

# Microprocessor TLCS-Z80 Family

## General Description

The TLCS-Z80 are a family of 8-bit microprocessor LSIs which are produced using Toshiba's latest CMOS silicon gate process. To satisfy the needs of higher performance, more compactness and lightness for electronic equipment applications, a variety of these LSIs is available. For example, (1) high-speed 6MHz, 8MHz products; (2) low power consumption; (3) diversified packages: DIP, SOP, PLCC; (4) expanded functions: composite LSIs (ASSP), etc.

The TLCS-Z80 ASSP microprocessors contain the TLCS-Z80 MPU and various peripheral LSIs (CTC, PIO, SIO, CGC, etc.) on one chip. These products' features are as follows: low power dissipation; high-speed operation; wide operation power supply and temperature range.

## • TLCS-Z80 Family (CMOS)

Type No.	Function	Minimum instruction execution time (μs)	Typical power supply current (mA)	Package (no. of pins)			
				DIP	MFP	PLCC	SOP
TMPZ84C00A□-6 TMPZ84C00A□-8	Microprocessor (6/8MHz)	0.6/0.5	15/20	40	—	44	40
TMPZ84C01F	CPU + CGC(4MHz)	1.0	15	—	44	—	—
TMPZ84C02F-6	CPU + CGC(6MHz)	0.6	20	—	44	—	—
TMPZ84C10A□-6	Direct memory access controller (6MHz)		6	40	—	44	40
TMPZ84C20A□-6 TMPZ84C20A□-8	Parallel I/O controller (6/8MHz)		3/4	40	—	44	40
TMPZ84C30A□-6 TMPZ84C30A□-8	Counter timer circuit (6/8MHz)		4/5	28	—	44	28
TMPZ84C40A□-6 TMPZ84C40A□-8	Serial I/O 0 controller (6/8MHz)		4/5	40	—	—	40
TMPZ84C41A□-6 TMPZ84C41A□-8	Serial I/O 1 controller (6/8MHz)		4/5	40	—	—	40
TMPZ84C42A□-6 TMPZ84C42A□-8	Serial I/O 2 controller (6/8MHz)		4/5	40	—	—	40
TMPZ84C43AF-6	Serial I/O controller (6MHz)		4	—	44	—	—
TMPZ84C44AT-6	Serial I/O controller (6MHz)		4	—	—	44	—
TMPZ84C61AP-6	Clock generator controller (6MHz)		3	16	—	—	—

(Notes) Operating temperature: 0 to 85°C, Power supply voltage: 4.5 to 5.5V

□ Package type - P: Plastic Standard DIP (DIP) F: Plastic Mini Flat Package (MFP) T: Plastic Leaded Chip Carrier (PLCC)  
M: Plastic Small Outline Package (SOP)

## • TLCS-Z80 ASSP Family

Type No.	Function	Minimum instruction execution time (μs)	Typical power supply current (mA)	Package (no. of pins)		
				DIP	QFP	PLCC
TMPZ84C011AF-6 TMPZ84C011AF-8	CPU + CTC + CGC(6/8MHz) + I/O <sub>8</sub> × 5	0.6/0.5	22	—	100	—
TMPZ84C013AT-6 TMPZ84C013AT-8	CPU + SIO + CTC + CGC(6/8MHz) + WDT	0.6/0.5	22	—	—	84
TMPZ84C015AF-6 TMPZ84C015AF-8	CPU + SIO + CTC + CGC(6/8MHz) + PIO + WDT	0.6/0.5	25	—	100	—
TMPZ84C112AN-6 TMPZ84C112AF-6	CPU + 256-bit RAM + I/O(8 × 2.5 × 1)	0.6	25	64	64	—
TMPZ84C710AG-6	Basic interface control processor conforming to CCITT	0.6	30/40	—	144	—
TMPZ84C810AF-6 * TMPZ84C810AF-8	CPU + SIO + CTC + CGC(6/8MHz) + DMA + MMU + WDT	0.6	TBD	—	100	—

(Notes) \*: Under development, Operating temperature: -40 to 85°C, Power supply voltage: 4.5 to 5.5V

Package types - F: Plastic Flat Package (QFP), T: Plastic Leaded Chip Carrier (PLCC),  
N: Plastic Shrink DIP (SDIP), G: Ceramic Flat Package (QFP)

## TLCS-85 Family (CMOS)

Type No.	Function	Typical power supply current (mA)	Remarks	Package (no. of pins)			
				DIP	QFP	PLCC	SOP
TMP82C37A□-5 * TMP82C37B□-8	Programmable DMA Controller	5/TBD	5/8MHz	40	—	44	40
TMP82C51A□-2 TMP82C51A□-10	Programmable Communication Interface	1.2/3	5/10MHz	28	—	—	28
TMP82C54□-2	Programmable Interval Timer	3	10MHz	24	—	—	24
TMP82C55A□-2 TMP82C55A□-10	Programmable Peripheral Interface	2/2	5(TRD = 140ns)/10(TRD = 100ns)	40	—	44	40
TMP82C59A□-2	Programmable Interrupt Controller	1	8(TRD = 120ns)	28	—	—	28
TMP82C79□-2	Programmable Keyboard Display Interface	2	5	40	—	—	40
TMP82C255AN-2 TMP82C255AN-10	Programmable Peripheral Interface x 2	3/3	5(TRD = 140ns)/10(TRD = 100ns)	64	—	—	—
TMP82C265AF-2 TMP82C265AF-10	Programmable Peripheral Interface x 2	3/3	5(TRD = 140ns)/10(TRD = 100ns)	—	80	—	—

(Notes) \*: Under development, Operating temperature: -40 to 85°C, Power supply voltage: 4.5 to 5.5V

□: Package type - P: Plastic Standard DIP (SDIP), F: Plastic Flat Package (QFP), N: Plastic Shrink DIP (DIP), M: Plastic Small Outline Package (SOP), T: Plastic Leaded Chip Carrier (PLCC)