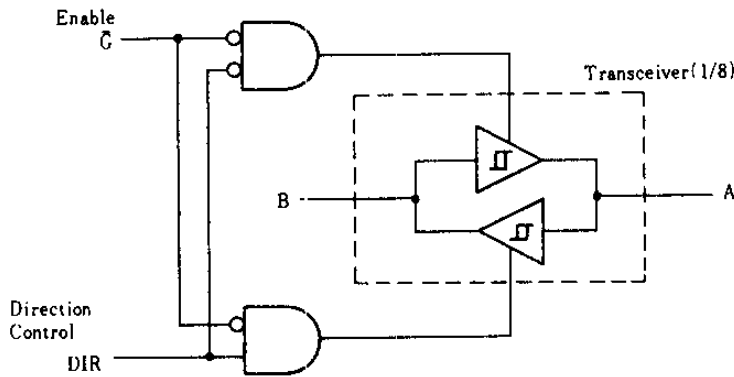


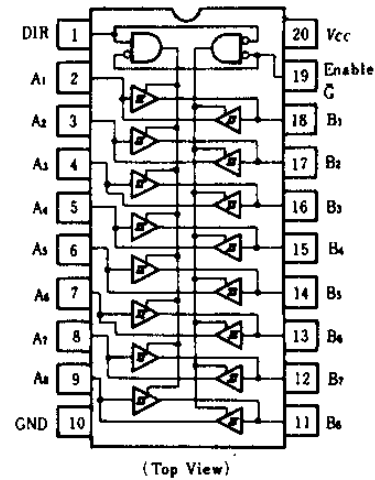
HD74LS245 ● Octal Bus Transceivers (with three-state outputs)

This octal bus transceiver is designed for synchronous two-way communication between data buses. The control function implementation minimizes external timing requirements. The device allows data transmission from the A bus to the B bus or from the B bus to the A bus depending upon the logic level at the direction control (DIR) input. The enable input (\bar{G}) can be used to disable the device so that the buses are effectively isolated.

■ BLOCK DIAGRAM



■ PIN ARRANGEMENT



■ FUNCTION TABLE

ENABLE \bar{G}	DIRECTION CONTROL DIR	OPERATION
L	L	B data to A bus
L	H	A data to B bus
H	X	Isolation

H; high level,
L; low level,
X; irrelevant

■ ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Ratings	Unit
Supply voltage	V_{CC}	7.0	V
Input voltage	DIR, \bar{G}	7.0	V
	A, B	5.5	
Operating temperature range	T_{opr}	-20 ~ +75	°C
Storage temperature range	T_{str}	-65 ~ +150	°C

■ RECOMMENDED OPERATING CONDITIONS

Item	Symbol	min	typ	max	Unit
Output current	I_{OH}	-	-	-15	mA
	I_{OL}	-	-	24	mA

HD74LS245

ELECTRICAL CHARACTERISTICS ($T_a = -20 \sim +75^\circ\text{C}$)

Item	Symbol	Test Conditions	min	typ*	max	Unit	
Input voltage	V_{IH}		2.0	—	—	V	
	V_{IL}		—	—	0.8		
Hysteresis	$V_T^+ - V_T^-$	$V_{CC} = 4.75\text{V}$	0.2	0.4	—	V	
Output voltage	V_{OH}	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$, $V_{IL} = 0.8\text{V}$	$I_{OH} = -3\text{mA}$	2.4	—	—	V
			$I_{OH} = -15\text{mA}$	2	—	—	
	V_{OL}	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$, $V_{IL} = 0.8\text{V}$	$I_{OL} = 12\text{mA}$	—	—	0.4	V
			$I_{OL} = 24\text{mA}$	—	—	0.5	
Output current	I_{OZH}	$V_{CC} = 5.25\text{V}$			10	μA	
	I_{OZL}	$\bar{G} = 2\text{V}$			-200		
Input current		$V_{CC} = 5.25\text{V}$, $V_I = 2.7\text{V}$	I_{IH}	—	—	20	μA
			I_{IL}	$V_{CC} = 5.25\text{V}$, $V_I = 0.4\text{V}$	—	—	-0.2
	A or B DIR or \bar{G}	$V_{CC} = 5.25\text{V}$	$V_I = 5.5\text{V}$	—	—	0.1	mA
			$V_I = 7\text{V}$	—	—	0.1	
Short-circuit output current	I_{OS}	$V_{CC} = 5.25\text{V}$	-40	—	-225	mA	
Supply current**	I_{CCH}		—	48	70	mA	
	I_{CCL}	$V_{CC} = 5.25\text{V}$	—	62	90		
	I_{CCZ}		—	64	95		
Input clamp voltage	V_{IK}	$V_{CC} = 4.75\text{V}$, $I_{IN} = -18\text{mA}$	—	—	-1.5	V	

