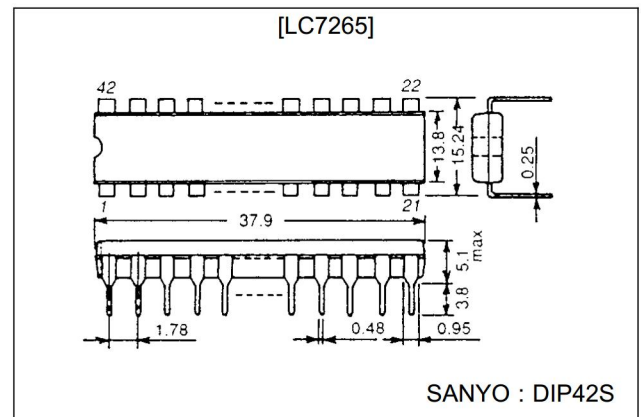


**SANYO****LC7265****Received Frequency Display for Radio Receivers****Features**

- Displays received frequency of each band of FM, MW, LW (LED static display).
- Counts local oscillation frequency and displays received frequency.
- Number of display digits : FM-5 digits, MW-4 digits, LW-3 digits.
- Covers intermediate frequencies shown below.
  - FM : +10.700, +10.725, +10.750, +10.675 MHz  
-10.700, -10.725, -10.675, -10.650 MHz
  - MW, LW : +450 kHz : 10 kHz step display  
+450 kHz : 1 kHz step display  
+455 kHz : 1 kHz step display  
+469 kHz : 1 kHz step display
- Contains blanking circuit to turn off display.
- Contains hold circuit to hold display contents.
- Uses crystal resonator having 7.2 MHz reference frequency.
- Uses LB3500 ( $\div 8$  prescaler) jointly at the time of FM reception.
- Supply voltage  $V_{DD}$  : 4.5 V to 10 V

**Package Dimensions**

unit : mm

**3025B-DIP42S****Specifications****Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$ ,  $V_{SS} = 0\text{ V}$** 

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{DD\text{ max}}$		-0.3 to +11	V
Input voltage	$V_{IN}$	All input pins	-0.3 to $V_{DD}+0.3$	V
Output voltage	$V_{O1}$	$X_{OUT}$ , $\overline{HLD}$ , 50 Hz, output: off	-0.3 to $V_{DD}+0.3$	V
	$V_{O2}$	Output pins other than $V_{O1}$	0 to 15	V
Allowable power dissipation	$P_d\text{ max}$	$T_a \leq 65^\circ\text{C}$	550	mW
Allowable power dissipation of segment outputs	$P_d\text{ (seg)1}$	MHZ, b&c, b&e, $V_{DD} = 4.5\text{ to }6.5\text{ V}$ , $I_{OL} = 33\text{ mA}$	30	mW
	$P_d\text{ (seg) 2}$	Other outputs, $V_{DD} = 4.5\text{ to }6.5\text{ V}$ , $I_{OL} = 16.5\text{ mA}$	15	mW
	$P_d\text{ (seg) 3}$	MHZ, b&c, b&e, $V_{DD} = 6.0\text{ to }10\text{ V}$ , $I_{OL} = 36\text{ mA}$	25	mW
	$P_d\text{ (seg) 4}$	Other outputs, $V_{DD} = 6.0\text{ to }10\text{ V}$ , $I_{OL} = 18\text{ mA}$	12	mW
Operating temperature	$T_{opr}$		-30 to +65	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to +125	$^\circ\text{C}$

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63098HA(II)/6088YT/9105KI/3173KI/D162KI/7162KI/6242KI, TS No.1197-1/6

