FERROVAC
ULTRA HIGH VACUUM TECHNOLOGY

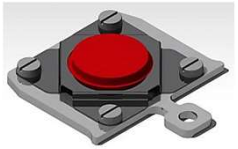
サンプルホルダー

【製品コード】

1) **SHOMTCH**：**K005型**円形/ハット型単結晶サンプルホルダー
2) **SHOMTCH**：**K005/K001型**円形ハット型単結晶サンプルホルダー
3) **SHOMTCHR**：**K102型**長方形単結晶サンプルホルダー
4) **SHUPSCH**：1″ウエハ固定サンプルホルダー
5) **SHOMEC13(MO-DT)**：13x電気接点/温度センサー付モリブデンサンプルホルダー
6) **SHOMEC13(MO)**：13x電気接点付モリブデンサンプルホルダー

【サンプルホルダー】

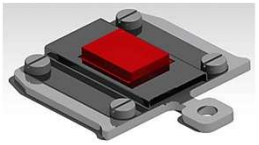
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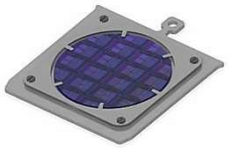
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3)



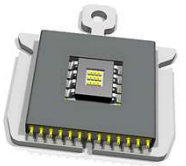
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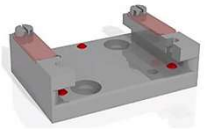
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6)

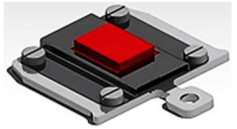
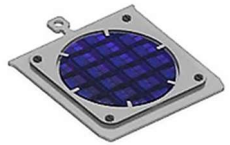
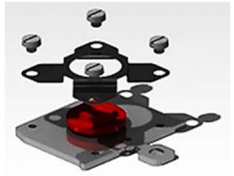
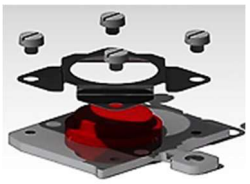
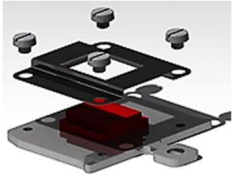
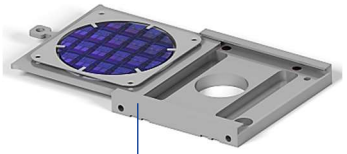


互換性【サンプルプレートレシーバー】

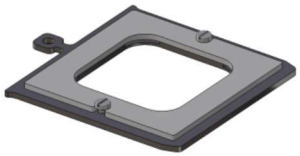
RECOM	RECOM13S	RHOMLT	RECOMLTRA	RECOMEC13	RECOMCREC13V2	RECOMDC	RECOMDCRA	RECOMHTR1001S
								

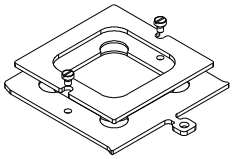
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サンプルホルダー

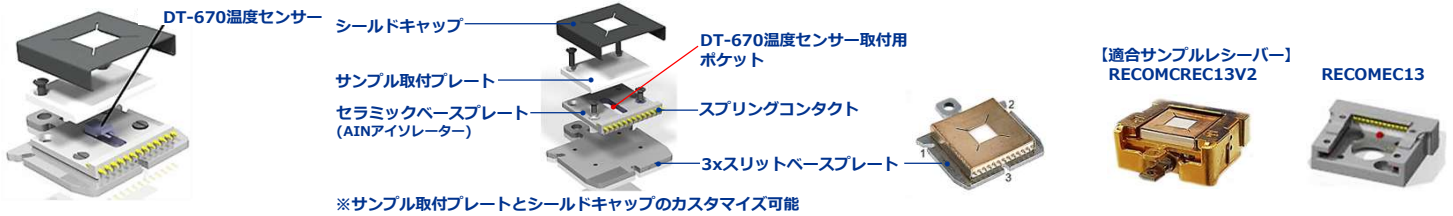
名称		円形/ハット型単結晶サンプルホルダー	円形/ハット型単結晶サンプルホルダー	長方形単結晶サンプルホルダー	1”ウエハ固定サンプルホルダー
外観図					
製品コード		SHOMTCH(MO)-0008-0001-0007	SHOMTCH(MO)-0010-0001-0009	SHOMTCHR(MO)-0007-0007-0001	SHUPSCH
仕様	単結晶形状	タイプK005	タイプK005/K001	タイプK102	ー
	サンプルサイズ	X=φ4～φ12mm, Y=1～5mm	X=φ10mm, Y=1mm, Z=φ9mm	X=7mm, Y=7mm, Z=1mm	ー
	本体材料	モリブデン (MO)			ステンレス (SUS304)
	キャップ材料	モリブデン (MO)			ステンレス (SUS304)
	取付ネジ	4x(M1.4x1)			
	取付ネジ材料	タンタル (Ta)			モリブデン (MO)
	組立図				 RECUPSサンプルレシーバー

【特注ウエハサンプルホルダー例】対応レシーバー：RECUPS

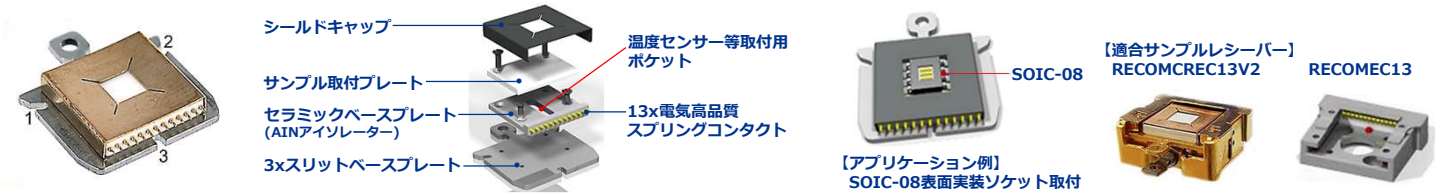


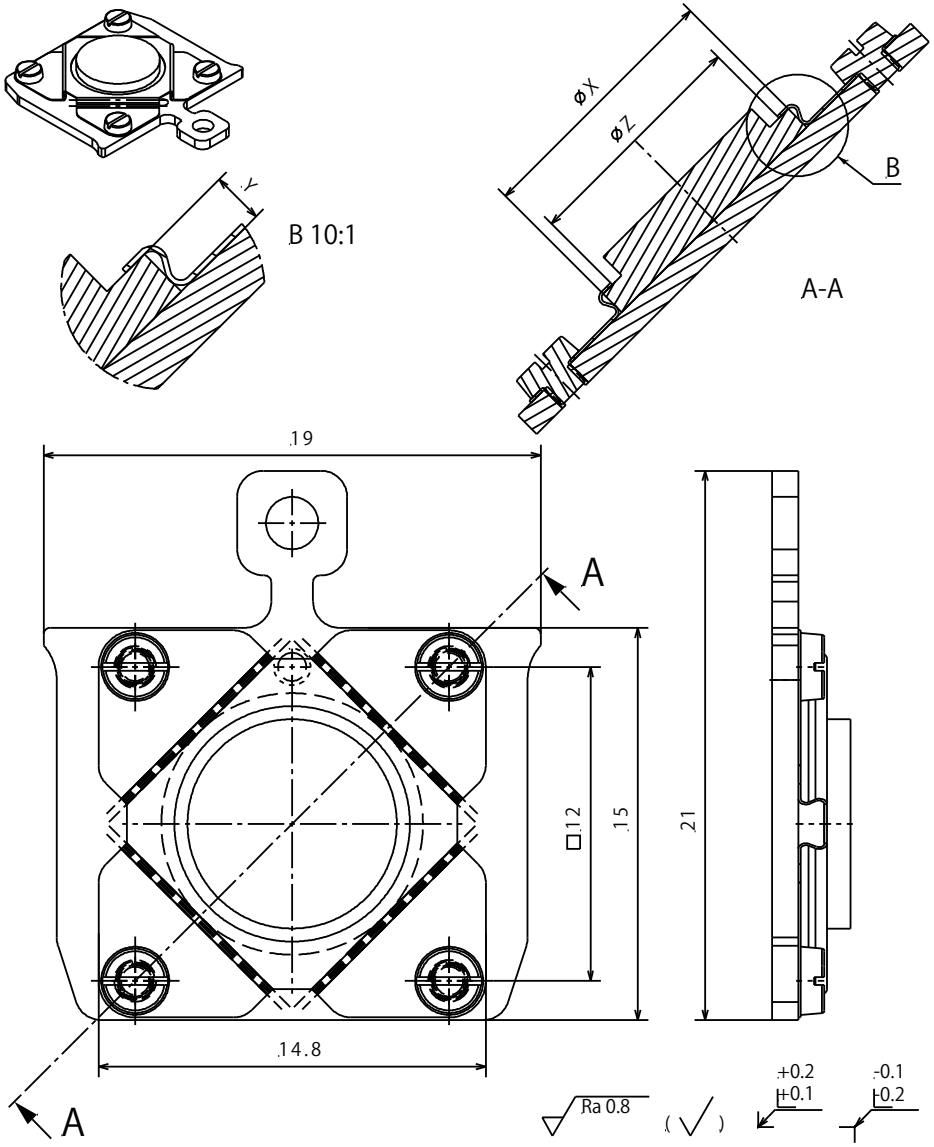


FERROVAC ULTRA HIGH VACUUM TECHNOLOGY SHOMEC13(MO-DT)：13x電気接点/温度センサー付モリブデンサンプルホルダー

