SCOPE: MICROPROCESSOR SUPERVISORY CIRCUITS

Device Type	Generic Number
01	MAX705(x)/883B
02	MAX706(x)/883B
03	MAX707(x)/883B
04	MAX708(x)/883B
05	MAX813L(x)/883B

<u>Case Outline(s)</u>. The case outlines shall be designated in Mil-Std-1835 and as follows:

Outline Letter		Mil-Std-1835	Case Outline	Package Code
MAXIM	SMD			
JA	P	GDIP1-T08 or CDIP2-T08	8 LEAD CERDIP	J08
LP	2	CQCC1-N20	20 Pin Leadless Chip	L20

Absolute Maximum Ratings

Terminal Voltage (with respect to GND)

V_{CC} .... -0.3V to +6.0V

All other Inputs <u>1</u>/ .... -0.3V to (Vcc+0.3V)

Input Current

V_{CC} 10mA

GND 10mA

Output Current (all outputs) 10mA

Lead Temperature (soldering, 10 seconds) .... +300°C

Storage Temperature .... -65°C to +160°C

Continuous Power Dissipation .... T_A=+70°C

8 lead CERDIP(derate 8.0mW/°C above +70°C) 640mW

20 lead LCC(derate 9.1mW/°C above +70°C) 727mW

Junction Temperature T_J .... +150°C

Thermal Resistance, Junction to Case, ΘJC:

      Case Outline 8 lead CERDIP.. 55°C/W

      Case Outline 20 leadless Chip carrier .... 20°C/W

Thermal Resistance, Junction to Ambient, ΘJA:

      Case Outline 8 lead CERDIP.. 125°C/W

      Case Outline 20 leadless Chip carrier .... 110°C/W

Recommended Operating Conditions

Ambient Operating Range (T_A) .... -55°C to +125°C

Supply Voltage Range (V_{CC}) .... +1.2V to +5.5V

NOTE 1: The input voltage limits on PFI and $\overline{MR}$ may be exceeded if the input current is less than 10mA.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

TABLE 1. ELECTRICAL TESTS:

TEST	Symbol	CONDITIONS -55 °C $\leq T_A \leq$ +125°C 2/ Unless otherwise specified	Group A Subgroup	Device type	Limits Min 3/	Limits Max 3/	Units
Operating Voltage Range	V_{CC}		1,2,3	All	1.2	5.5	V
Supply Current	I		1,2,3	All		500	µA
RESET AND WATCHDOG TIMER							
Reset Threshold	V_{RT}		1,2,3	01,03,05	4.5	4.75	V
				02,04	4.25	4.5	
$\overline{\text{RESET}}$ Ouput Voltage	V_{RSTL}	I_{SOURCE}=800µA	1,2,3	01,02, 03,04	V_{CC}-1.5		V
		I_{SINK}-3.2mA				0.4	
		I_{SINK}=100µA, V_{CC}=1.2V				0.3	
RESET Output Voltage	V_{RSTH}	I_{SOURCE}=800µA	1,2,3	03,04,05	V_{CC}-1.5		V
		I_{SINK}=1.2mA		03,04		0.4	
		I_{SOURCE}=4µA, V_{CC}=1.2V		05	0.9		
		I_{SINK}=3.2mA				0.4	
WDI Input Threshold Logic Low	WD_{VIL}	V_{CC}=5V	1,2,3	01,02,05		0.8	V
WDI Input Threshold Logic High	WDI_{VIH}	V_{CC}=5V	1,2,3	01,02,05	3.5		V
WDI Input Current	WDI_{IN}	WDI=V_{CC}	1,2,3	01,02,05		150	µA
		WDI=0V			-150		
$\overline{\text{WDO}}$ Output Voltage	$\overline{\text{WDO}}_{VOH}$	I_{SOURCE}=800µA	1,2,3	01,02,05	V_{CC}-1.5		V
	$\overline{\text{WDO}}_{VOL}$	I_{SINK}=1.2mA				0.4	
Reset Pulse Width	t_{RS}		9,10,11	All	140	280	ms
Watchdog Timeout Period	t_{WD}		9,10,11	01,02,05	1.0	2.25	s
WDI Pulse Width	t_{WP}	V_{IL}=0.4V, V_{IH}=(V_{CC})(0.8)V	9,10,11	01,02,05	50		ns
MANUAL RESET							
$\overline{\text{MR}}$ Pull-up Current	$\overline{\text{MR}}_{IPU}$	$\overline{\text{MR}}$=0V	1,2,3	All	100	600	µA
$\overline{\text{MR}}$ Input Threshold Logic Low	$\overline{\text{MR}}_{VIL}$		1,2,3	All		0.8	V
$\overline{\text{MR}}$ Input Threshold Logic High	$\overline{\text{MR}}_{VIH}$		1,2,3	All	2.0		V