# LC7265

## Allowable Operating Ranges at Ta = 25 °C, VDD = 4.5 to 10 V, VSS = 0 V

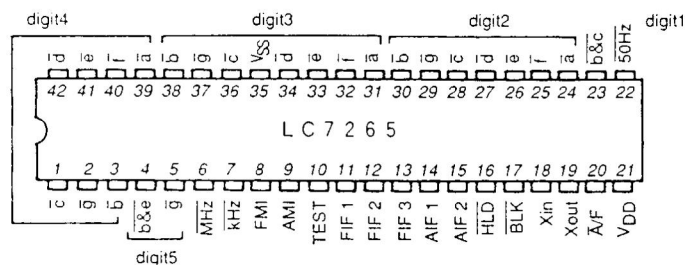
Parameter	Symbol	Conditions	min	typ	max	Unit
Supply voltage	VDD		4.5		10	V
Input high-level voltage	VIH1	$\bar{A}/F$ , BLK	0.7VDD		VDD	V
	VIH2	FIF1, FIF2, FIF3, AIF1, AIF2	0.9VDD		VDD	V
Input low-level voltage	VIL1	$\bar{A}/F$ , BLK	0		0.3VDD	V
	VIL2	FIF1, FIF2, FIF3, AIF1, AIF2	0		0.1VDD	V
Input frequency	fIN1	FMI, sine wave, capacitive coupling, VIN1 = 0.7Vp-p	1		18	MHz
	fIN2	AMI, sine wave, capacitive coupling, VIN2 = 0.5Vp-p*	0.5		3	MHz
	fIN3	XIN	0.2		7.5	MHz
Input amplitude	VIN1	FMI, sine wave, capacitive coupling, fIN1 = 1 to 18 MHz	0.7		0.9VDD	Vp-p
	VIN2	AMI, sine wave, capacitive coupling, fIN2 = 0.5 to 3 MHz	0.5*		0.9VDD	Vp-p
	VIN3	XIN, sine wave, capacitive coupling, fIN3 = 0.2 to 7.5 MHz	1.0		0.9VDD	Vp-p
Segment current	Iseg1	MHz, b&e, b&c	0		30	mA
	Iseg2	Other outputs	0		15	mA

\*: For fIN2 = 0.5 MHz to 0.9 MHz and VDD = 8 to 10 V, VIN2 min = 1.0 Vp-p applies.

