intel®

MCS®-48
EXPRESS

- **0°C to 70°C Operation**
- **−40°C to +85°C Operation**
- **168 Hr. Burn-In**

- **8048AH/8035AHL**
- **8049AH/8039AHL**
- **8050AH/8040AHL**

- **8748H**
- **8243**
- **8749H**

The new Intel EXPRESS family of single-component 8-bit microcomputers offers enhanced processing options to the familiar 8048AH/8035AHL, 8748H, 8049AH/8039AHL, 8749H, 8050AH/8040AHL Intel components. These EXPRESS products are designed to meet the needs of those applications whose operating requirements exceed commercial standards, but fall short of military conditions.

The EXPRESS options include the commercial standard and −40°C to +85°C operation with or without 168 ±8 hours of dynamic burn-in at 125°C per MIL-STD-883, method 1015. Figure 1 summarizes the option marking designators and package selections.

For a complete description of 8048AH/8035AHL, 8748H, 8049AH/8309AHL, 8749H, 8040AHL and 8050AH features and operating characteristics, refer to the respective standard commercial grade data sheet. This document highlights only the electrical specifications which differ from the respective commercial part.

Temp Range °C	0−70	−40−+85	0−70	−40−+85
Burn In	**0 Hrs**	**0 Hrs**	**168 Hrs**	**168 Hrs**
	P8048AH	TP8048AH	QP8048AH	LP8048AH
	D8048AH	TD8048AH	QD8048AH	LD8048AH
	D8748H	TD8748H	QD8748H	LD8748H
	P8035AHL	TP8035AHL	QP8035AHL	LP8035AHL
	D8035AHL	TD8035AHL	QD8035AHL	LD8035AHL
	P8049AH	TP8049AH	QP8049AH	LP8049AH
	D8049AH	TD8049AH	QD8049AH	LD8049AH
	D8749H	TD8749AH	QD8749H	LD8749AH
	P8039AHL	TP8039AHL	QP8039AHL	LP8039AHL
	D8039AHL	TD8039AHL	QD8039AHL	LD8039AHL
	P8050AH	TP8050AH	QP8050AH	LP8050AH
	D8050AH	TD8050AH	QD8050AH	LD8050AH
	P8040AHL	TP8040AHL	QP8040AHL	LP8040AHL
	D8040AHL	TD8040AHL	QD8040AHL	LD8040AHL
	P8243	TP8243	QP8243	—
	D8243	TD8243	QD8243	LD8243

* Commercial Grade
P Plastic Package
D Cerdip Package

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Extended Temperature Electrical Specification Deviations*

TP8048AH/TP8035AHL/LP8048AH/LP8035AHL
TD8048AH/TD8035AHL/LD8048AH/LD8035AHL

D.C. CHARACTERISTICS $T_A = -40°C$ to $+85°C$; $V_{CC} = V_{DD} = 5V \pm 10\%$; $V_{SS} = 0V$

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	**Typ**	**Max**		
V_{IH}	Input High Voltage (All Except XTAL1, XTAL2, $\overline{RESET}$)	2.2		V_{CC}	V	
I_{DD}	V_{DD} Supply Current		4	8	mA	
$I_{DD} + I_{CC}$	Total Supply Current		40	80	mA	

TP8049AH/TP8039AHL/LP8049AH/LP8039AHL
TD8049AH/TD8039AHL/LD8049AH/LD8039AHL

D.C. CHARACTERISTICS $T_A = -40°C$ to $+85°C$; $V_{CC} = V_{DD} = 5V \pm 10\%$; $V_{SS} = 0V$

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	**Typ**	**Max**		
V_{IH}	Input High Voltage (All Except XTAL1, XTAL2, $\overline{RESET}$)	2.2		V_{CC}	V	
I_{DD}	V_{DD} Supply Current		5	10	mA	
$I_{DD} + I_{CC}$	Total Supply Current		50	100	mA	

TP8050AH/TP8040AHL/LP8050AHL/LP8040AHL
TD8050AH/TD8040AHL/LD8050AH/LD8040AHL

D.C. CHARACTERISTICS $T_A = -40°C$ to $+85°C$; $V_{CC} = V_{DD} = 5V \pm 10\%$; $V_{SS} = 0V$

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	**Typ**	**Max**		
V_{IH}	Input High Voltage (All Except XTAL1, XTAL2, $\overline{RESET}$)	2.2		V_{CC}	V	
I_{DD}	V_{DD} Supply Current		10	20	mA	
$I_{DD} + I_{CC}$	Total Supply Current		75	120	mA	

PRELIMINARY

Extended Temperature Electrical Specification Deviations*

TD8748H/LD8748H

D.C. CHARACTERISTICS $T_A = -40°C$ to $+85°C$; $V_{CC} = V_{DD} = 5V \pm 10\%$; $V_{SS} = 0V$

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	Typ	Max		
V_{IH}	Input High Voltage (All Except XTAL1, XTAL2, $\overline{RESET}$)	2.2		V_{CC}	V	
$I_{DD} + I_{CC}$	Total Supply Current		50	130	mA	

TD8749H/LD8749H

D.C. CHARACTERISTICS $T_A = -40°C$ to $+85°C$; $V_{CC} = V_{DD} = 5V \pm 10\%$; $V_{SS} = 0V$

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	Typ	Max		
V_{IH}	Input High Voltage (All Except XTAL1, XTAL2, $\overline{RESET}$)	2.2		V_{CC}	V	
$I_{DD} + I_{CC}$	Total Supply Current		75	150	mA	

TP8743/TD8243/LD8243

D.C. CHARACTERISTICS $T_A = -40°C$ to $+85°C$; $V_{CC} = 5V \pm 10\%$; $V_{SS} = 0V$

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	Typ	Max		
I_{CC}	V_{CC} Supply Current		15	25	mA	

*Refer to individual commercial grade data sheet for complete operating characteristics.

PRELIMINARY