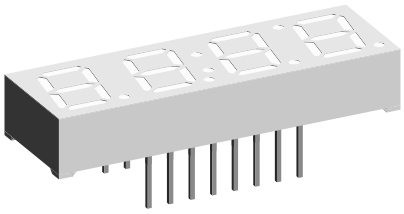
Clock Display



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FEATURES

- High efficient AlInGAP technology
- Dark surface, white segments
- Common anode (TDC.1050m)
- Common cathode (TDC.1060m)
- Multiplex mode
- Recommended viewing distance up to 7 m
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb e3 RoHS COMPLIANT

APPLICATIONS

- Clock modules for video/audioequipment, instrumentation, set top boxes

DESCRIPTION

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

PRODUCT GROUP AND PACKAGE DATA

- Product group: display
- Package: 10 mm clock
- Product series: standard
- Angle of half intensity: ± 50°

PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY AT 10 mA	CIRCUITRY
TDCG1050m	Green	I_V = (2800 to 4000) µcd	Common anode
TDCG1060m	Green	I_V = (2800 to 4000) µcd	Common cathode
TDCR1050m	Red	I_V = (4000 to 6000) µcd	Common anode
TDCR1060m	Red	I_V = (4000 to 6000) µcd	Common cathode
TDCY1050m	Super yellow	I_V = (4000 to 8000) µcd	Common anode
TDCY1060m	Super yellow	I_V = (4000 to 8000) µcd	Common cathode

ABSOLUTE MAXIMUM RATINGS (1) TDCG1050m, TDCG1060m, TDCR1050m, TDCR1060m, TDCY1050m, TDCY1060m

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage per segment		V_R	5	V
DC forward current per segment		I_F	25	mA
Peak forward current per segment	Duty 1/10 at 1 kHz	I_{FM}	160	mA
Power dissipation		P_V	60	mW
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

Note

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

OPTICAL AND ELECTRICAL CHARACTERISTICS (1) TDCG1050m, TDCG1060m, GREEN							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Luminous intensity per segment (2)	I_F = 2 mA	TDCG1050m	I_V	-	1000	-	µcd
		TDCG1060m					
	I_F = 10 mA	TDCG1050m	I_V	2800	4000	-	µcd
		TDCG1060m					
Luminous intensity of colon	I_F = 2 mA	TDCG1050m	I_V	-	200	-	µcd
		TDCG1060m					
	I_F = 10 mA	TDCG1050m	I_V	500	1200	-	µcd
		TDCG1060m					
Dominant wavelength	I_F = 20 mA	TDCG1050m, TDCG1060m	λ_d	562	573	575	nm
Peak wavelength	I_F = 20 mA		λ_p	-	575	-	nm
Spectral bandwidth	I_F = 20 mA		$\Delta\lambda$	-	20	-	nm
Forward voltage per segment or DP	I_F = 20 mA		V_F	-	2	2.4	V
Reverse current per segment or DP	V_R = 5 V		I_R	-	-	10	µA

Notes

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

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

OPTICAL AND ELECTRICAL CHARACTERISTICS (1) TDCR1050m, TDCR1060m, RED							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Luminous intensity per segment (2)	I_F = 2 mA	TDCR1050m	I_V	-	1500	-	µcd
		TDCR1060m					
	I_F = 10 mA	TDCR1050m	I_V	4000	6000	-	µcd
		TDCR1060m					
Luminous intensity of colon	I_F = 2 mA	TDCR1050m	I_V	-	400	-	µcd
		TDCR1060m					
	I_F = 10 mA	TDCR1050m	I_V	500	800	-	µcd
		TDCR1060m					
Dominant wavelength	I_F = 20 mA	TDCR1050m, TDCR1060m	λ_d	-	631	-	nm
Peak wavelength	I_F = 20 mA		λ_p	-	639	-	nm
Spectral bandwidth	I_F = 20 mA		Δ_λ	-	20	-	nm
Forward voltage per segment or DP	I_F = 20 mA		V_F	-	2	2.4	V
Reverse current per segment or DP	V_R = 5 V		I_R	-	-	10	µA

