

Quad Hybrid Couplers

CAES hybrid couplers feature high directivity and low VSWR and are conservatively rated to ensure the most reliable service and performance. The volume of these couplers makes them ideally suited for applications involving high density packaging.



180° Quad Hybrid Couplers

PART NUMBER	FREQUENCY RANGE		INSERTION LOSS dB, max	AMPLITUDE BALANCE dB, max	PHASE BALANCE deg, max	ISOLATION dB, min	VSWR
	GHz, min	GHz, max					
MH-24	0.25	0.5	0.5	± 0.5	± 5	18	1.30:1
MH-33	1.0	2.0	0.6	± 0.5	± 4	18	1.30:1
MH-39	2.0	4.0	0.6	± 0.55	± 5	18	1.35:1
MH-58	8.0	16.0	1.45	± 0.6	± 10	15	1.50:1

Nominal Impedance: 50 Ω

Nominal Coupling: 3 dB

PART NUMBER		A	B	C	D	E	F	G	H	J	K
MH-24	CSM-1	4.50	3.00	0.50	0.24	2.25	0.16	2.68	0.50	0.50	0.156
MH-33	CSM-2	2.00	1.70	0.38	0.19	0.10	0.20	1.30	0.38	0.25	0.093
MH-39	CSM-2	1.55	1.70	0.38	0.19	0.10	0.20	1.30	0.25	0.38	0.093
MH-58	CSM-1	1.25	1.00	0.38	0.19	0.62	0.13	0.75	0.38	0.38	0.140

90° Quad Hybrid Couplers

PART NUMBER	FREQUENCY RANGE		INSERTION LOSS dB, max	AMPLITUDE BALANCE dB, max	PHASE BALANCE deg, max	ISOLATION dB, min	VSWR
	GHz, min	GHz, max					
QH-36	2.0	4.0	0.2	± 0.45	± 2.5	22	1.20:1
QH-45	4.0	8.0	0.25	± 0.5	± 3	20	1.30:1
QH-51	7.0	12.4	0.35	± 0.5	± 4	17	1.35:1
QH-57	8.0	16.0	0.5	± 0.6	± 5	16	1.45:1
QH-58	12.0	18.0	0.5	± 0.6	± 5	16	1.50:1

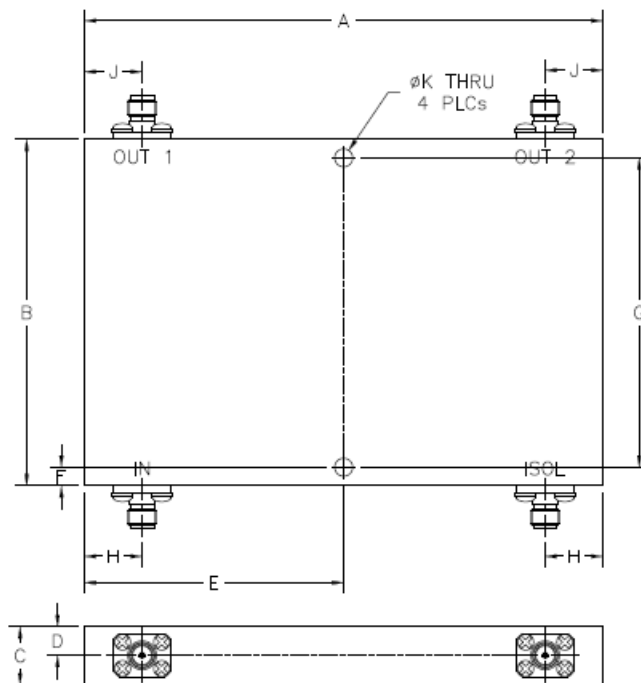
Nominal Impedance: 50 Ω

Nominal Coupling: 3 dB

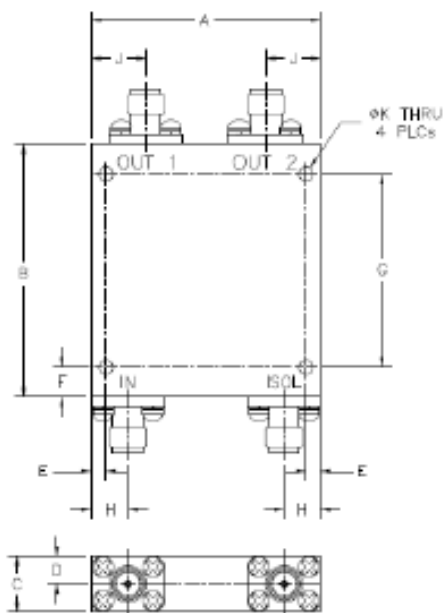
PART NUMBER		A	B	C	D	E	F	G	H	J	K
QH-36	CSQ-1	1.00	0.50	0.38	0.19	0.50	0.10	0.30	0.20	0.20	0.093
QH-45	CSQ-1	0.90	0.50	0.38	0.19	0.45	0.10	0.30	0.20	0.20	0.093
QH-51	CSQ-1	0.95	0.50	0.38	0.19	0.48	0.10	0.30	0.20	0.20	0.093
QH-57	CSQ-1	0.95	0.50	0.38	0.19	0.48	0.10	0.30	0.20	0.20	0.093
QH-58	CSQ-1	0.95	0.50	0.38	0.19	0.48	0.10	0.30	0.20	0.20	0.093

Quad Hybrid Couplers

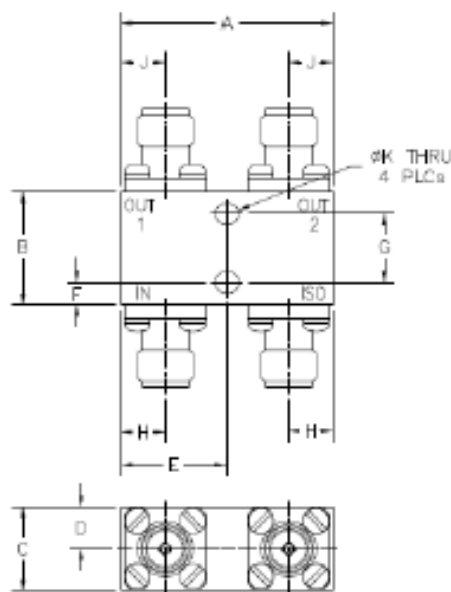
CSM-1



CSM-2



CSQ-1



Datasheet Definitions

	DEFINITION
Advanced Datasheet	CAES reserves the right to make changes to any products and services described herein at any time without notice. The product is still in the development stage and the datasheet is subject to change . Specifications can be TBD and the part package and pinout are not final .
Preliminary Datasheet	CAES reserves the right to make changes to any products and services described herein at any time without notice. The product is in the characterization stage and prototypes are available.
Datasheet	Product is in production and any changes to the product and services described herein will follow a formal customer notification process for form, fit or function changes.

“Not Subject to Regulations (NSR)”

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