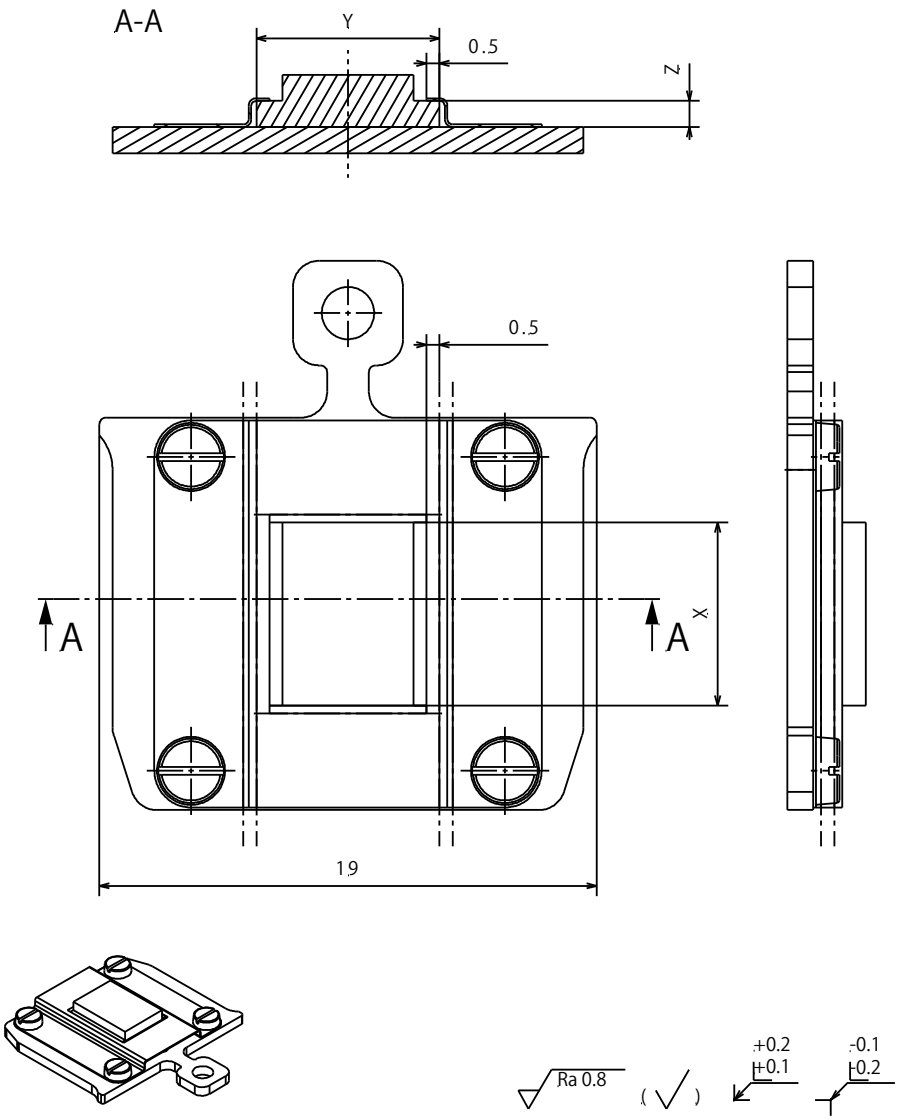
名称		**SHOMEC13(MO-DT)：13x電気接点/温度センサー付モリブデンサンプルホルダー**
外観図		
概要		・正確な温度測定は通常の搬送可能なサンプルプレートで問題になります。**SHOMEC13(MO-DT)**は、サンプル取付プレート真下のセラミックベースプレートのポケットに**DT-670シリコンダイオード温度センサー**を設置しての温度測定だけでなく、サンプル取付プレートを再加工して直接サンプルの裏面に**DT-670シリコンダイオード温度センサー**を密着させてより正確な温度測定をすることができる**サンプルホルダー**です。 ・**3xスリットベースプレート**(上図：1, 2, 3)を備えた**サンプルホルダー**で、適合サンプルレシーバー(**RECOMCREC13V2/RECOMEC13**)に組み込まれた3個のルビー球による**キネマティックスナップイン**(3点マウント)により再現性のある位置決めをミクロン精度で正確にスナップインすることができます。 ・**セラミックベースプレート(AINアイソレーター)**にはデバイス配線用**13x電気的高品質スプリングプローブコンタクト**が取り付けられています。 ・熱膨張による変形防止のために材料には高熱伝導率・熱膨張係数が殆ど変わらない**モリブデン**と**シェイパルM**を採用しています。 **【高熱伝導率】モリブデン/シェイパルM：100-140(W/m/K)(@20℃)【低熱膨張率】モリブデン：5.35(10E-6/K)/シェイパルM：4.8(10E-6/K)**
製品コード		**SHOMEC13(MO-DT)**
仕様	**スプリングコンタクト**	**13個** (コントクトストローク：**0.235mm**)
	3xスリットサンプルプレート	**SHOM3S** (スナップイン用3xスリット付サンプルプレート)
	シールドキャップ窓	**6×6mm** (オプション：3x3mm/4x4mm/5x5mm)
	内蔵温度センサー	**DT-670シリコンダイオード温度センサー** (Lake Shore Cryotronics社製)
	材料	極低温・フルUHV適合材料
	・3xスリットベースプレート	モリブデン (オプション：CuBe2 / SUS304)
	・セラミックベースプレート(AINアイソレーター)	シェイパルM (**AIN**：窒化アルミニウムセラミックス)
	・サンプル取付プレート	シェイパルM (**AIN**：窒化アルミニウムセラミックス)
	・シールドキャップ	モリブデン (オプション：CuBe2 / SUS304)
	・スプリングコンタクト	弱磁性Ni金メッキベリリウム銅合金(CuBe2)
	・締めネジ	モリブデン (オプション：CuBe2 / SUS304)
	最高温度	180℃
	適合サンプルレシーバー	**RECOMCREC13V2/RECOMEC13**

