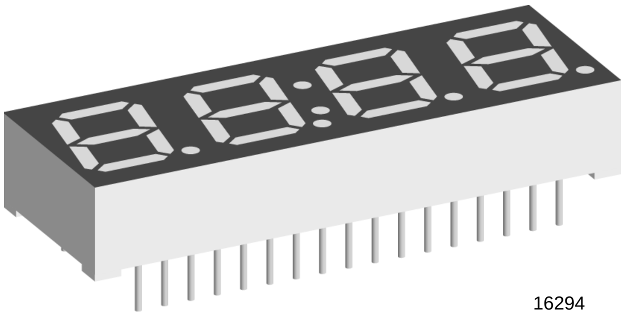
Clock Display

Color	Type	Circuitry
Green	TDCG1050	Common anode
	TDCG1060	Common cathode
Super red	TDCR1050	Common anode
	TDCR1060	Common cathode
Super yellow	TDCY1050	Common anode
	TDCY1060	Common cathode

Description

Four digit Display, with 10mm digit charactersize. Designed as clock Display with active colon between digit two and three.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Features

- High efficient AlInGAP Technology
- Dark surface, white segments
- Common anode (TDC.1050)
- Common cathode (TDC.1060)
- Recommended viewing distance up to 7 meter

Applications

Clock Display for Video / Audioequipment, Instrumentation, Set Top Boxes

Absolute Maximum Ratings

T_{amb} = 25°C, unless otherwise specified

TDCG1050 /TDCG1060, TDCR1050 /TDCR1060, TDCY1050 /TDCY1060,

Parameter	Test Conditions	Symbol	Value	Unit
Reverse voltage		V_R	5	V
Forward current		I_F	25	mA
Operating temperature range		T_{amb}	–40 to + 85	°C
Storage temperature range		T_{stg}	–40 to + 100	°C
Soldering temperature		T_{sd}	260 ± 5	°C
Electrostatic discharge		ESD	2000	V
Power dissipation		P_V	60	mW
Peak forward current	(Duty 1/10 @ 1kHz)	I_F(Peak)	160	mA

Optical and Electrical Characteristics

T_{amb} = 25°C, unless otherwise specified

Green (**TDCG1050, TDCG1060**)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity per segment [1)]	I_F = 2 mA	TDCG1050/1060	I_V		1.0		mcd
	I_F = 10 mA	TDCG1050/1060	I_V	2.8	4.0		mcd
Luminous intensity of colon	I_F = 2 mA	TDCG1050/1060	I_V		0.2		mcd
	I_F = 10 mA	TDCG1050/1060	I_V	0.5	1.2		mcd
Dominant wavelength	I_F = 20 mA		λ_d		573		nm
Peak wavelength	I_F = 20 mA		λ_p		575		nm
Spectrum Radiation Bandwidth	I_F = 20 mA		$\Delta\lambda$		20		nm
Forward voltage	I_F = 20 mA		V_F		2.0	2.4	V
Reverse current	V_R = 5V		I_R			10	μA

Super red (**TDCR1050, TDCR1060**)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity per segment [1)]	I_F = 2 mA	TDCR1050/1060	I_V		1.5		mcd
	I_F = 10 mA	TDCR1050/1060	I_V	4.0	6.0		mcd
Luminous intensity of colon	I_F = 2 mA	TDCR1050/1060	I_V		0.4		mcd
	I_F = 10 mA	TDCR1050/1060	I_V	0.5	0.8		mcd
Dominant wavelength	I_F = 20 mA		λ_d		631		nm
Peak wavelength	I_F = 20 mA		λ_p		639		nm
Spectrum Radiation Bandwidth	I_F = 20 mA		$\Delta\lambda$		20		nm
Forward voltage	I_F = 20 mA		V_F		2.0	2.4	V
Reverse current	V_R = 5V		I_R			10	μA

Super yellow (**TDCY1050, TDCY1060**)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity per segment [1)]	I_F = 2 mA	TDCY1050/1060	I_V		1.5		mcd
	I_F = 10 mA	TDCY1050/1060	I_V	4.0	6.0		mcd
Luminous intensity of colon	I_F = 2 mA	TDCY1050/1060	I_V		0.4		mcd
	I_F = 10 mA	TDCY1050/1060	I_V	0.5	0.8		mcd
Dominant wavelength	I_F = 20 mA		λ_d		589		nm
Peak wavelength	I_F = 20 mA		λ_p		591		nm
Spectrum Radiation Bandwidth	I_F = 20 mA		$\Delta\lambda$		15		nm
Forward voltage	I_F = 20 mA		V_F		2.0	2.4	V
Reverse current	V_R = 5V		I_R			10	μA

Note [1)] I_{Vmin} and I_V groups are mean values of all segments (a to g, D1 to D4),
matching factor within segments is $\geq$ 0.5, excluding decimal points and colon.

