SCOPE: **+5V/ADJUSTABLE OUTPUT CMOS, STEP-DOWN SWITCHING REGULATOR**

Device Type	Generic Number
01	MAX638AM(x)/883B
02	MAX638BM(x)/883B

Case Outline(s). 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-T8 or CDIP2-T8	8 LEAD CERDIP	J8

Absolute Maximum Ratings

Supply Voltage, $+V_S$ to GND ..... +18V
Output Voltage, L_X and LBO ..... +18V
Input Voltage, LBO, LBI, V_{FB}, COMP ..... -0.3V to ($+V_S$+0.3V)
L_X Output Current ..... 525mA Peak
LBO Output Current 50mA

Lead Temperature (soldering, 10 seconds) ..... +300°C
Storage Temperature ..... -65°C to +150°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
8 lead CERDIP, ΘJC: ..... 55°C/W
Thermal Resistance, Junction to Ambient
8 lead CERDIP. ΘJA: ..... 125°C/W

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

ORDERING INFORMATION	MAXIM PART NUMBER	SMD NUMBER
01	MAX638AMJA/883B	5962-9212701MPA
02	MAX638BMJA/883B	5962-9212702MPA

TERMINAL NUMBER	8 LEAD CERDIP
1	VOUT
2	LBO
3	LBI
4	GND
5	L_X
6	$+V_S$
7	V_{FB}
8	COMP

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:

PARAMETER	Symbol	CONDITIONS -55 °C ≤T_A≤ +125°C +V_S=+12V, GND=0V Unless otherwise specified	Group A Subgroup	Device type	Limits Min	Limits Max	Units
Supply Voltage	+V_S	V_{OUT}=5V, NOTE 1	1,2,3	All	5.0	16.5	V
		Adjustable Mode, NOTE 2			2.6	16.5	
Supply Current	I_S		1 2,3	All		450 600	µA
Reference Voltage	VREF		1 2,3	All	1.28 1.24	1.34 1.38	V
Output Voltage	V_{OUT}	No load, VFB=GND	1 2,3	All	4.75 4.5	5.25 5.5	V
Line Regulation	VR_{LINE}	+10V<+V_S<+15V	1,2,3	All	-1.5	1.5	%/V_{OUT}
Load Regulation	VR_{LOAD}	I_L=1mA to 50mA	1,2,3	All	1.0	1.0	%/V_{OUT}
Oscillator Frequency	f_O		1	01 02	59.1 50.0	72.3 70.0	kHz
Oscillator Duty Cycle			1	All	40	60	%
L_X On Resistance	R_{ON}	I_{LX}=100mA	1	All		12	Ω
L_X Leakage Current	I_{LX}	V_{LX}=0V	1 2,3	All		1.0 30	µA
Low Battery Input Threshold	V_{LBI}		1,2,3	All	1.21	1.41	V
VFB Input Bias Current	I_{FB}		1	All		10	nA
Low Battery Input Bias Current	I_{LBI}		1	All		10	nA
Low Battery Output Current	I_{LBO}	V_{LBO}=0.4V, V_{LBI}=1.21V	1,2,3	All	0.5		mA
Low Battery Output Leakage Current	I_{LBOL}	V_{LBO}+V_S=16.5V, V_{LBI}=1.41V	1,2,3	All		3	µA

NOTE 1: Nominal output voltage of +5V is given by Figure 1 circuit in commercial datasheet .
NOTE 2: A nominal output voltage of 1.31V is given with S1 closed.

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
Group A Test Requirements Method 5005	1, 2, 3
Group C and D End-Point Electrical Parameters Method 5005	1

* PDA applies to Subgroup 1 only.