## Electrical Characteristics at Ta = 25 °C, VDD = 4.5 to 10 V, VSS = 0 V

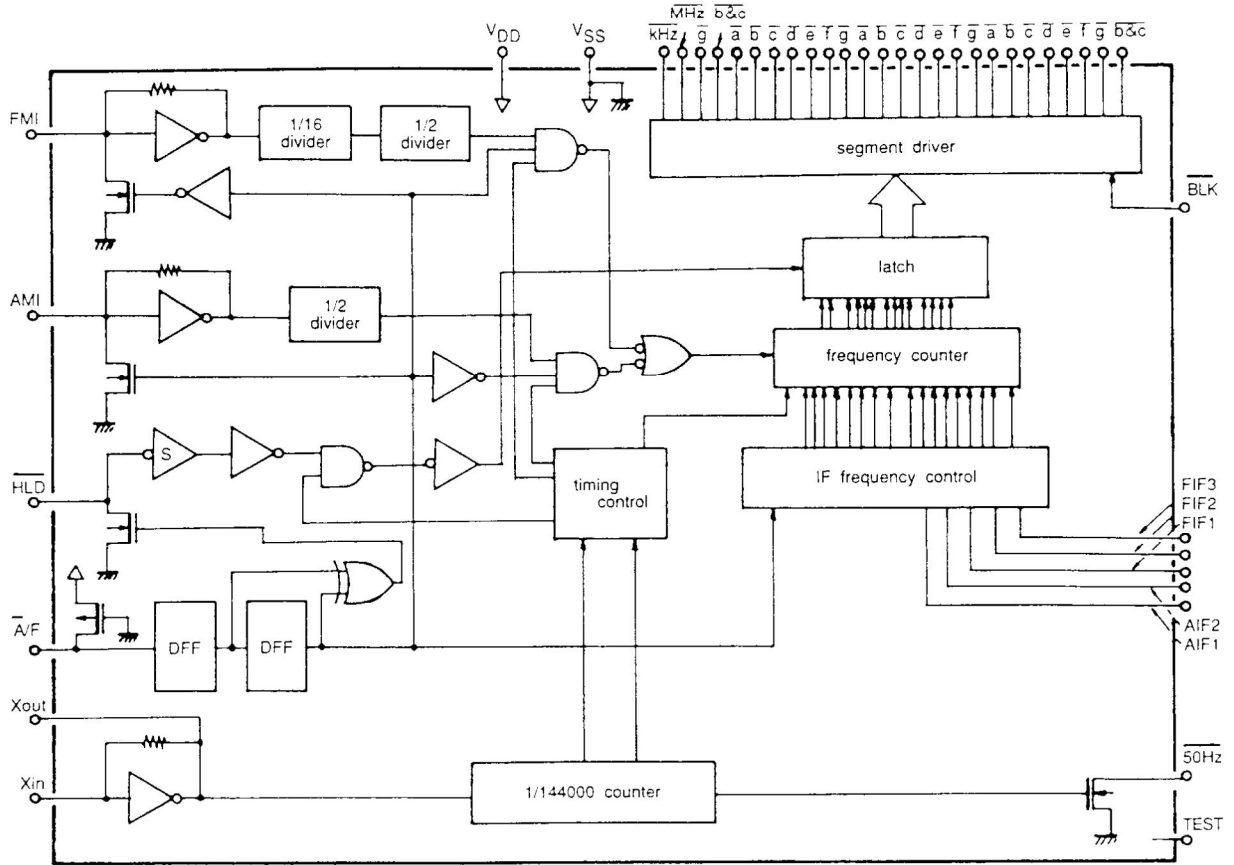
Parameter	Symbol	Conditions	min	typ	max	Unit
Input high-level current	I <sub>IH1</sub>	FIF1, FIF2, FIF3, AIF1, AIF2 V <sub>I</sub> = VDD	0		10	μA
	I <sub>IH2</sub>	BLK V <sub>I</sub> = VDD	0		2	μA
Input low-level current	I <sub>IL1</sub>	FIF1, FIF2, FIF3, AIF1, AIF2 V <sub>I</sub> = VSS	0		10	μA
	I <sub>IL2</sub>	BLK V <sub>I</sub> = VSS	0		2	μA
	I <sub>IL3</sub>	$\bar{A}/F$ V <sub>I</sub> = VSS	20		500	μA
Input floating voltage	V <sub>IF</sub>	$\bar{A}/F$ V <sub>I</sub> = open	0.8VDD		VDD	V
Input/output high-level leakage current	I <sub>OFF</sub>	HLD, output off, V <sub>I</sub> = VDD	0		2	μA
Output low-level voltage	V <sub>OL1</sub>	HLD, output on, I <sub>O</sub> = 1 mA	0		1	V
	V <sub>OL2</sub>	b&e, b&c, MHz VDD = 4.5 to 10 V, I <sub>OL</sub> = 30 mA	0		0.7	V
	V <sub>OL3</sub>	Segments other than above VDD = 4.5 to 10 V, I <sub>OL</sub> = 15 mA	0		0.7	V
	V <sub>OL4</sub>	50 Hz, I <sub>O</sub> = 0.2 mA	0		1.0	V
Input high-level threshold voltage	V <sub>th</sub>	HLD	0.4VDD	0.5VDD	0.7VDD	V
Output off leakage current	I <sub>OFF2</sub>	All segments output pins, V <sub>O</sub> = 13 V, output off	0		10	μA
Current drain	I <sub>DD</sub>	FM mode, $\bar{A}/F$ = open or VDD, fIN1 = 18 MHz, 0.7Vp-p or (AM mode, $\bar{A}/F$ = VSS, fIN2 = 3 MHz, 0.5Vp-p) fIN3 = 7.2 MHz, 1Vp-p FIF1, FIF2, FIF3 = VDD AIF1, AIF2 = VDD HLD, BLK = VDD other pins open	0		18	mA