TEST	Symbol	CONDITIONS -55 °C ≤T_A≤+125°C 2/ Unless otherwise specified	Group A Subgroup	Device type	Limits Min 3/	Limits Max 3/	Units
$\overline{\text{MR}}$ to Reset Out Delay	t_{MD}	NOTE 4	9,10,11	All		250	ns
$\overline{\text{MR}}$ Pulse Width	t_{MR}		9,10,11	All	150		ns
POWER-FAIL DETECTOR							
PFI Input Threshold	PFI_{VTH}	V_{CC}=5V	1,2,3	All	1.2	1.3	V
PFI Input Current	PFI_{IN}		1,2,3	All	-25	+25	nA
$\overline{\text{PFO}}$ Output Voltage	$\overline{\text{PFO}}_{VO}$	I_{SOURCE}=800µA I_{SINK}=3.2mA	1,2,3	All	V_{CC}-1.5	0.4	V

NOTE 2: For device types 01, 03, and 05, V_{CC}=4.75V to 5.5V unless otherwise specified and for device 02, 04, V_{CC}=4.5V to 5.5V unless otherwise specified.

NOTE 3: The algebraic convention, whereby the most negative value is a minimum and the most positive a maximum is used for these limits. Negative current shall be defined as conventional current flow out of a device terminal.

NOTE 4: Applies to both RESET in device types 03-05 and $\overline{\text{RESET}}$ in device types 01 and 04.

	Package	ORDERING INFORMATION:	SMD NUMBER
01	8 pin CERDIP	MAX705MJA/883B	5962-9326701MPA
01	20 pin LCC	MAX705MLP/883B	5962-9326701M2C
02	8 pin CERDIP	MAX706MJA/883B	5962-9326702MPA
02	20 pin LCC	MAX706MLP/883B	5962-9326702M2C
03	8 pin CERDIP	MAX707MJA/883B	5962-9326703MPA
03	20 pin LCC	MAX707MLP/883B	5962-9326703M2C
04	8 pin CERDIP	MAX708MJA/883B	5962-9326704MPA
04	20 pin LCC	MAX708MLP/883B	5962-9326704M2C
05	8 pin CERDIP	MAX813LMJA/883B	5962-9326705MPA
05	20 pin LCC	MAX813LMLP/883B	5962-9326705M2C

TERMINAL CONNECTIONS:

	MAX705/706 J8	MAX705/706 L20	MAX707/708 J8	MAX707/708 L20	MAX813L J8	MAX813L L20
1	$\overline{MR}$	NC	$\overline{MR}$	NC	$\overline{MR}$	NC
2	V_{CC}	$\overline{MR}$	V_{CC}	$\overline{MR}$	V_{CC}	$\overline{MR}$
3	GND	NC	GND	NC	GND	NC
4	PFI	NC	PFI	NC	PFI	NC
5	$\overline{PFO}$	V_{CC}	$\overline{PFO}$	V_{CC}	$\overline{PFO}$	V_{CC}
6	WDI	NC	NC	NC	WDI	NC
7	$\overline{RESET}$	GND	$\overline{RESET}$	GND	RESET	GND
8	$\overline{WDO}$	NC	RESET	NC	$\overline{WDO}$	NC
9		NC		NC		NC
10		PFI		PFI		PFI
11		NC		NC		NC
12		$\overline{PFO}$		$\overline{PFO}$		$\overline{PFO}$
13		NC		NC		NC
14		NC		NC		NC
15		WDI		NC		WDI
16		NC		NC		NC
17		$\overline{RST}$		$\overline{RST}$		RST
18		NC		NC		NC
19		NC		NC		NC
20		$\overline{WDO}$		RST		$\overline{WDO}$

QUALITY ASSURANCE

Sampling and inspection procedures shall be in accordance with MIL-Prf-38535, Appendix A as specified in Mil-Std-883.

Screening shall be in accordance with Method 5004 of Mil-Std-883. Burn-in test Method 1015:
1. Test Condition, A, B, C, or D.
2. TA = +125°C minimum.
3. Interim and final electrical test requirements shall be specified in Table 2.

Quality conformance inspection shall be in accordance with Method 5005 of Mil-Std-883, including Groups A, B, C, and D inspection.

Group A inspection:
1. Tests as specified in Table 2.
2. Selected subgroups in Table 1, Method 5005 of Mil-Std-883 shall be omitted.

Group C and D inspections:
a. End-point electrical parameters shall be specified in Table 1.
b. Steady-state life test, Method 1005 of Mil-Std-883:
1. Test condition A, B, C, D.
2. TA = +125°C, minimum.
3. Test duration, 1000 hours, except as permitted by Method 1005 of Mil-Std-883.

TABLE 2.   **ELECTRICAL TEST REQUIREMENTS**

Mil-Std-883 Test Requirements	Subgroups per Method 5005, Table 1
Interim Electric Parameters Method 5004	1
Final Electrical Parameters Method 5005	1*, 2, 3, 9, 10, 11
Group A Test Requirements Method 5005	1, 2, 3, 9, 10, 11
Group C and D End-Point Electrical Parameters Method 5005	1, 9

*   PDA applies to Subgroup 1 only.