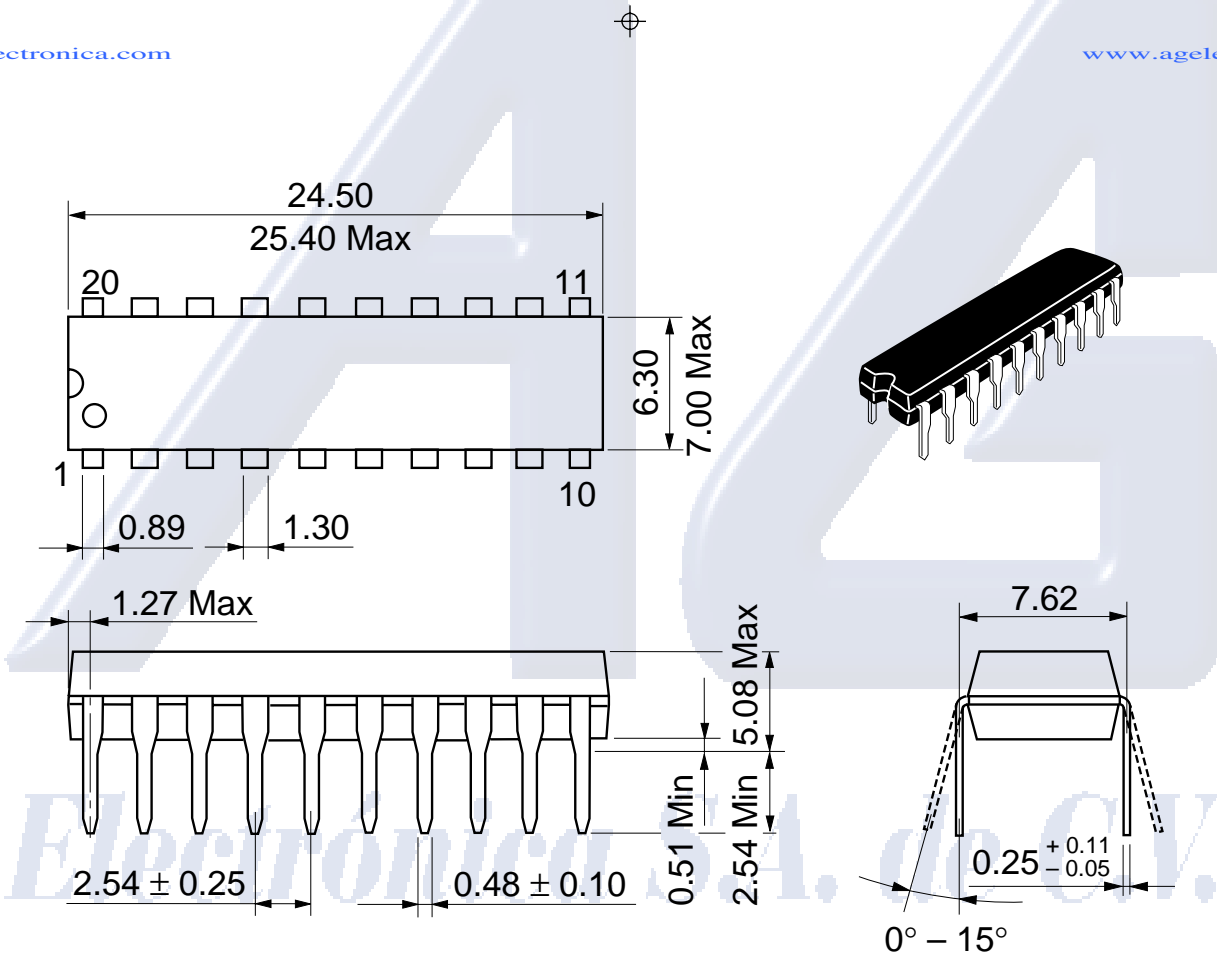
* $V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$ ** I_{CC} is measured with all outputs open.