Typical Characteristics (T_{amb} = 25°C, unless otherwise specified)

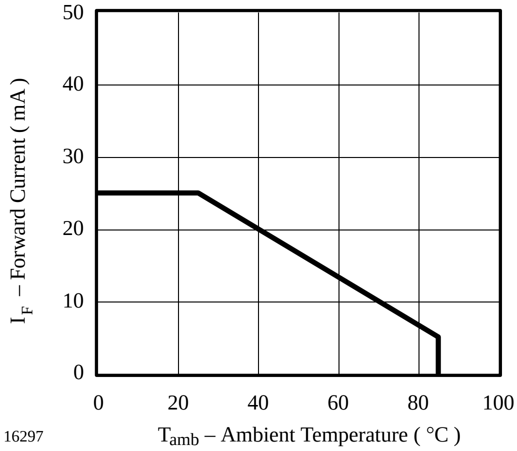


Figure 1. Forward Current vs. Ambient Temperature

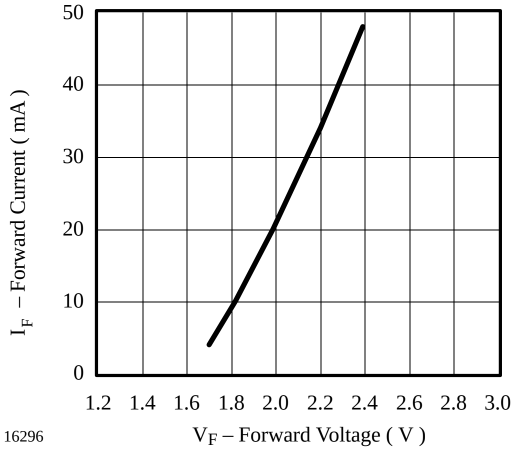


Figure 2. Forward Current vs. Forward Voltage

