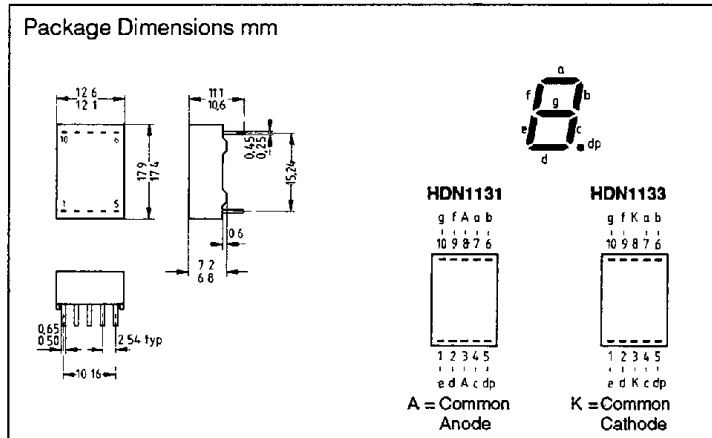
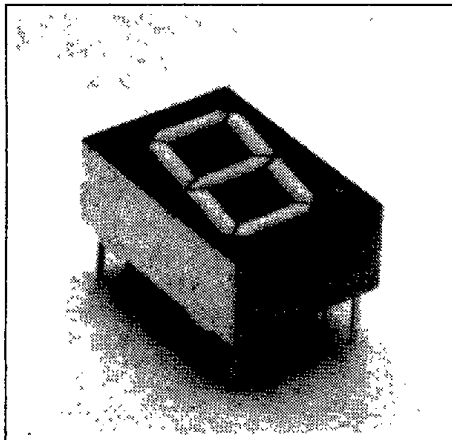


SIEMENS**SUPER-RED HDN1131/11330****GREEN HDN1131/1133G****0.59" (13 mm) SEVEN SEGMENT NUMERIC DISPLAY
LOW CURRENT**

T-41-33

**FEATURES**

- Current Consumption 2 mA
- Direct Drive by CMOS Microprocessor, Gate and LSTTL Modules
- Space Saving
- Lower Assembly Costs
- No Display and LED Driver Modules
- Good Readability in Unfavorable Lighting Conditions
- Climate-Proof
- High Packing Density
- Grey Package for Optimal Contrast
- Long Service Life
- Shock and Vibration Resistant
- Readable over Large Distances

DESCRIPTION

The HDN1131/1133 are one digit, seven segment, low current LED displays. The character height is 13 mm. The displays are available in super-red and green. Applications include state-of-the-art industrial and consumer electronics, especially where low current consumption is required, e.g. portable appliances and battery-operated appliances.

Maximum Ratings

Total Power Dissipation per Segment or Dot ¹⁾ ($T_A=80^\circ\text{C}$) (P_{TOT}) 20 mW
 Operating and Storage Temperature Range (T_{OP} , T_{STG}) -40°C to $+85^\circ\text{C}$
 Forward Current per Segment or Dot ¹⁾ (I_F) 7.5 mA
 Surge Current per Segment ¹⁾ (I_{FS} , $D \leq 0.005$) (I_{RM}) 150 mA
 Reverse Voltage (V_R) 5 V
 Thermal Resistance (R_{THJA}) 115 K/W
 Junction Temperature (T_J) 100°C

Characteristics ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Super-Red	Green	Unit
Wavelength at Peak Emission ($I_F=2\text{ mA}$)	λ_{PEAK}	635	565	nm
Dominant Wavelength ($I_F=2\text{ mA}$)	λ_{DOM}	628	567	nm
Spectral Bandwidth @ 50% I_V ($I_F=2\text{ mA}$)	$\Delta\lambda$	45	25	nm
Forward Voltage ($I_F=2\text{ mA}$)	V_F	1.8 (≤ 2.6)	1.9 (≤ 2.6)	V
Reverse Current per Segment ($V_R=5\text{ V}$)	I_R	0.01 (≤ 10)	0.01 (≤ 10)	μA
Capacitance per Segment ($V_R=0\text{ V}$, $f=1\text{ MHz}$)	C_0	3	15	pF
Switching Times ($I_F=25\text{ mA}$, $t_p=1\text{ }\mu\text{s}$)				
Rise Time from 10% to 90%	t_R	200	450	ns
Fall Time from 90% to 10%	t_F	150	200	ns
Luminous Intensity per Segment ²⁾ ($I_F=2\text{ mA}$)	I_V	600	600	μcd

Notes:

1 This value applies to an ambient temperature of $T_A \leq 80^\circ\text{C}$

2 Deviation of the absolute values within one digit $\frac{I_{V\text{ MAX}}}{I_{V\text{ MIN}}} \leq 2$.

See graph numbers 1, 2, 3D, 4B, 5B, 6D, 9, 11C on pages 25 – 27