FERROVAC ULTRA HIGH VACUUM TECHNOLOGY — SHOMEC13(MO)：13x電気接点付モリブデンサンプルホルダー

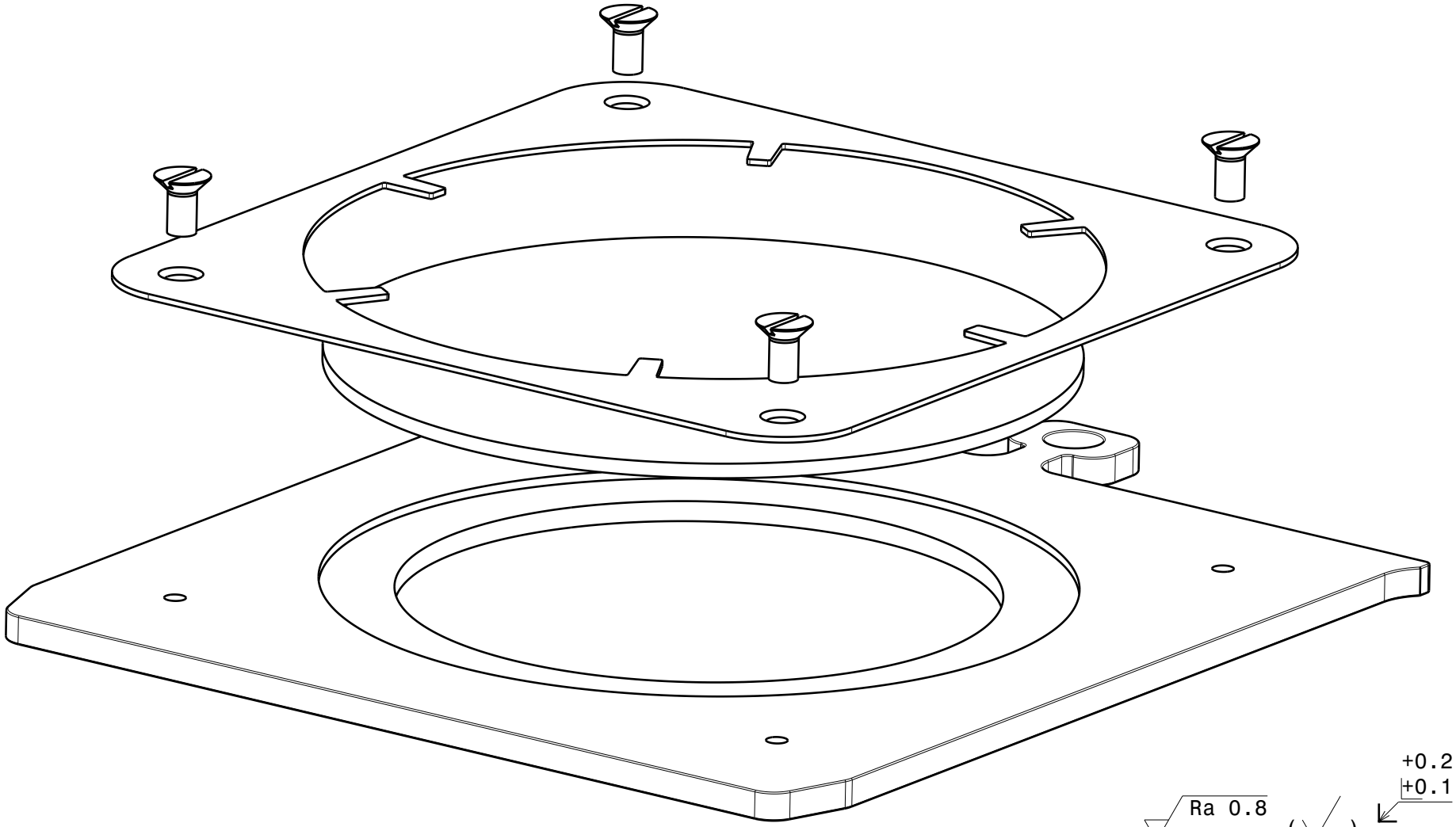
名称		**SHOMEC13(MO)：13x電気接点付モリブデンサンプルホルダー**
外観図		
概要		・**SHOMEC13(MO)**は、**13x電気高品質スプリングコンタクト**と**キネマティックスナップイン用3xスリット**(上図：1, 2, 3)を備えた**サンプルホルダー**です。 ・適合サンプルレシーバー(**RECOMCREC13V2/RECOMEC13**)に組み込まれた3個のルビー球による**キネマティックスナップイン**(3点マウント)により再現性のある位置決めをミクロン精度で正確にスナップインすることができます。 ・**セラミックベースプレート(AINアイソレーター)**には**13x電気高品質スプリングコンタクト**が取付られており、さまざまなデバイスを配線することができます。 ・**セラミックベースプレート(AINアイソレーター)**のポケットには、**DT-670**シリコンダイオード温度センサー、熱電対、**Pt100**抵抗を取り付けることができます。 ・上図**【アプリケーション例】**は、**SOIC-08(8ピン：2x4ピン)表面実装(SMT: Surface Mount type)ソケット**の取付例を示しています。 ・サンプル取付プレートとシールドキャップのカスタマイズ可能
製品コード		**SHOMEC13(MO)**
仕様	**スプリングコンタクト**	**13個** (コントクトストローク：**0.235mm**)
	3xスリットベースプレート	**SHOM3S** (キネマティックスナップイン用3xスリット付サンプルプレート)
	シールドキャップ窓サイズ	**6×6mm** (オプション：3x3mm/4x4mm/5x5mm)
	材料	極低温・フルUHV適合材料
	・3xスリットベースプレート	モリブデン (オプション：CuBe2 / SUS304)
	・セラミックベースプレート (AINアイソレーター)	シェイパルM (**AIN**：マシナブル窒化アルミニウムセラミックス)
	・サンプル取付プレート	シェイパルM (**AIN**：マシナブル窒化アルミニウムセラミックス)
	・シールドキャップ	モリブデン (オプション：CuBe2 / SUS304)
	・スプリングコンタクト	弱磁性Ni金メッキベリリウム銅合金(CuBe2)
	・締めネジ	モリブデン (オプション：CuBe2 / SUS304)
	最高温度	180℃
	適合サンプルレシーバー	**RECOMCREC13V2/RECOMEC13**



Material: According to Order	nominal dimensions ≤30mm / >30mm	DIN ISO 2768-f-H / DIN ISO 2768-m- K excluding Sym./Runout	
	Sym./Runout >30mm	DIN ISO 2768-H	
Sample Holder for round or quadratic Single Crystals	formed part dimensions	DIN ISO 2768-f-H	
SHOMT	Scale	Drawn	Vassalli
		Date	30.01.2019
	5:1	Changed	20.09.2020 JB
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	Rev. B	A4.sheet 1/1	



Material: gem. Bestellung	nominal dimensions ≤30mm / >30mm	DIN ISO 2768-f-H / DIN ISO 2768-m- K excluding Sym./Runout	
	Sym./Runout >30mm	DIN ISO 2768-H	
Sample Holder for Single Crystals	formed part dimensions	DIN ISO 2768-f-H	
SHOMT	Scale	Drawn	Name
		Date	30.01.2019
	5:1 2:1	Changed	Vassalli
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	Rev. A	A4.sheet 1/1	



Ra 0.8 ( ) +0.2 +0.1 -0.1 -0.2

general tolerances ISO 2768-K

Material: fully UHV compatible

Sample Holder for 1inch Wafer

nominal dimension over	1	6	30	100	300	1000
up to	6	30	100	300	1000	2000
tolerance ±	0.05	0.1	0.3	0.5	0.8	1.2