## Pin Assignment



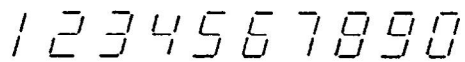
Top view

Equivalent Circuit Block Diagram



1. Display

1-1 Display font



1-2 Lighting system

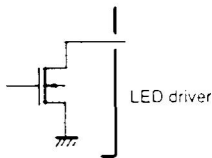
- Static lighting

1-3 Display range (High-order 1 digit : zero blanking)

- FM : 00.00 MHz to 199.95 MHz 50 kHz step
- MW, LW : 000 kHz to 1999 kHz 10 kHz or 1 kHz step

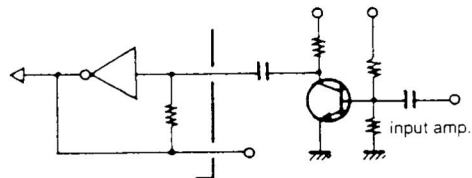
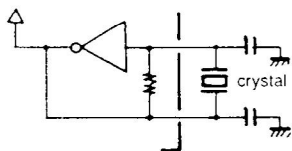
2. Pin Description

2-1 • a to g, b&c, b&e, MHz, kHz : LED



2-2 • V<sub>DD</sub>, V<sub>SS</sub> : Power supply pins

2-3 • X<sub>IN</sub>, X<sub>OUT</sub> : Crystal resonator or input amp pin



# LC7265

2-4 • FIF1, FIF2, FIF3 : FM IF select pins

FIF1	0	0	0	0	1	1	1	1
FIF2	0	0	1	1	0	0	1	1
FIF3	0	1	0	1	0	1	0	1
IF (MHz)	+10.700	+10.725	+10.675	+10.750	-10.700	-10.725	-10.675	-10.650

2-5 • AIF1, AIF2 : AM IF select pins

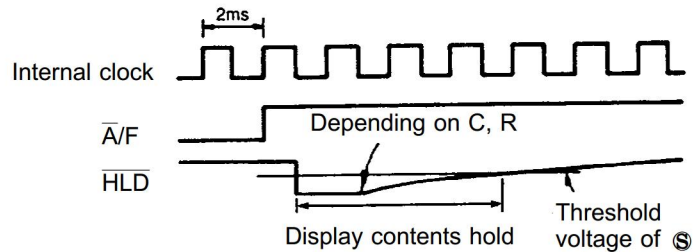
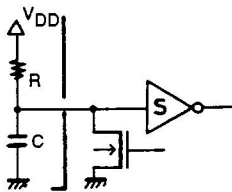
AIF1	0	0	1	1
AIF2	0	1	0	1
IF (kHz)	+450 (2)	+450 (1)	+455	+469

1 : High level ( $V_{DD}$ )  
0 : Low level ( $V_{SS}$ )

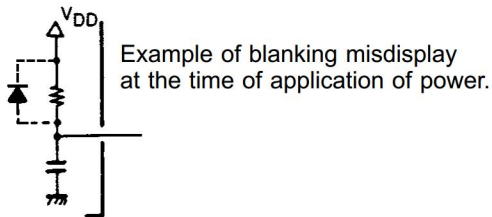
(Note) 450 kHz(1) : 10 kHz step display, others : 1 kHz step display

2-6 •  $\overline{HLD}$  : Display contents hold pin

Normally, this pin is set at high level. To hold display contents, this pin is set at low level. Connecting time constant circuit to this pin makes it possible to hold display contents for a certain period of time at the time of FM/MW, LW band selection.



2-7 •  $\overline{BLK}$  : Display blanking pin



2-8 • FMI, AMI : Local oscillation signal input pins

FMI — For FM : 0.7Vp-p input sensitivity

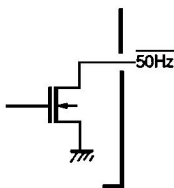
AMI — For MW, LW : 1.0Vp-p input sensitivity ( $V_{DD} = 8$  to  $10$  V,  $f_{IN} = 0.5$  to  $0.9$  MHz)  
0.5Vp-p input sensitivity (other than above)