SWITCHING CHARACTERISTICS ($V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$)

Item	Symbol	Test Conditions	min	typ	max	Unit
Propagation delay time	t_{PLH}	$C_L = 45\text{pF}$	—	8	15	ns
	t_{PHL}		—	8	15	
Output enable time	t_{ZL}	$R_L = 667\ \Omega$	—	27	40	
	t_{ZH}		—	25	40	
Output disable time	t_{LZ}	$C_L = 5\text{pF}$	—	15	25	
	t_{HZ}		$R_L = 667\ \Omega$	—	15	

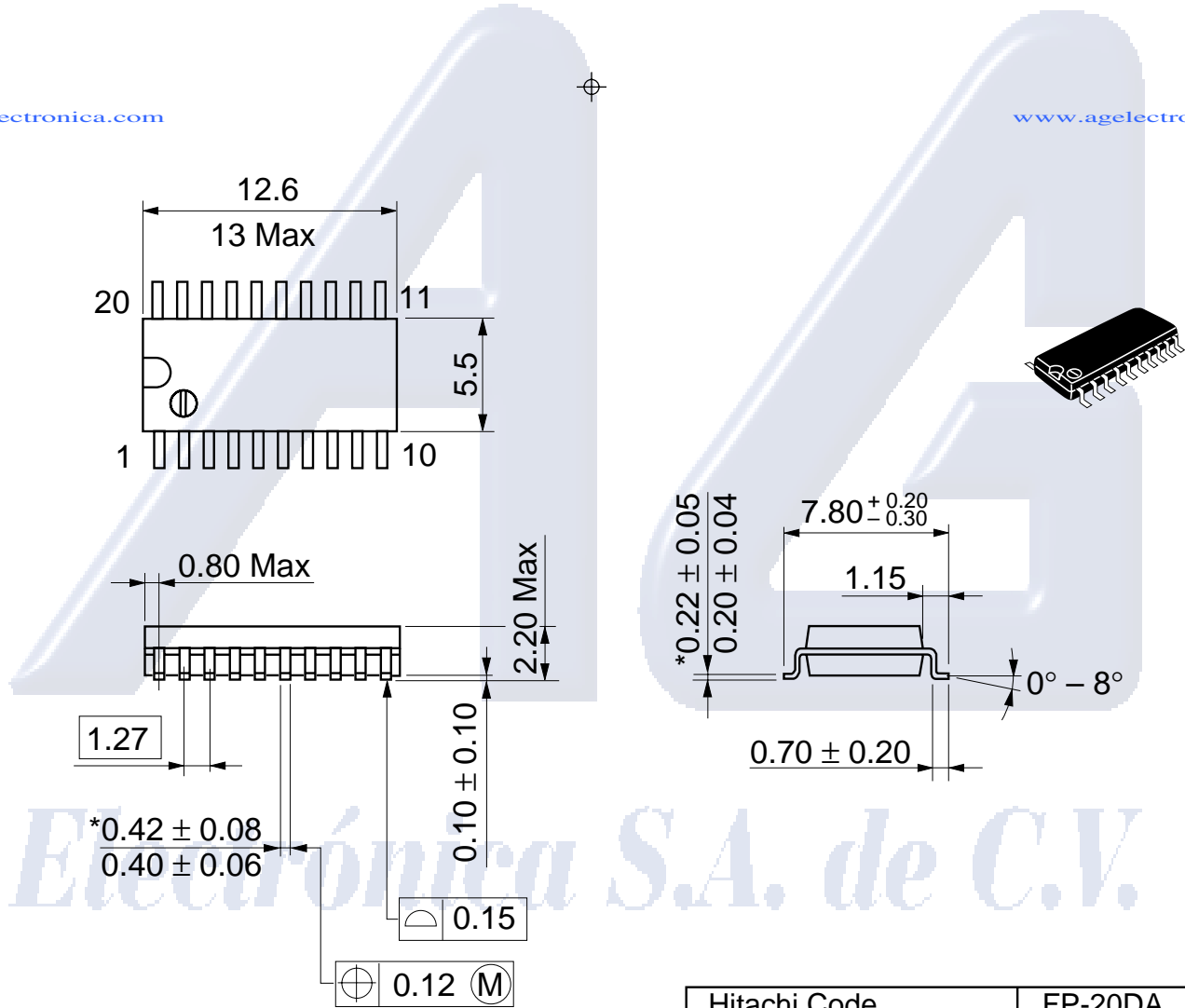
Note) Refer to Test Circuit and Waveform of the Common Item