Scale 5:1

Drawn C.Weiss

Date 12.07.2017

changed 25.08.20 CW

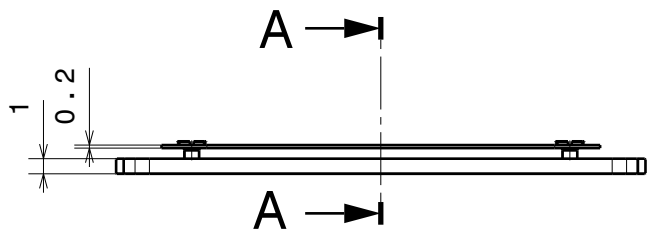
Rev. B

SHOMCH

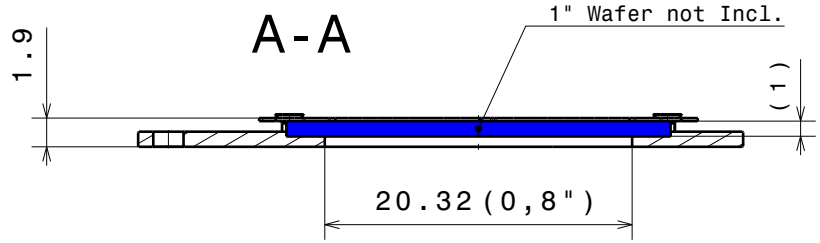
A4 sheet 1/1

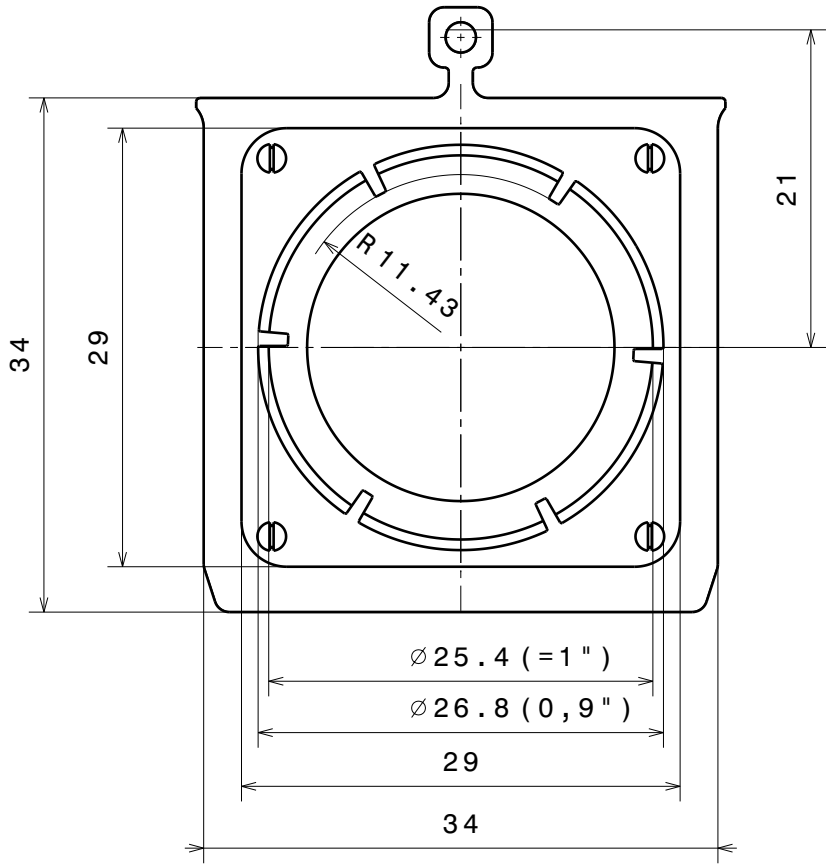
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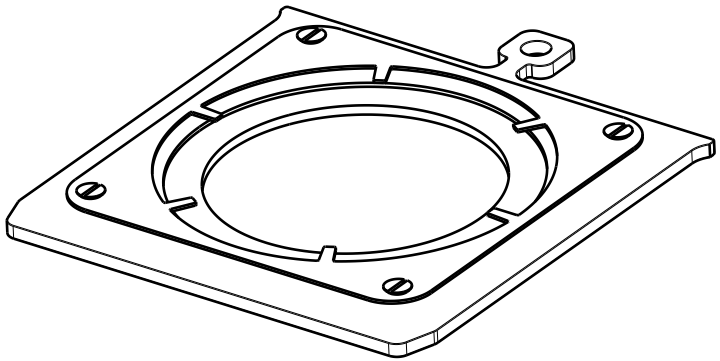
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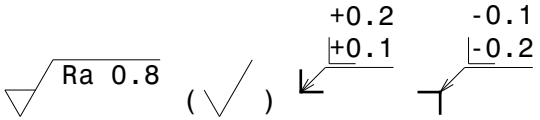


Application Example









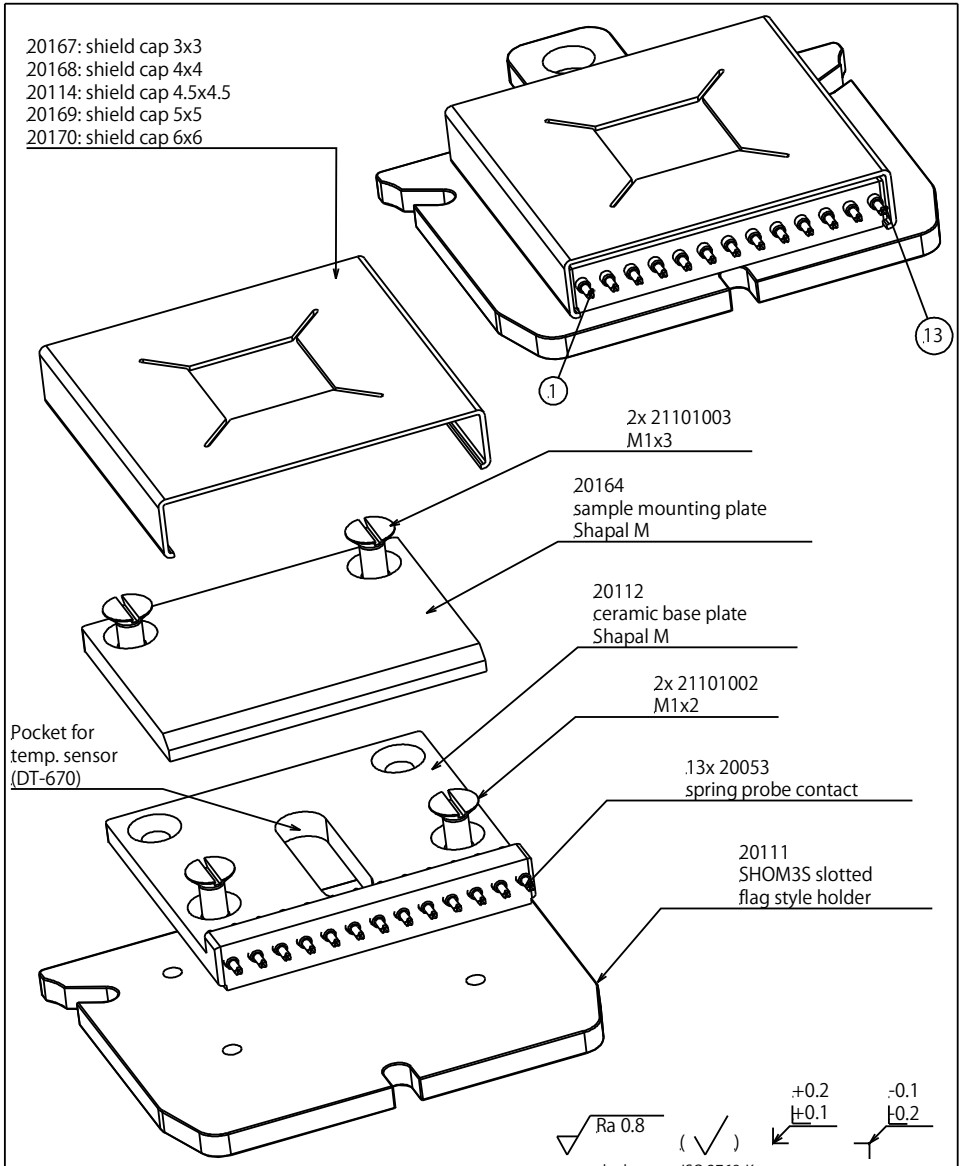
general tolerances ISO 2768-K

Material: fully UHV compatible	nominal dimension over	1	6	30	100	300	1000
Sample Holder for 1inch Wafer	up to	6	30	100	300	1000	2000
	tolerance ±	0.05	0.1	0.3	0.5	0.8	1.2

Scale	Drawn	C.Weiss
2:1	Date	12.07.2017
	changed	25.08.20 CW
Rev. B	**SHUPSCH**	
	A4 sheet 1/1	

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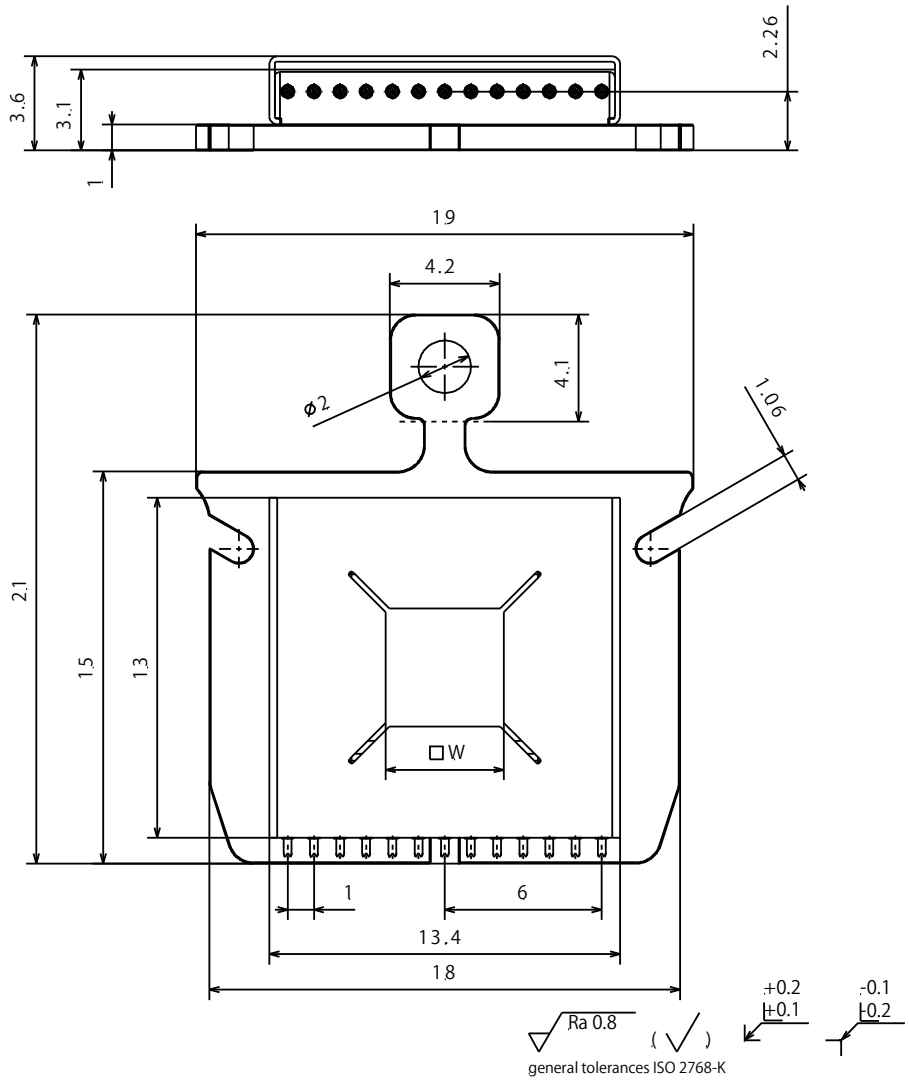


