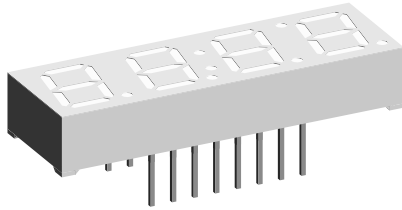


## Clock Display



16770

### DESCRIPTION

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

### 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



**RoHS**  
COMPLIANT

### APPLICATIONS

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

### PRODUCT GROUP AND PACKAGE DATA

- Product group: display
- Package: 10 mm clock
- Product series: standard
- Angle of half intensity:  $\pm 50^\circ$

### PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY AT 10 mA	CIRCUITRY
TDCG1050m	Green	$I_V = (2800 \text{ to } 4000) \mu\text{cd}$	Common anode
TDCG1060m	Green	$I_V = (2800 \text{ to } 4000) \mu\text{cd}$	Common cathode
TDCR1050m	Red	$I_V = (4000 \text{ to } 6000) \mu\text{cd}$	Common anode
TDCR1060m	Red	$I_V = (4000 \text{ to } 6000) \mu\text{cd}$	Common cathode
TDCY1050m	Super yellow	$I_V = (4000 \text{ to } 8000) \mu\text{cd}$	Common anode
TDCY1060m	Super yellow	$I_V = (4000 \text{ to } 8000) \mu\text{cd}$	Common cathode

### ABSOLUTE MAXIMUM RATINGS <sup>(1)</sup> 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	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	- 40 to + 100	$^\circ\text{C}$
Soldering temperature		$T_{sd}$	$260 \pm 5$	$^\circ\text{C}$

#### Note

<sup>(1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified



OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>(1)</sup> TDCG1050m, TDCG1060m, GREEN							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity per segment <sup>(2)</sup>	$I_F = 2 \text{ mA}$	TDCG1050m	$I_V$	-	1000	-	$\mu\text{cd}$
		TDCG1060m					
	$I_F = 10 \text{ mA}$	TDCG1050m	$I_V$	2800	4000	-	$\mu\text{cd}$
		TDCG1060m					
Luminous intensity of colon	$I_F = 2 \text{ mA}$	TDCG1050m	$I_V$	-	200	-	$\mu\text{cd}$
		TDCG1060m					
	$I_F = 10 \text{ mA}$	TDCG1050m	$I_V$	500	1200	-	$\mu\text{cd}$
		TDCG1060m					
Dominant wavelength	$I_F = 20 \text{ mA}$	TDCG1050m, TDCG1060m	$\lambda_d$	562	573	575	nm
Peak wavelength	$I_F = 20 \text{ mA}$		$\lambda_p$	-	575	-	nm
Spectral bandwidth	$I_F = 20 \text{ mA}$		$\Delta\lambda$	-	20	-	nm
Forward voltage per segment or DP	$I_F = 20 \text{ mA}$		$V_F$	-	2	2.4	V
Reverse current per segment or DP	$V_R = 5 \text{ V}$		$I_R$	-	-	10	$\mu\text{A}$

**Notes**

<sup>(1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified

<sup>(2)</sup>  $I_{Vmin.}$  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.

OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>(1)</sup> TDCR1050m, TDCR1060m, RED							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity per segment <sup>(2)</sup>	$I_F = 2 \text{ mA}$	TDCR1050m	$I_V$	-	1500	-	$\mu\text{cd}$
		TDCR1060m					
	$I_F = 10 \text{ mA}$	TDCR1050m	$I_V$	4000	6000	-	$\mu\text{cd}$
		TDCR1060m					
Luminous intensity of colon	$I_F = 2 \text{ mA}$	TDCR1050m	$I_V$	-	400	-	$\mu\text{cd}$
		TDCR1060m					
	$I_F = 10 \text{ mA}$	TDCR1050m	$I_V$	500	800	-	$\mu\text{cd}$
		TDCR1060m					
Dominant wavelength	$I_F = 20 \text{ mA}$	TDCR1050m, TDCR1060m	$\lambda_d$	-	631	-	nm
Peak wavelength	$I_F = 20 \text{ mA}$		$\lambda_p$	-	639	-	nm
Spectral bandwidth	$I_F = 20 \text{ mA}$		$\Delta\lambda$	-	20	-	nm
Forward voltage per segment or DP	$I_F = 20 \text{ mA}$		$V_F$	-	2	2.4	V
Reverse current per segment or DP	$V_R = 5 \text{ V}$		$I_R$	-	-	10	$\mu\text{A}$

**Notes**

<sup>(1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified

<sup>(2)</sup>  $I_{Vmin.}$  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.

