

SCOPE: MICROPROCESSOR SUPERVISORY CIRCUITS

<u>Device Type</u>	<u>Generic Number</u>
01	MAX690A(x)/883B
02	MAX692A(x)/883B
03	MAX805L(x)/883B

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

<u>Outline Letter</u>	<u>Mil-Std-1835</u>	<u>Case Outline</u>	<u>Package Code</u>
JA	GDIP1-T08 or CDIP2-T08	8 LEAD CERDIP	J08

Absolute Maximum Ratings

Terminal Voltage (with respect to GND)

V_{CC} -0.3V to 6.0V

V_{BATT} -0.3V to 6.0V

All other Inputs ^{1/} -0.3V to (V_{CC}+0.3V)

Input Current

V_{CC} 200mA

V_{BATT} 50mA

GND 20mA

Output Current

V_{OUT} Short-circuit protected for up to 10 sec.

All other outputs 20mA

Rate of Rise, V_{CC}, V_{BATT} 100V/μs

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

Junction Temperature T_J +150°C

Thermal Resistance, Junction to Case, Θ_{JC}:

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

Thermal Resistance, Junction to Ambient, Θ_{JA}:

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

Recommended Operating Conditions

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

^{1/} The input voltage limits on PFI and WDI may be exceeded if the current into these pins is limited to 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	Group A Subgroup	Device type	Limits Min	Limits Max	Units
		-55 °C ≤ T _A ≤ +125 °C V _{CC} =4.75V to 5.5V for 01,03. V _{CC} =4.5V to 5.5V for 02. V _{BATT} =2.8V Unless otherwise specified					
Operating Voltage Range V _{CC} , V _{BATT} .		NOTE 2	1,2,3	All	1.2	5.5	V
Supply Current (Excluding I _{OUT})	I _{SUPPLY}		1,2,3	All		500	μA
I _{SUPPLY} in Battery Mode (Excluding I _{OUT})		V _{CC} =0V, V _{BATT} =2.8V	1 2,3	All		1.0 5.0	μA
V _{BATT} Standby Current NOTE 3		5.5V > V _{CC} > V _{BATT} + 0.2V	1 2,3	All	-0.1 -1.0	0.02 0.02	μA
V _{OUT} Output		I _{OUT} =5mA	1,2,3	All	V _{CC} -0.05		V
		I _{OUT} =50mA			V _{CC} -0.5		
V _{OUT} in Battery-Backup Mode		I _{OUT} =250μA, V _{CC} <V _{BATT} -0.2V	1,2,3	All	V _{BATT} - 0.1		V
Battery Switch Threshold, V _{CC} to V _{BATT}		V _{CC} <V _{RT} , Power Up	1,2,3	All		+200	mV
		V _{CC} <V _{RT} , Power Down			-200		
Reset Threshold	V _{RT}		1,2,3	01,03 02	4.50 4.25	4.75 4.50	V
Reset Threshold Hysteresis			1,2,3	All		250	mV
Reset Pulse Width	t _{RS}		9,10,11	All	140	280	ms
RESET Output Voltage		I _{SOURCE} =800μA I _{SINK} =3.2mA	1,2,3	All	V _{CC} -1.5	0.4	V
		V _{CC} =1.0V, I _{SINK} =50μA V _{CC} =1.2V, I _{SINK} =100μA	1 1,2,3	01,02		0.3 0.3	
Reset Output Voltage		I _{SOURCE} =4μA, V _{CC} =1.2V I _{SOURCE} =800μA I _{SINK} =3.2mA	1,2,3	03	0.9 V _{CC} -1.5	0.4	V
Watchdog Timeout	t _{WD}		9,10,11	All	1.00	2.25	sec
WDI Pulse Width	t _{WP}	V _{IL} =0.4V, V _{IH} =(0.8)(V _{CC})	9,10,11	All	50		ns
WDI Input Threshold NOTE 4		V _{CC} =5V, Logic low V _{CC} =5V, Logic high	1,2,3	All	3.5	0.8	V
WDI Input Current		WDI=V _{CC} WDI=0V	1,2,3	All	-150	150	μA
PFI Input Threshold		V _{CC} =5V	1,2,3	All	1.20	1.30	V
PFI Input Current			1,2,3	All	-25	25	nA
PFO Output Voltage		I _{SOURCE} =800μA	1,2,3	All	V _{CC} -1.5		V
		I _{SINK} =3.2mA				0.4	

NOTE 2: Either V_{CC} or V_{BATT} can go to 0V, if the other is greater than 2.0V.

NOTE 3: “-”= battery-charging, “+” = battery-discharging current.

NOTE 4: WDI is guaranteed to be in an intermediate, non-logic state if WDI is floating and V_{CC} is in the operating voltage range. WDI is internally biased 35% of V_{CC} with an input impedance of 50k Ω .

	Package	ORDERING INFORMATION:
01	8 pin CERDIP	MAX690AMJA/883B
02	8 pin CERDIP	MAX692AMJA/883B
03	8 pin CERDIP	MAX805LMJA/883B

TERMINAL CONNECTIONS:

	MAX690A/692A	MAX805L
	J8	J8
1	V_{OUT}	V_{OUT}
2	V_{CC}	V_{CC}
3	GND	GND
4	PFI	PFI
5	$\overline{\text{PFO}}$	$\overline{\text{PFO}}$
6	WDI	WDI
7	$\overline{\text{RESET}}$	RESET
8	V_{BATT}	V_{BATT}

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

* PDA applies to Subgroup 1 only.