.5	3	9.16	81.8	6.5	6.5	6.5	1.2