Unit: mm



Hitachi Code	DP-20N
JEDEC	—
EIAJ	Conforms
Weight (reference value)	1.26 g

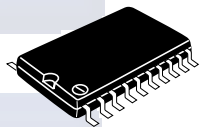
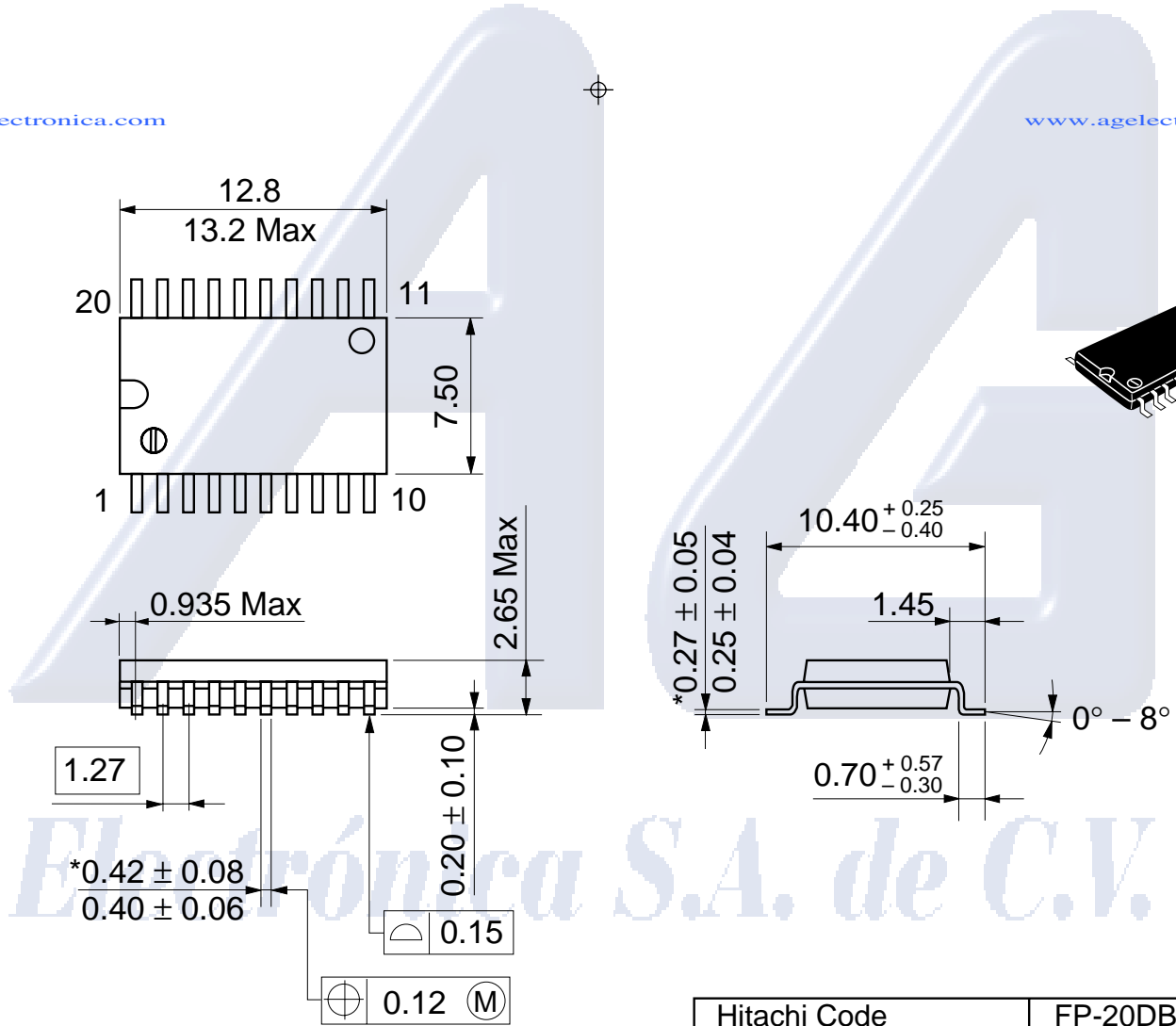
Unit: mm



*Dimension including the plating thickness
 Base material dimension

Hitachi Code	FP-20DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.31 g

Unit: mm



Hitachi Code	FP-20DB
JEDEC	Conforms
EIAJ	—
Weight (reference value)	0.52 g

*Dimension including the plating thickness
 Base material dimension

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