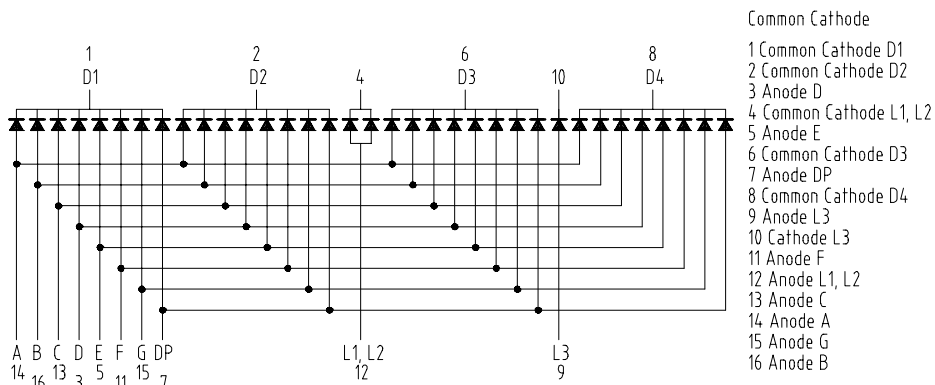
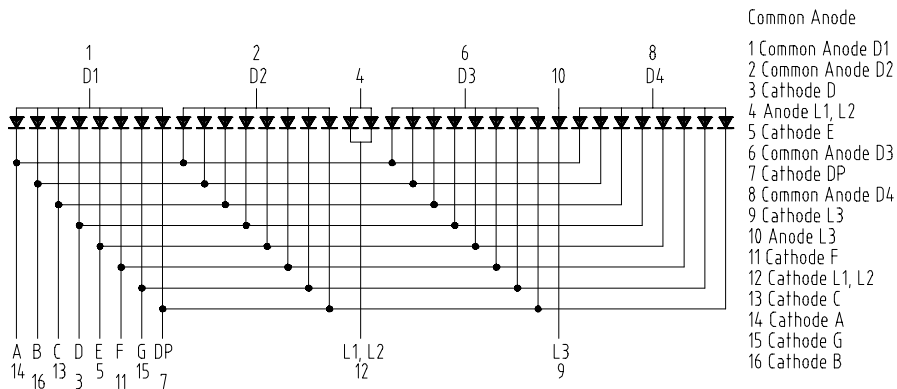
OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>(1)</sup> TDCY1050m, TDCY1060m, SUPER YELLOW							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity per segment <sup>(2)</sup>	$I_F = 2 \text{ mA}$	TDCY1050m	$I_V$	-	1500	-	$\mu\text{cd}$
		TDCY1060m					
	$I_F = 10 \text{ mA}$	TDCY1050m	$I_V$	4000	8000	-	$\mu\text{cd}$
		TDCY1060m					
Luminous intensity of colon	$I_F = 2 \text{ mA}$	TDCY1050m	$I_V$	-	400	-	$\mu\text{cd}$
		TDCY1060m					
	$I_F = 10 \text{ mA}$	TDCY1050m	$I_V$	500	1000	-	$\mu\text{cd}$
		TDCY1060m					
Dominant wavelength	$I_F = 20 \text{ mA}$	TDCY1050m, TDCY1060m	$\lambda_d$	-	589	-	nm
Peak wavelength	$I_F = 20 \text{ mA}$		$\lambda_p$	-	591	-	nm
Spectral bandwidth	$I_F = 20 \text{ mA}$		$\Delta\lambda$	-	15	-	nm
Forward voltage per segment or DP	$I_F = 20 \text{ mA}$		$V_F$	-	2	2.4	V
Reverse current per segment or DP	$V_R = 5 \text{ V}$		$I_R$	-	-	10	$\mu\text{A}$

### Notes

<sup>(1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified

<sup>(2)</sup>  $I_{Vmin.}$  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.