Material: ,...	nominal dimension	over	1	6	30	100	300	1000
	tolerance	up to	6	30	100	300	1000	2000
Sample plate with 13 el. contacts and slits for snap-in lock		±	0.05	0.1	0.3	0.5	0.8	1.2

Scale	Drawn	U. Maier
5:1	Date	01.04.2014
	Changed	23.05.14 UM
Rev. B	SHOMEC13	sheet 1/2

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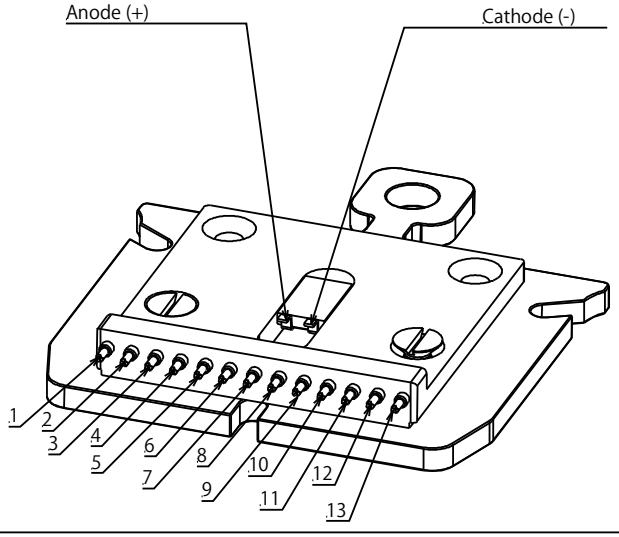


Material: ,...	nominal dimension	over	1	6	30	100	300	1000
	tolerance	up to	6	30	100	300	1000	2000
Sample plate with 13 el. contacts and slits for snap-in lock		±	0.05	0.1	0.3	0.5	0.8	1.2

Scale	Drawn	U. Maier
5:1	Date	01.04.2014
	Changed	23.05.14 UM
Rev. B	SHOMEC13	sheet 2/2

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Pin	usage
1	
2	
3	
4	
5	
6	DT670 SD +
7	DT670 SD +
8	DT670 SD -
9	DT670 SD -
10	
11	
12	
13	

Material: ,...

Sample plate with 13 el. contacts
and slits for snap-in lock

nominal dimension	over	.1	.6	.30	.100	.300	.1000
tolerance	up to	.6	.30	.100	.300	.1000	.2000
	±	0.05	0.1	0.3	0.5	0.8	1.2

Scale: 5:1

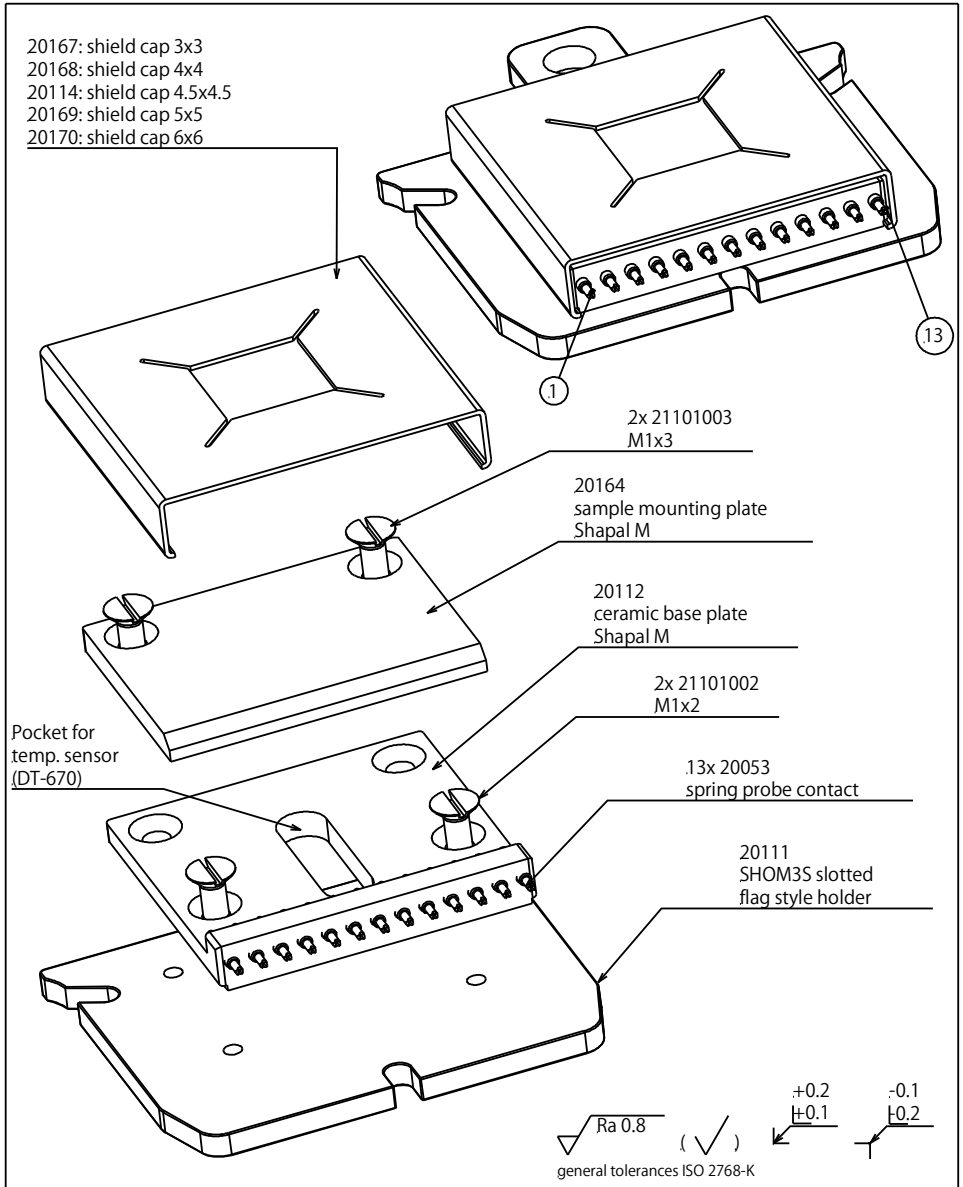
Drawn: U. Maier
Date: 01.04.2014
Changed: 23.05.2019 CW

Rev. C

SHOMEC13(MO-DT)
sheet 2/3

Ferrovac GmbH
CH-8050 Zurich

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Material: ,...

Sample plate with 13 el. contacts
and slits for snap-in lock

nominal dimension	over	.1	.6	.30	.100	.300	.1000
tolerance	up to	.6	.30	.100	.300	.1000	.2000
	±	0.05	0.1	0.3	0.5	0.8	1.2

