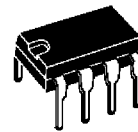


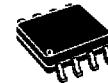
**TS834**

MICROPOWER VOLTAGE SUPERVISOR RESET ACTIVE LOW OR HIGH WITH INTEGRATED TIMER

- ULTRA LOW POWER CONSUMPTION :
12 μ A max. @ $V_{CC} = 5V$
- BOTH ACTIVE HIGH AND ACTIVE LOW OUTPUTS
- RESET TIMER WITH DISABLE FUNCTION
- PRECISION RESET THRESHOLD (guaranteed over Temperature)
- 4.33V typ. THRESHOLD VOLTAGE
GUARANTEED RESET OPERATION DOWN TO 1.5V
- OPEN DRAIN OUTPUT WITH
 $V_{ol} = 450mV$ typ. @ $I_{ol} = 8mA$ & $V_{CC} = 4V$
- FAST RESPONSE TIME : 20 μ s FOR A 10mV OVERDRIVE
- 100mV INTERNAL HYSTERESIS



N
DIP8
(Plastic Package)



D
SO8
(Plastic Micropackage)

DESCRIPTION

The TS834 is a voltage supervisor providing two different outputs (one active low and one active high) with an integrated timer that can be disabled. It incorporates a high stability bandgap voltage reference and a comparator with open drain output. The threshold voltage is set at 4.33V by internal thermally matched resistors.

The comparator exhibits a 20 μ s response (with 10mV overdrive).

An internal hysteresis of 100mV increases the comparator noise margin and prevents false reset operation.

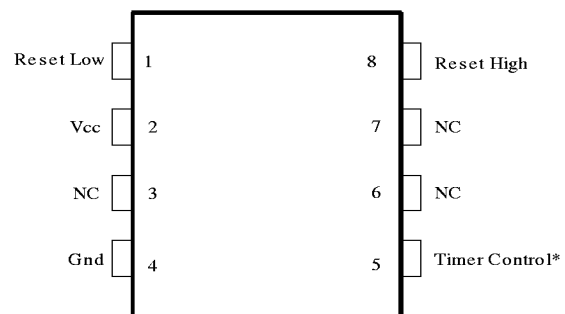
APPLICATIONS

- Computers
- Microcontrollers
- Microprocessor systems
- Intelligent instruments
- Power failure detection

ORDER CODES

Part Number	Temperature Range	Package	
		N	D
TS834-5I	-40, +85°C	•	•

PIN CONNECTIONS



*This pin must be connected to Vcc or Gnd

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage - note 1	7	V
V_{out}	Output Voltage - note 1	-0.3 to $V_{CC} + 0.3$	V
I_{out}	Output Current	20	mA
P_d	Power Dissipation - note 2	SO8 DIP8 700 1200	mW
T_{oper}	Operating Free Air Temperature Range	-40 to +85	°C
T_{stg}	Storage Temperature	-65 to +150	°C

Note: 1. All voltages values, except differential voltage are with respect to network ground terminal.
 2. $T_j = 150^\circ\text{C}$, $T_{amb} = 25^\circ\text{C}$ with $R_{thja} = 175^\circ\text{C/W}$ for SO8 package
 $R_{thja} = 100^\circ\text{C/W}$ for DIP8 package