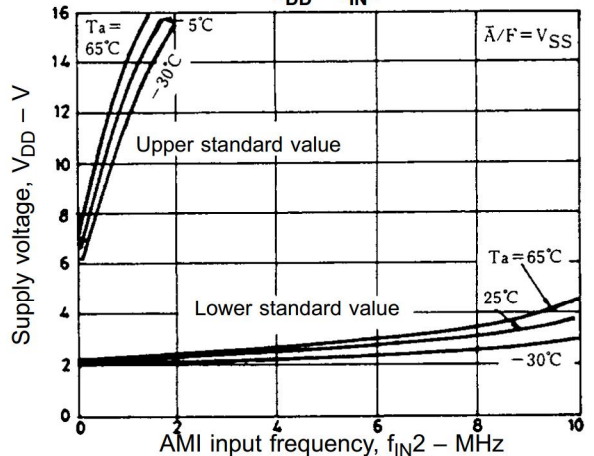
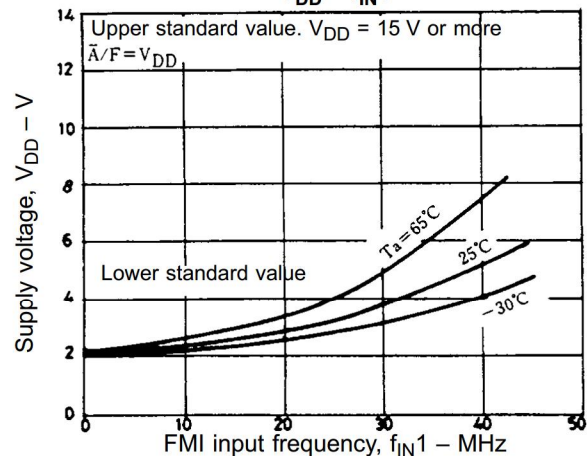
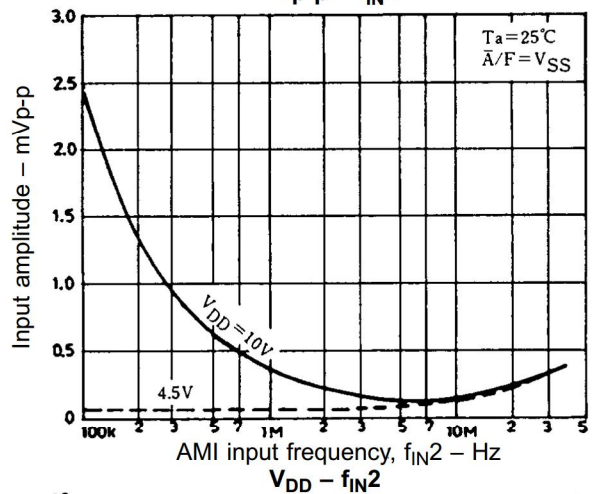
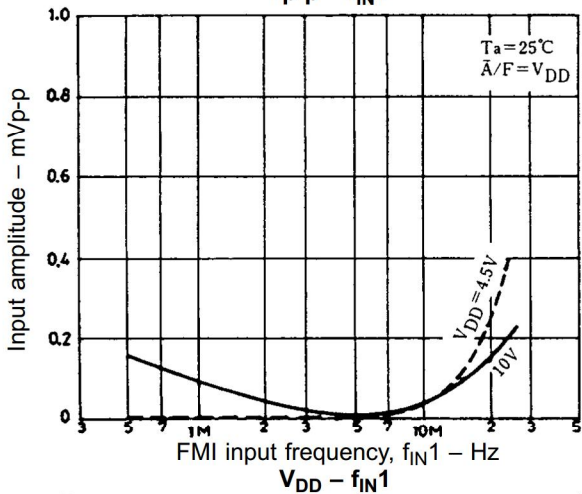
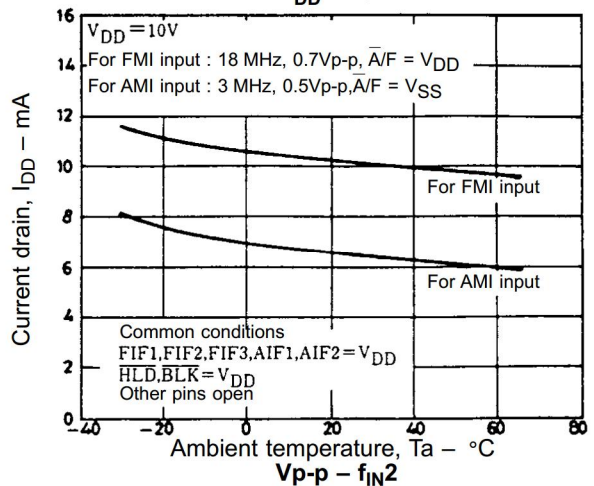