Scale: 5:1

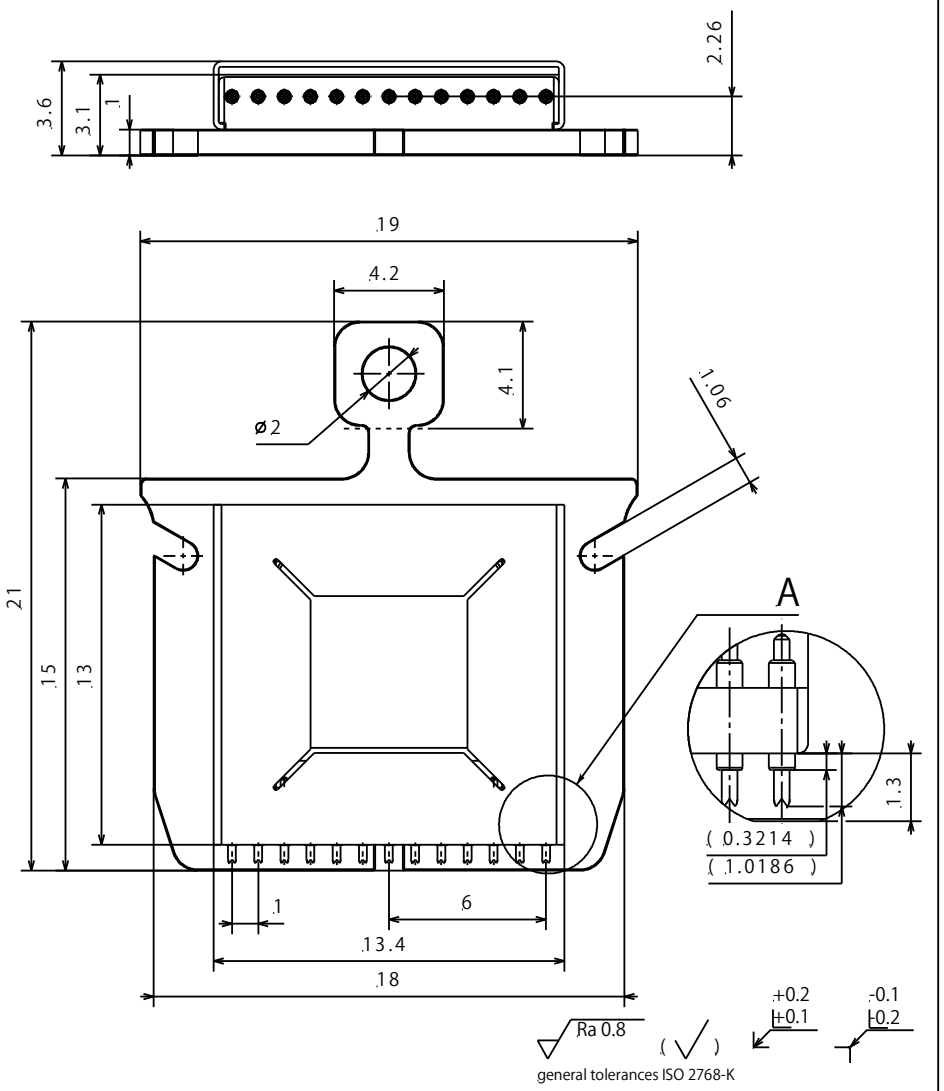
Drawn: U. Maier
Date: 01.04.2014
Changed: 23.05.14 UM

Rev. B

SHOMEC13(MO-DT)
sheet 1/3

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Material: ,...	nominal dimension	over	1	6	30	100	300	1000
		up to	6	30	100	300	1000	2000
Sample plate with 13 el. contacts and slits for snap-in lock	tolerance	±	0.05	0.1	0.3	0.5	0.8	1.2

Scale	Drawn	U. Maier
5:1	Date	01.04.2014
	Changed	23.05.2019 CW
Rev. C	SHOMEC13(MO-DT) sheet 2/3	

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DT-670 Silicon Diodes

DT-670-SD features

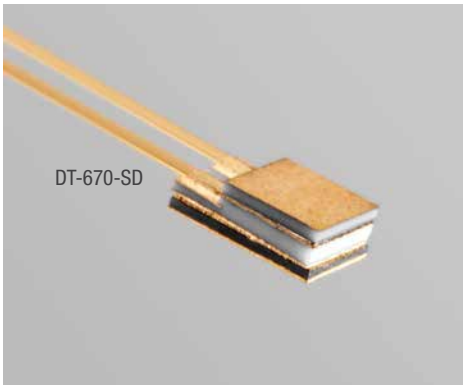
- Best accuracy across the widest useful temperature range—1.4 K to 500 K—of any silicon diode in the industry
- Tightest tolerances for 30 K to 500 K applications of any silicon diode to date
- Rugged, reliable Lake Shore SD package designed to withstand repeated thermal cycling and minimize sensor self-heating
- Conformance to standard DT-670 temperature response curve
- Variety of packaging options

DT-670E-BR features

- Temperature range: 1.4 K to 500 K
- Bare die sensors with the smallest size and fastest thermal response time of any silicon diode on the market today
- Non-magnetic sensor

DT-621-HR features

- Temperature range: 1.4 K to 325 K (uncalibrated down to 20 K)
- Non-magnetic package
- Exposed flat substrate for surface mounting



DT-670 Series silicon diodes offer better accuracy over a wider temperature range than any previously marketed silicon diodes. Conforming to the Curve DT-670 standard voltage versus temperature response curve, sensors within the DT-670 series are interchangeable, and for many applications do not require individual calibration. DT-670 sensors in the SD package are available in four tolerance bands—three for general cryogenic use across the 1.4 K to 500 K temperature range, and one that offers superior accuracy for applications from 30 K to room temperature.

DT-670-SD diodes are available with calibration across the full 1.4 K to 500 K temperature range.

The bare die sensor, the DT-670E-BR, provides the smallest physical size and fastest thermal response time of any silicon diode on the market today. This is an important advantage for applications where size and thermal response time are critical, including focal plane arrays and high temperature superconducting filters for cellular communication.

Packaging options

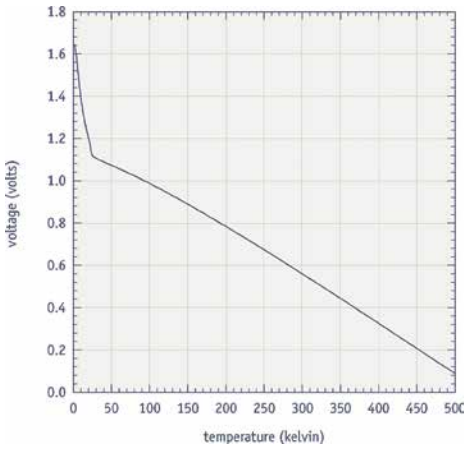
BO, BR, CO, CU, CY, DI, ET, LR, MT

CAUTION: These sensors are sensitive to electrostatic discharge (ESD). Use ESD precautionary procedures when handling, or making mechanical or electrical connections to these devices in order to avoid performance degradation or loss of functionality.

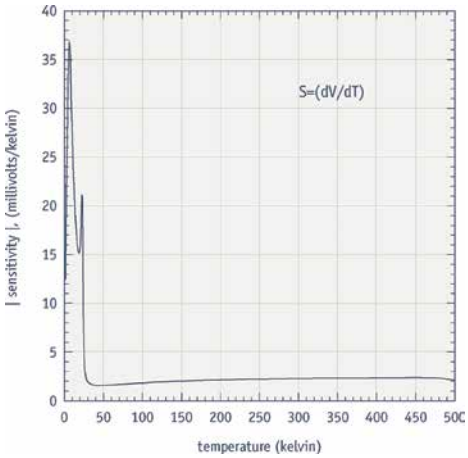
The Lake Shore SD package — the most rugged, versatile package in the industry

The SD package, with direct sensor-to-sapphire base mounting, hermetic seal, and brazed Kovar leads, provides the industry's most rugged, versatile sensors with the best sample to chip connection. Designed so heat coming down the leads bypasses the chip, it can survive several thousand hours at 500 K (depending on model) and is compatible with most ultra high vacuum applications. It can be indium soldered to samples without shift in sensor calibration. If desired, the SD package is also available without Kovar leads.

Typical DT-670 diode voltage



Typical DT-670 diode sensitivity



Specifications

Standard curve Curve DT-670—see next page

Recommended excitation 10 µA ±0.1%

Max reverse voltage 40 V

Max current before damage 1 mA continuous or 100 mA pulsed

Dissipation at recommended excitation
16 µW at 4.2 K; 10 µW at 77 K; 5 µW at 300 K

Thermal response time SD: typical <10 ms at 4.2 K, 100 ms at 77 K, 200 ms at 305 K; BR: 1 ms at 4.2 K, 13 ms at 77 K, 20 ms at 305 K

Use in radiation Recommended for use only in low level radiation—see Appendix B

Use in magnetic field Not recommended for use in magnetic field applications below 60 K. Low magnetic field dependence when used in fields up to 5 tesla above 60 K—see Appendix B

Reproducibility[1] ±10 mK at 4.2 K

Soldering standard J-STD-001 Class 2

[1] Short-term reproducibility data is obtained by subjecting sensor to repeated thermal shocks from 305 K to 4.2 K

Range of use

Package	Minimum limit	Maximum limit
SD, CU-HT, BR	1.4 K	500 K
CU, LR, CY, ET, MT, BO, HR	1.4 K	420 K

Calibrated accuracy

	Typical sensor accuracy[2]
1.4 K	±12 mK
4.2 K	±12 mK
10 K	±12 mK
77 K	±22 mK
300 K	±32 mK
500 K	±50 mK

[2] [(Calibration uncertainty)^2 +(reproducibility)2]$^{0.5}$ for more information see Appendices B, D, and E

Temperature response data table (typical)

	DT-670		DT-621-HR	
	V (volts)	dV/dT (mV/K)	V (volts)	dV/dT (mV/K)
1.4 K	1.64	-12.5	—	—
4.2 K	1.58	-31.6	1.678	-35
10 K	1.38	-26.8	—	—
77 K	1.03	-1.73	1.03	1.73
305 K	0.560	-2.30	0.560	-2.3