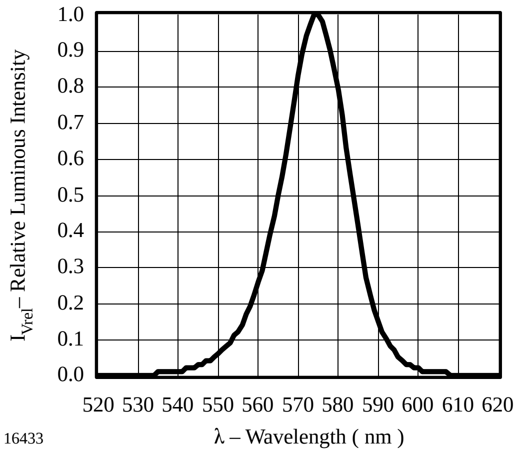


Figure 3. Relative Luminous Intensity vs. Wavelength

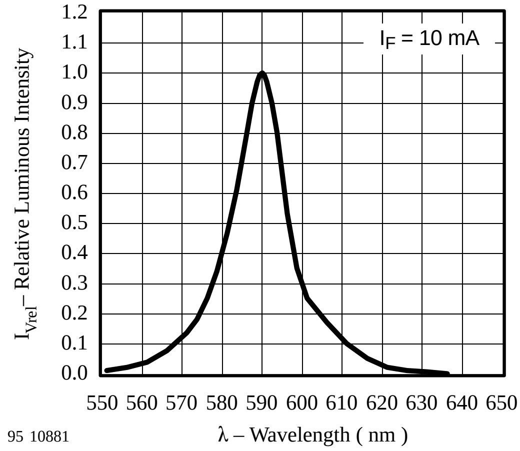


Figure 4. Relative Luminous Intensity vs. Wavelength

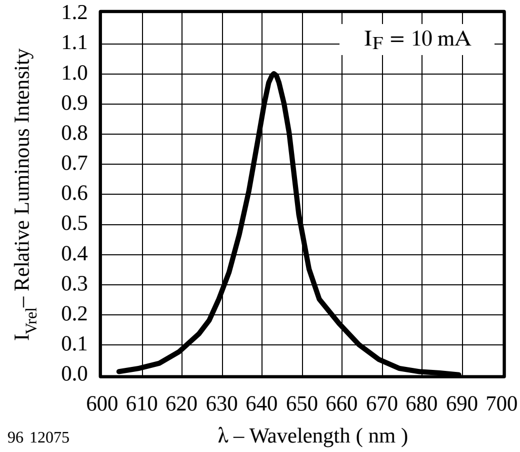
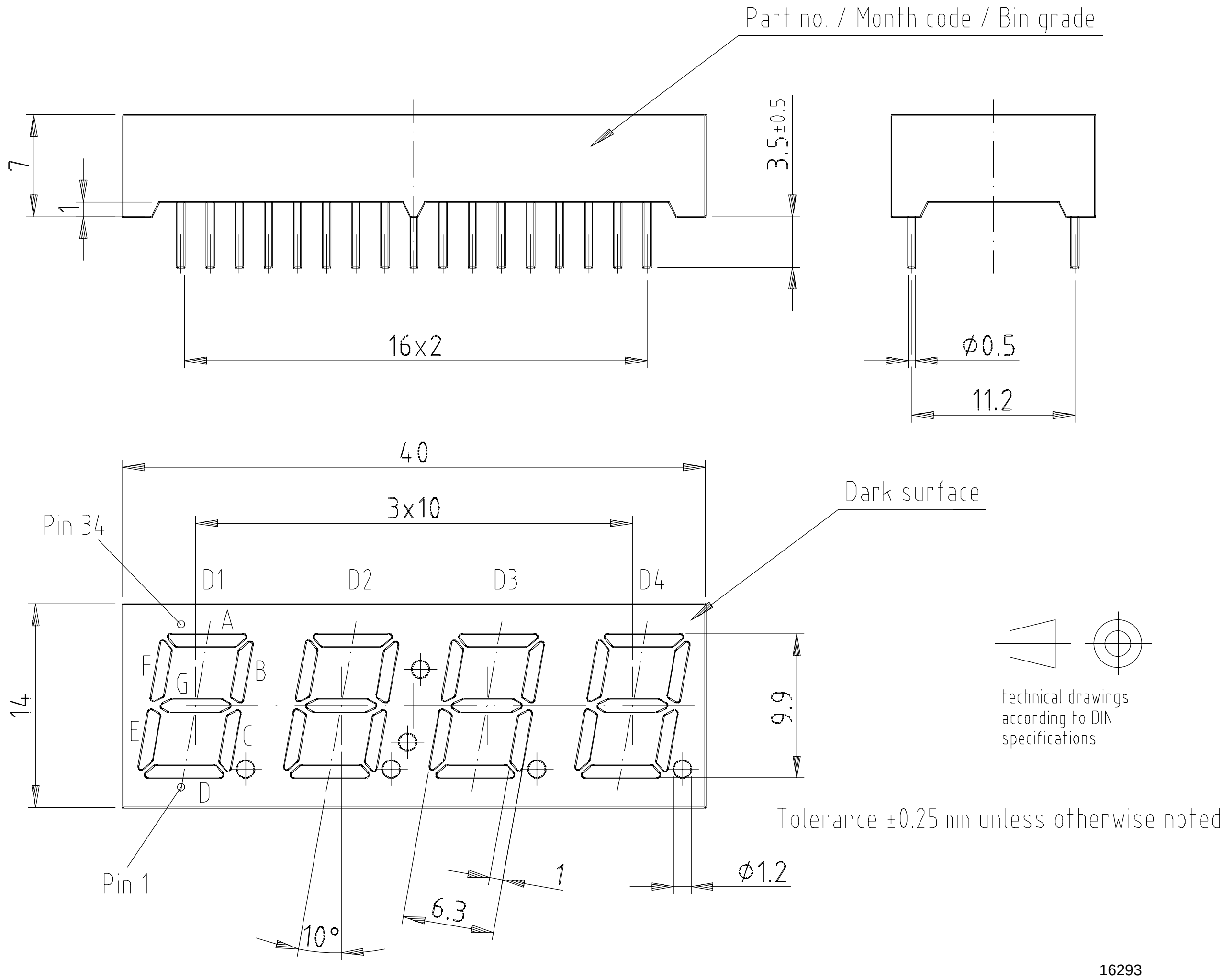