Notes

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

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

OPTICAL AND ELECTRICAL CHARACTERISTICS (1) TDCY1050m, TDCY1060m, SUPER YELLOW							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Luminous intensity per segment (2)	I_F = 2 mA	TDCY1050m TDCY1060m	I_V	-	1500	-	µcd
	I_F = 10 mA	TDCY1050m TDCY1060m	I_V	4000	8000	-	µcd
Luminous intensity of colon	I_F = 2 mA	TDCY1050m TDCY1060m	I_V	-	400	-	µcd
	I_F = 10 mA	TDCY1050m TDCY1060m	I_V	500	1000	-	µcd
Dominant wavelength	I_F = 20 mA	TDCY1050m, TDCY1060m	λ_d	-	589	-	nm
Peak wavelength	I_F = 20 mA		λ_p	-	591	-	nm
Spectral bandwidth	I_F = 20 mA		$\Delta\lambda$	-	15	-	nm
Forward voltage per segment or DP	I_F = 20 mA		V_F	-	2	2.4	V
Reverse current per segment or DP	V_R = 5 V		I_R	-	-	10	µA

Notes

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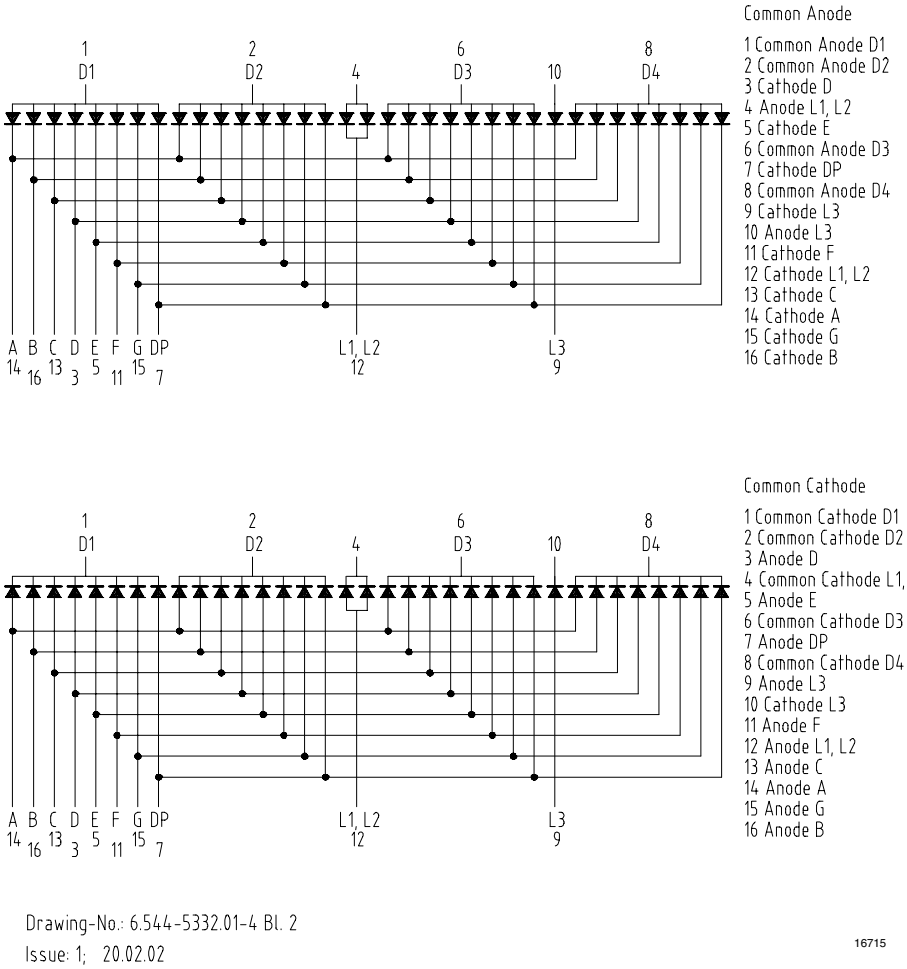
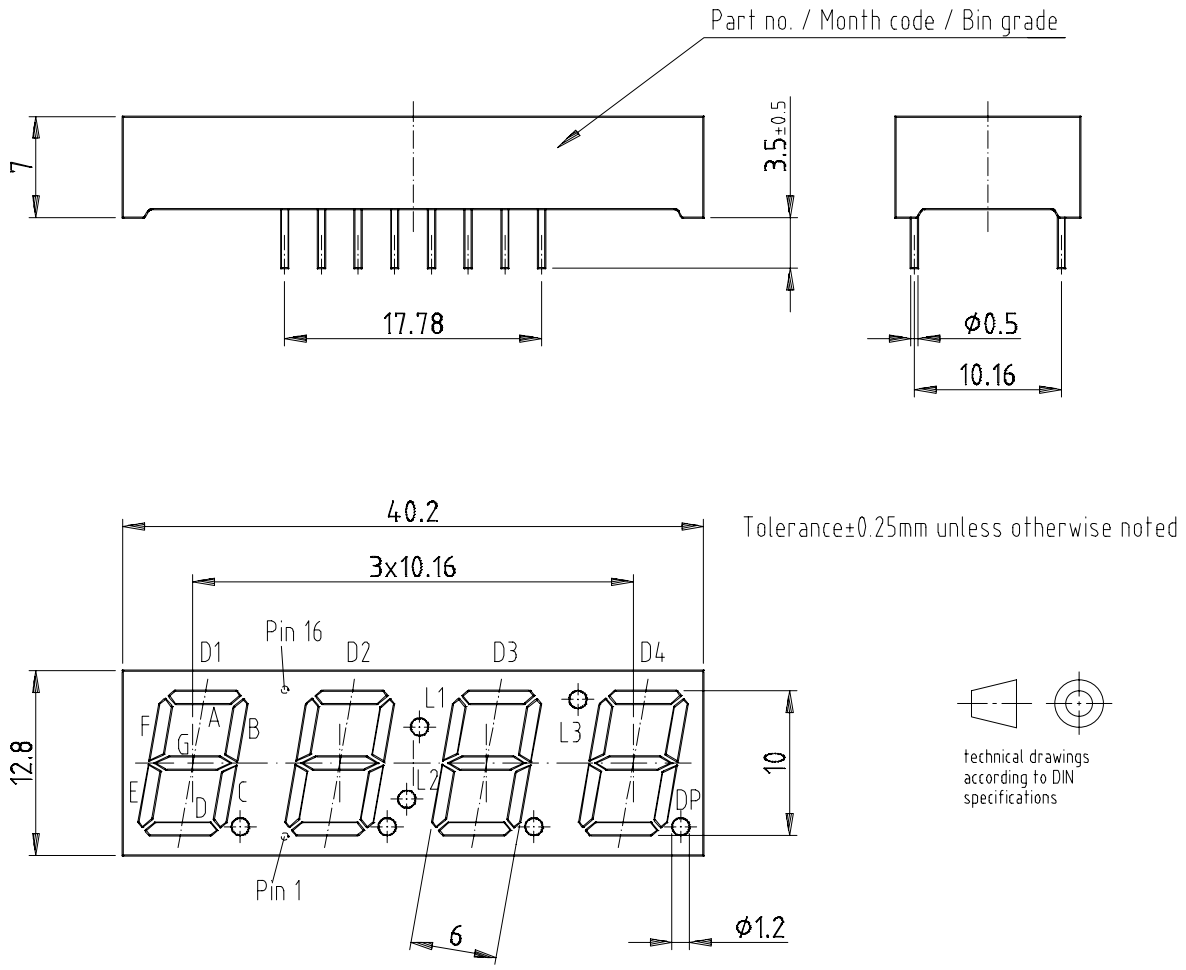
(2) $I_{Vmin.}$ and I_V groups are mean values of all segments (a to g, D1 to D4), matching factor within segments is ≥ 0.5, excluding decimal points and colon.