See Appendix G for expanded response table

Long-term stability

	Use to 305 K[3]	Use to 500 K[4]
4.2 K	±10 mK	±40 mK
77 K	±40 mK	±100 mK
305 K	±25 mK	±50 mK
500 K	—	±150 mK

[3] Long-term stability data is obtained by subjecting sensor to 200 thermal shocks from 305 K to 77 K

[4] Based on 670 h of baking at 500 K

Standard curve DT-670 tolerance bands

	2 K to 100 K	100 K to 305 K	305 K to 500 K
Band A	±0.25 K	±0.5 K	±0.5 K
Band A1	±0.25 K	±1.5% of temp	±1.5% of temp
Band B	±0.5 K	±0.5 K	±0.33% of temp
Band B1	±0.5 K	±1.5% of temp	±1.5% of temp
Band C	±1 K	±1 K	±0.50% of temp

	30 K to 100 K	100 K to 305 K	305 K to 500 K
Band D[5]	±0.25 K	±0.50 K	±0.20% of temp

[5] For T < 30 K ±1.5 K

	2 K to 100 K	100 K to 500 K
DT-670E-BR	±1.5 K typical	±1.5% of temp typical

	20 K to 325 K
DT-621-HR	±2.5 K or ±1.5% of temperature, whichever is greater

DT-621-HR miniature silicon diode

The DT-621 miniature silicon diode temperature sensor is configured for installation on flat surfaces. Due to the absence of magnetic materials in its construction, this package is suited for applications where minimal interaction between the diode and sample space magnetic field is desired. The DT- 621 sensor package exhibits precise, monotonic temperature response over its useful range. The sensor chip is in direct contact with the epoxy dome, which causes increased voltage below 20 K and prevents full range Curve DT-670 conformity. For use below 20 K, calibration is required.



DT-621-HR

Physical specifications

	Mass	Lead type	Lead polarity	Sensor materials used
DT-670-SD	37 mg	2—nickel and gold plated Kovar	Positive lead on right with package lid up and leads towards user	Sapphire base with alumina body & lid. Molybdenum/manganese metallization on base and lid top with nickel and gold plating. Gold tin solder as hermetic seal.
DT-670E-BR (bare die)	72.7 µg	None	Positive connection made through bottom of chip; negative connection made on base pad on top of chip	Silicon chip with aluminum metallization on chip contacts.
DT-621-HR	23 mg	2—platinum ribbon with tinned 60/40 SnPb solder	Positive lead is right-hand ribbon with platinum disk down and leads towards user	Sensing element is mounted to a platinum disk and covered with a dome of Stycast® 2850 epoxy

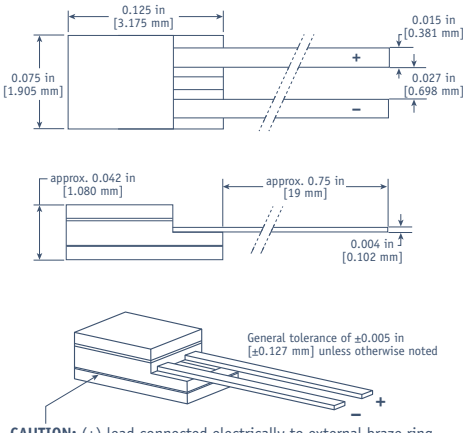
Typical magnetic field-dependent temperature errors[6] ΔT/T (%) at B (magnetic induction)

Package base parallel to field B					
	1 T	2 T	3 T	4 T	5 T
4.2 K	-200	-300	-350	-400	-500
20 K	-10	-20	-25	-30	-40
40 K	-4	-6	-8	-10	-12
60 K	-0.5	-1	-2	-3	-3.5
80 K	< 0.1	-0.5	-0.8	-1.1	-1.5
300 K	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1

Package base perpendicular to field B					
	1 T	2 T	3 T	4 T	5 T
4.2 K	-8	-9	-11	-15	-20
20 K	-4	-5	-5	-5	-10
40 K	-1.5	-3	-4	-5	-5.5
60 K	-0.5	-0.7	-0.8	-1	-1.1
80 K	-0.1	-0.3	-0.5	-0.6	-0.7
300 K	<0.1	0.2	0.5	0.6	0.6

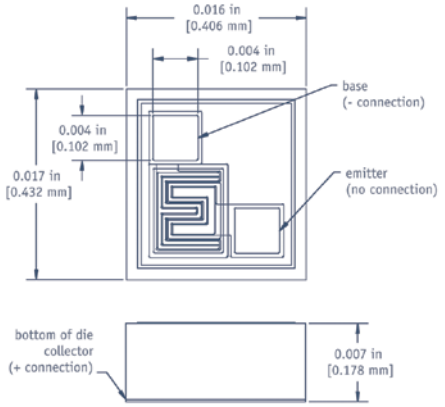
[6] To minimize magnetic field-induced temperature errors, the sensor should be oriented so that the package base is perpendicular to the magnetic field flux lines—this results in the diode current being parallel to the magnetic field

DT-670-SD

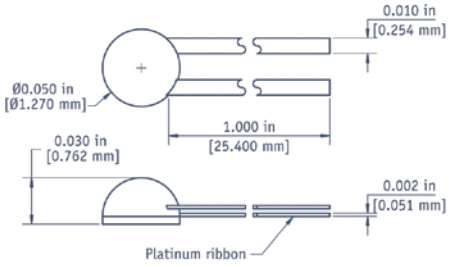


CAUTION: (+) lead connected electrically to external braze ring—take care not to cause a short