Figure 5. Relative Luminous Intensity vs. Wavelength

Dimensions in mm



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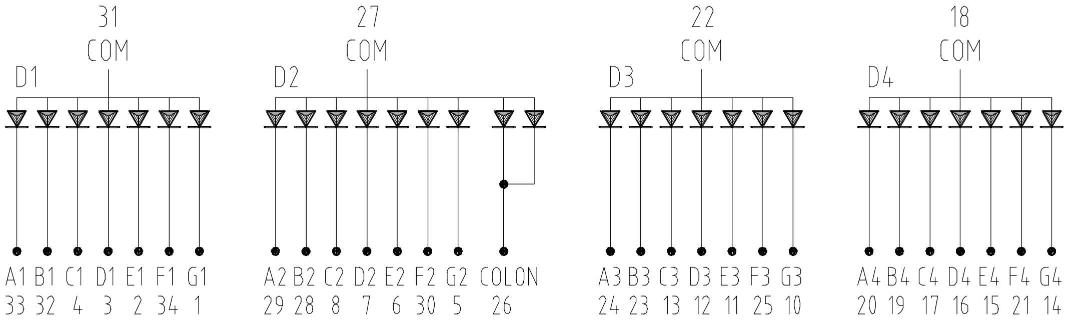
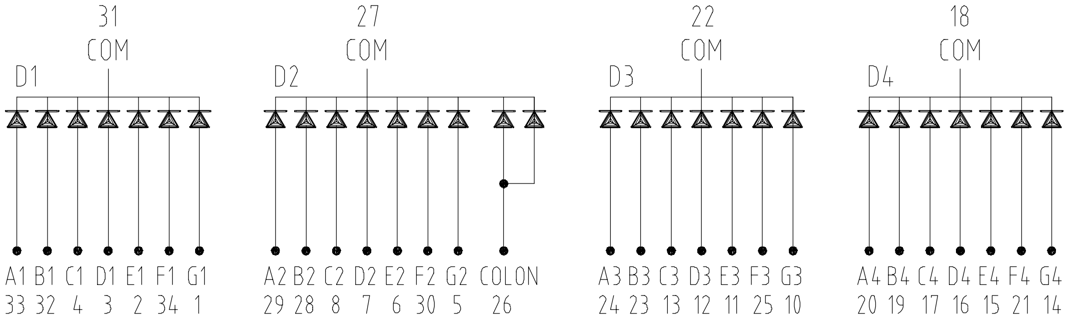


Common Anode

1 Cathode D1 G
2 Cathode D1 E
3 Cathode D1 D
4 Cathode D1 C
5 Cathode D2 G
6 Cathode D2 E
7 Cathode D2 D
8 Cathode D2 C
9 no Pin
10 Cathode D3 G
11 Cathode D3 E
12 Cathode D3 D
13 Cathode D3 C
14 Cathode D4 G
15 Cathode D4 E
16 Cathode D4 D
17 Cathode D4 C
18 Common Anode D4
19 Cathode D4 B
20 Cathode D4 A
21 Cathode D4 F
22 Common Anode D3
23 Cathode D3 B
24 Cathode D3 A
25 Cathode D3 F
26 Cathode D2 Colon
27 Common Anode D2
28 Cathode D2 B
29 Cathode D2 A
30 Cathode D2 F
31 Common Anode D1
32 Cathode D1 B
33 Cathode D1 A
34 Cathode D1 F



Common Cathode

1 Anode D1 G
2 Anode D1 E
3 Anode D1 D
4 Anode D1 C
5 Anode D2 G
6 Anode D2 E
7 Anode D2 D
8 Anode D2 C
9 no Pin
10 Anode D3 G
11 Anode D3 E
12 Anode D3 D
13 Anode D3 C
14 Anode D4 G
15 Anode D4 E
16 Anode D4 D
17 Anode D4 C
18 Common Cathode D4
19 Anode D4 B
20 Anode D4 A
21 Anode D4 F
22 Common Cathode D3
23 Anode D3 B
24 Anode D3 A
25 Anode D3 F
26 Anode D2 Colon
27 Common Cathode D2
28 Anode D2 B
29 Anode D2 A
30 Anode D2 F
31 Common Cathode D1
32 Anode D1 B
33 Anode D1 A
34 Anode D1 F

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Ozone Depleting Substances Policy Statement

It is the policy of **Vishay Semiconductor GmbH** to

1. Meet all present and future national and international statutory requirements.

2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively

2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA

3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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