### PINNING



Drawing-No.: 6.544-5332.01-4 Bl. 2

Issue: 1; 20.02.02

16715

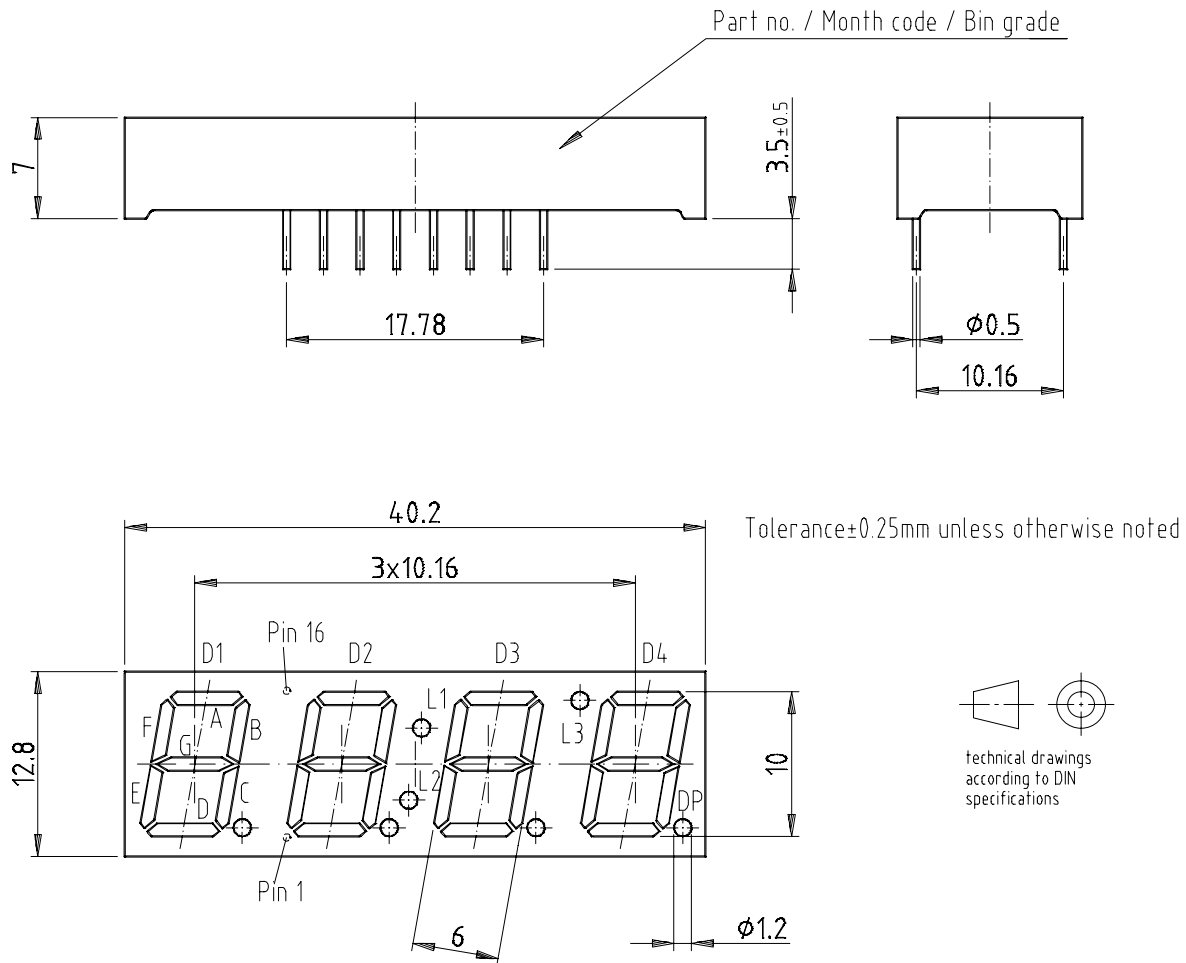
# TDCG10..m, TDCR10..m, TDCY10..m

Vishay Semiconductors

Clock Display



## PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5332.01-4 Bl. 1  
Issue: 3; 27.02.02

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