DT-670E-BR

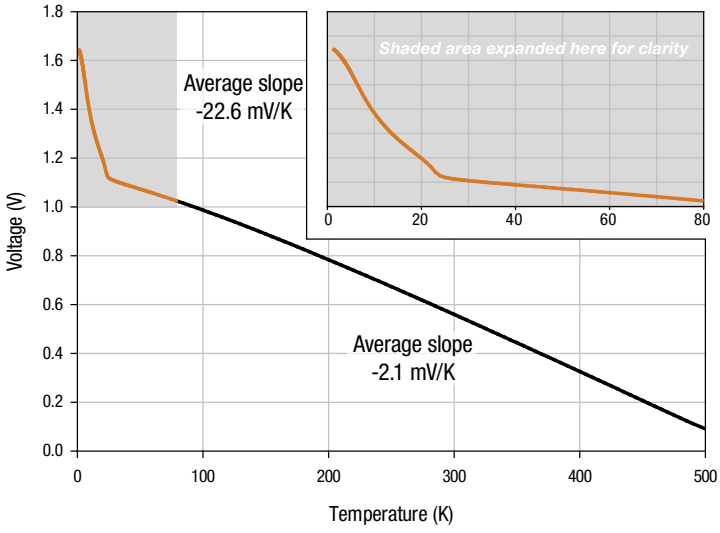


DT-621-HR

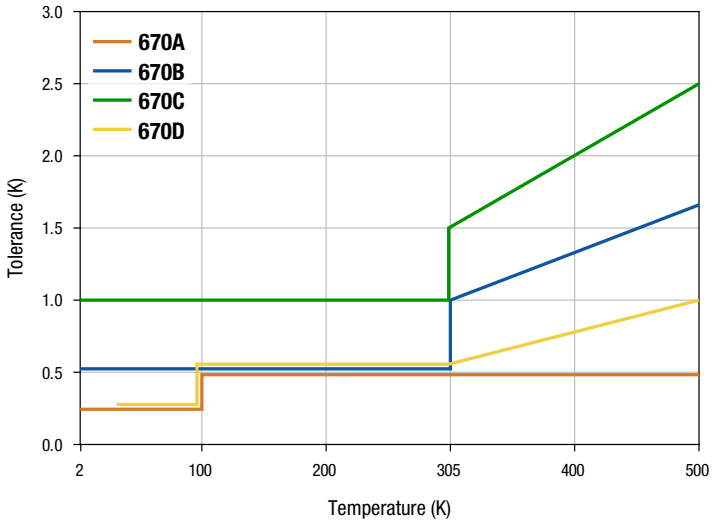


General tolerance of ±0.005 in [±0.127 mm] unless otherwise noted

DT-670 temperature response curve



Curve DT-670 tolerance bands



DT-670 Series expanded temperature response data table

T (K)	Voltage (V)	dV/dT (mV/K)	T (K)	Voltage (V)	dV/dT (mV/K)	T (K)	Voltage (V)	dV/dT (mV/K)	T (K)	Voltage (V)	dV/dT (mV/K)
1.4	1.644290	-12.5	**6.0**	1.51541	-36.7	**28.0**	1.110421	-2.25	**160.0**	0.868518	-2.07
1.5	1.642990	-13.6	**6.5**	1.49698	-36.9	**29.0**	1.108261	-2.08	**170.0**	0.847659	-2.10
1.6	1.641570	-14.8	**7.0**	1.47868	-36.2	**30.0**	1.106244	-1.96	**180.0**	0.826560	-2.12
1.7	1.640030	-16.0	**7.5**	1.46086	-35.0	**31.0**	1.104324	-1.88	**190.0**	0.805242	-2.14
1.8	1.638370	-17.1	**8.0**	1.44374	-33.4	**32.0**	1.102476	-1.82	**200.0**	0.783720	-2.16
1.9	1.636600	-18.3	**8.5**	1.42747	-31.7	**33.0**	1.100681	-1.77	**210.0**	0.762007	-2.18
2.0	1.634720	-19.3	**9.0**	1.41207	-29.9	**34.0**	1.098930	-1.73	**220.0**	0.740115	-2.20
2.1	1.632740	-20.3	**9.5**	1.39751	-28.3	**35.0**	1.097216	-1.70	**230.0**	0.718054	-2.21
2.2	1.630670	-21.1	**10.0**	1.38373	-26.8	**36.0**	1.095534	-1.69	**240.0**	0.695834	-2.23
2.3	1.628520	-21.9	**10.5**	1.37065	-25.5	**37.0**	1.093878	-1.64	**250.0**	0.673462	-2.24
2.4	1.626290	-22.6	**11.0**	1.35820	-24.3	**38.0**	1.092244	-1.62	**260.0**	0.650949	-2.26
2.5	1.624000	-23.2	**11.5**	1.34632	-23.2	**39.0**	1.090627	-1.61	**270.0**	0.628302	-2.27
2.6	1.621660	-23.6	**12.0**	1.33499	-22.1	**40.0**	1.089024	-1.60	**273.0**	0.621141	-2.28
2.7	1.619280	-24.0	**12.5**	1.32416	-21.2	**42.0**	1.085842	-1.59	**280.0**	0.605528	-2.28
2.8	1.616870	-24.2	**13.0**	1.31381	-20.3	**44.0**	1.082669	-1.59	**290.0**	0.582637	-2.29
2.9	1.614450	-24.4	**13.5**	1.30390	-19.4	**46.0**	1.079492	-1.59	**300.0**	0.559639	-2.30
3.0	1.612000	-24.7	**14.0**	1.29439	-18.6	**48.0**	1.076303	-1.60	**310.0**	0.536542	-2.31
3.1	1.609510	-25.1	**14.5**	1.28526	-17.9	**50.0**	1.073099	-1.61	**320.0**	0.513361	-2.32
3.2	1.606970	-25.6	**15.0**	1.27645	-17.3	**52.0**	1.069881	-1.61	**330.0**	0.490106	-2.33
3.3	1.604380	-26.2	**15.5**	1.26794	-16.8	**54.0**	1.066650	-1.62	**340.0**	0.466760	-2.34
3.4	1.601730	-26.8	**16.0**	1.25967	-16.3	**56.0**	1.063403	-1.63	**350.0**	0.443371	-2.34
3.5	1.599020	-27.4	**16.5**	1.25161	-15.9	**58.0**	1.060141	-1.64	**360.0**	0.419960	-2.34
3.6	1.596260	-27.9	**17.0**	1.24372	-15.6	**60.0**	1.056862	-1.64	**370.0**	0.396503	-2.35
3.7	1.59344	-28.4	**17.5**	1.23596	-15.4	**65.0**	1.048584	-1.67	**380.0**	0.373002	-2.35
3.8	1.59057	-29.0	**18.0**	1.22830	-15.3	**70.0**	1.040183	-1.69	**390.0**	0.349453	-2.36
3.9	1.58764	-29.6	**18.5**	1.22070	-15.2	**75.0**	1.031651	-1.72	**400.0**	0.325839	-2.36
4.0	1.58465	-30.2	**19.0**	1.21311	-15.2	**77.35**	1.027594	-1.73	**410.0**	0.302161	-2.37
4.2	1.57848	-31.6	**19.5**	1.20548	-15.3	**80.0**	1.022984	-1.75	**420.0**	0.278416	-2.38
4.4	1.57202	-32.9	**20.0**	1.197748	-15.6	**85.0**	1.014181	-1.77	**430.0**	0.254592	-2.39
4.6	1.56533	-34.0	**21.0**	1.181548	-17.0	**90.0**	1.005244	-1.80	**440.0**	0.230697	-2.39
4.8	1.55845	-34.7	**22.0**	1.162797	-21.1	**100.0**	0.986974	-1.85	**450.0**	0.206758	-2.39
5.0	1.55145	-35.2	**23.0**	1.140817	-20.8	**110.0**	0.968209	-1.90	**460.0**	0.182832	-2.39
5.2	1.54436	-35.6	**24.0**	1.125923	-9.42	**120.0**	0.949000	-1.94	**470.0**	0.159010	-2.37
5.4	1.53721	-35.9	**25.0**	1.119448	-4.60	**130.0**	0.929390	-1.98	**480.0**	0.135480	-2.33
5.6	1.53000	-36.2	**26.0**	1.115658	-3.19	**140.0**	0.909416	-2.01	**490.0**	0.112553	-2.25
5.8	1.52273	-36.5	**27.0**	1.112810	-2.58	**150.0**	0.889114	-2.05	**500.0**	0.090681	-2.12

Ordering information

Uncalibrated sensor
Step 1: Choose diode series, for example DT-670.
Step 2: Choose tolerance band (if applicable), for example DT-670A.
Step 3: Choose package or mounting adapter—if ordering adapter, substitute the adapter suffix for the SD suffix, for example DT-670A-CU.

Calibrated sensor
Step 1: Choose diode series, for example DT-670.
Step 2: Choose package or mounting adapter—if ordering adapter, substitute the adapter suffix for the SD suffix, for example DT-670-CU.
Step 3: Specify the calibration range suffix code after the model number and package suffix, for example DT-670-CU-1.4L.

DT-670	Calibration range suffix codes Numeric figure is the low end of the calibration Letters represent the high end: L=325 K, H=500 K				
Model number	Uncal	1.4L	1.4H	70L	70H
DT-621-HR	■	■			
DT-670A-SD	■				
DT-670A1-SD	■				
DT-670B-SD	■				
DT-670B1-SD	■				
DT-670C-SD	■				
DT-670D-SD	■				
DT-670-SD		■	■	■	■
Mounting adapters are available for use with the SD package—replace SD suffix with mounting adapter suffix					
CO	■	■	■	■	■
CU, LR, CY, ET, BO, MT	■	■		■	
CU-HT	■	■	■	■	■
DI	■				
DT-670E-BR-10	■	bare chip silicon diode sensor, quantity 10			

Note: upper temperature limit package dependent—see Sensor Packages section
Other packaging available by special order—please consult Lake Shore

Accessories available for sensors

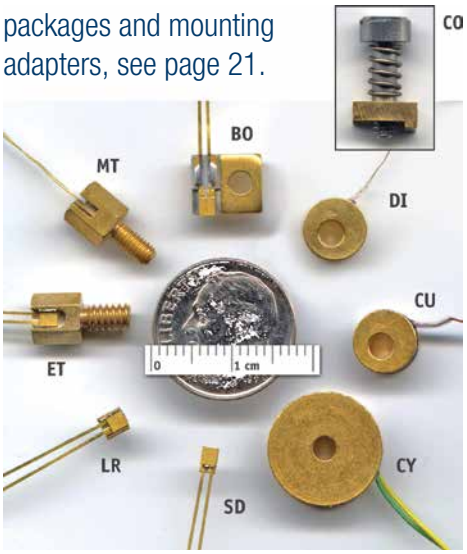
SN-CO-C1	CO style sensor clamps for SD package
ECRIT	Expanded interpolation table
8000	Calibration report on CD-ROM
COC-SEN	Certificate of conformance

USD VISA MasterCard AMERICAN EXPRESS PayPal

Accessories suggested for installation—see Accessories section for full descriptions
Stycast® epoxy
Apiezon® grease
90% Pb, 10% Sn solder
Indium solder
VGE-7031 varnish
Phosphor bronze wire
Manganin wire

Packaging options

For more information on sensor packages and mounting adapters, see page 21.



CO—spring loaded clamp for easy sensor interchangeability

Upgrade conversion chart

	From:	To:
Sensor	DT-470	DT-670
Band	11	A
	11A	A1
	12	B
	12A	B1
	13	C

See the appendices for a detailed description of:
Installation
Uncalibrated sensors
SoftCal™
Calibrated sensors
CalCurve™
Sensor packages

To add length to sensor leads, see page 25.