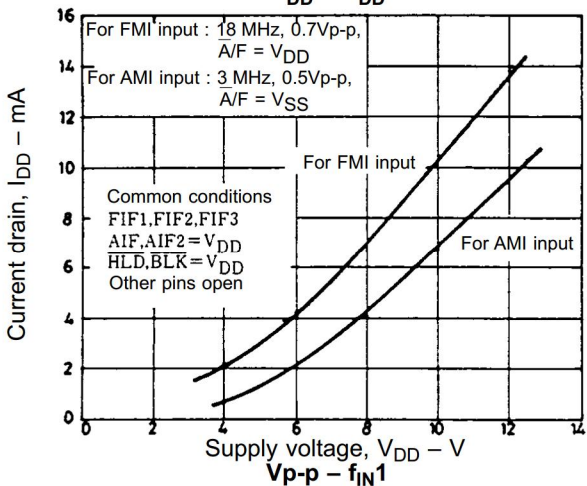
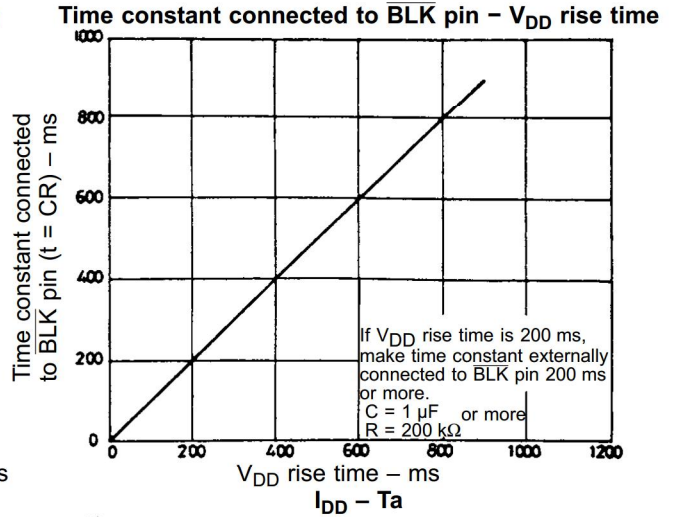
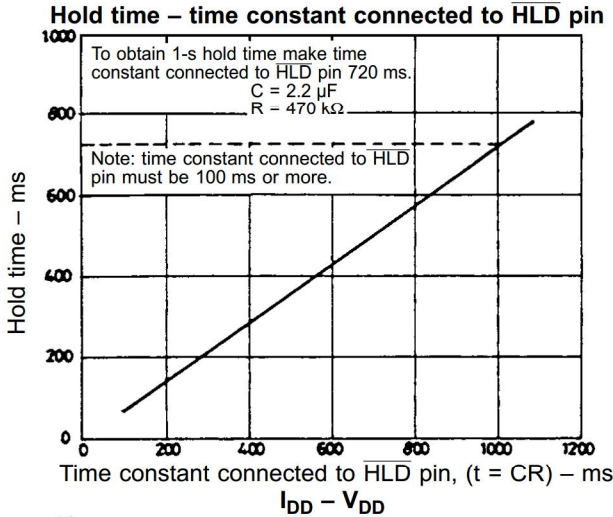
2-9 •  $\overline{A/F}$  : FM/MW, LW select pin