PINNING



PACKAGE DIMENSIONS in millimeters



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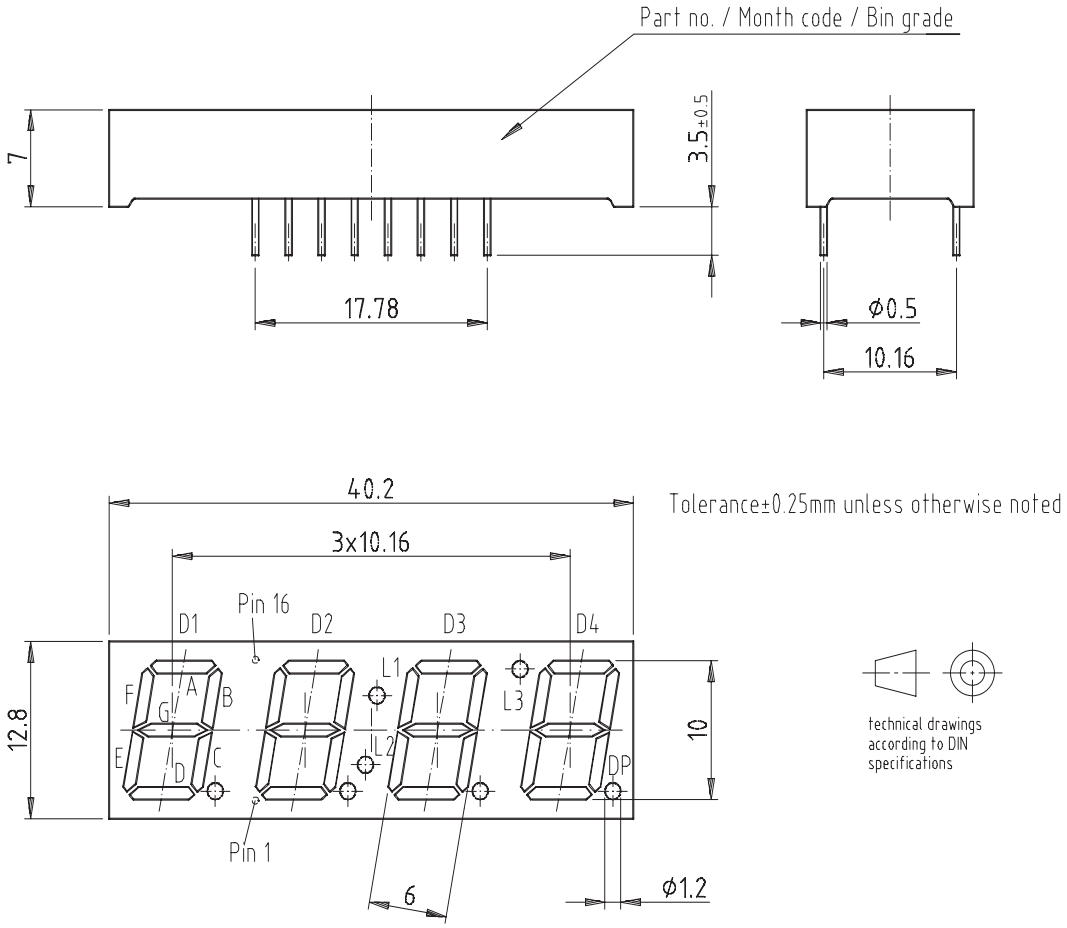
Display-10 mm Clock Multiplex

Package Dimensions in mm



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1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operatingsystems 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.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany
Telephone: 49 (0)7131 67 2831, Fax number: 49 (0)7131 67 2423

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