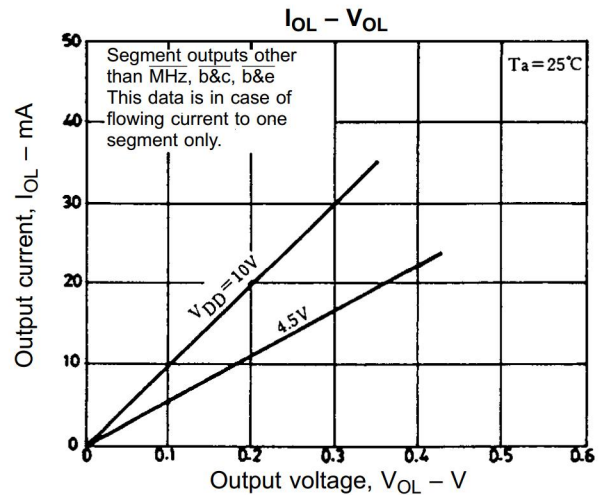
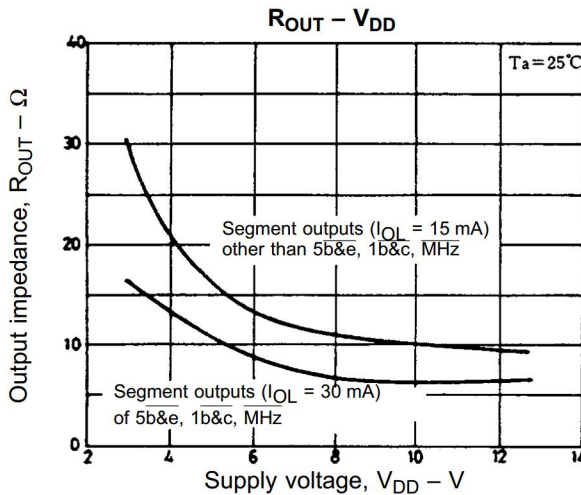
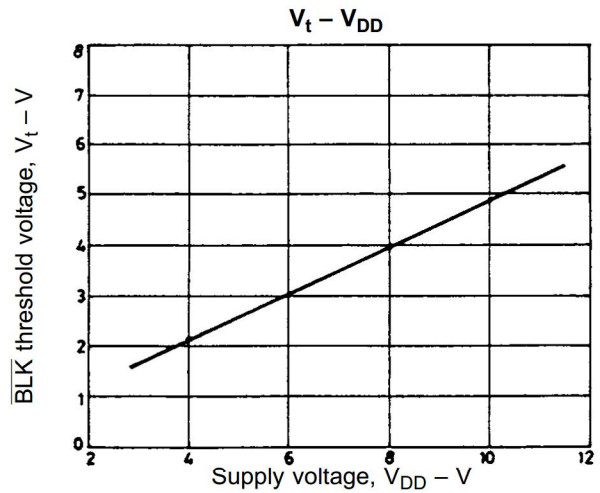
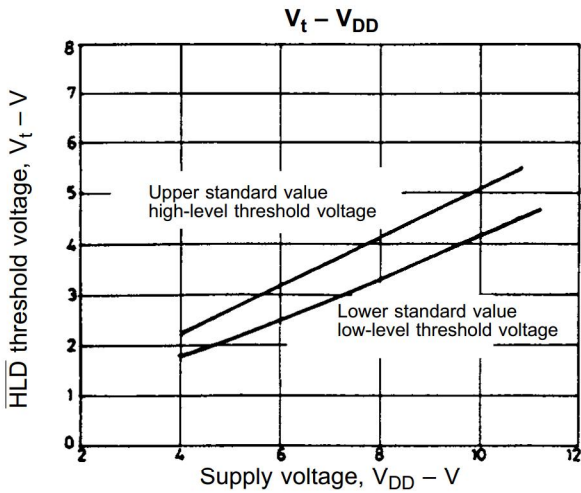
FM — Pin open or high level

MW, LW — Low level

2-10 • 50 Hz : 50 Hz time base output pin







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