OPERATING CONDITIONS

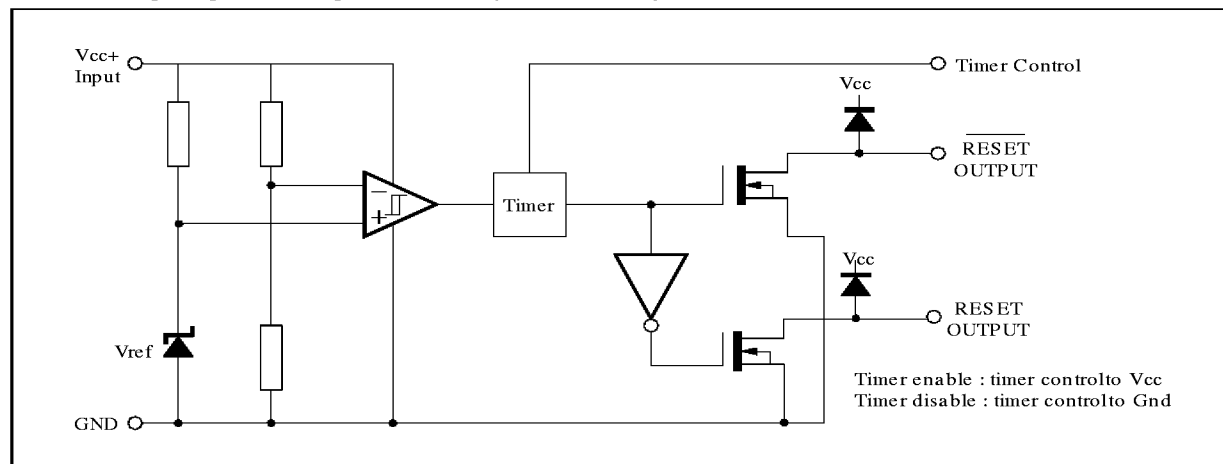
Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	1.5 to 5.5	V

TS834-5**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25^\circ\text{C}$ (unless otherwise specified)

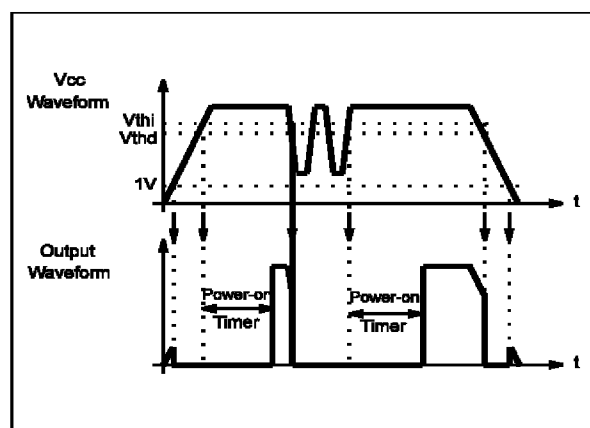
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_{thi}	Threshold Voltage V_{CC} Increasing	$T_{amb} = 25^\circ\text{C}$ $-40 \leq T_{amb} \leq +85^\circ\text{C}$	4.10	4.33	4.46	V
V_{thd}	Threshold Voltage V_{CC} Decreasing	$T_{amb} = 25^\circ\text{C}$ $-40 \leq T_{amb} \leq +85^\circ\text{C}$	4.10	4.23	4.46	V
V_{hys}	Hysteresis Voltage		50	100	200	mV
I_{CC}	Current Consumption	$V_{CC} = 5V$			12	μA
V_{OL1}	Low Level Output Voltage (OUTPUT 1)	$V_{CC} = 4V$, $I_{OL} = 8\text{mA}$, $-40 \leq T_{amb} \leq +85^\circ\text{C}$		450	800 1000	mV
V_{OL2}	Low Level Output Voltage (OUTPUT 2)	$V_{CC} = 5V$, $I_{OL} = 8\text{mA}$, $-40 \leq T_{amb} \leq +85^\circ\text{C}$		450	800 1000	mV
I_{OH1}	Output Off-state Leakage current (OUTPUT 1)	$V_{CC} = 5V$ $-40 \leq T_{amb} \leq +85^\circ\text{C}$		2	40 1000	nA
I_{OH2}	Output Off-state Leakage current (OUTPUT 2)	$V_{CC} = 4V$ $-40 \leq T_{amb} \leq +85^\circ\text{C}$		2	40 1000	nA
t_{phl}	Response Time High to Low	$R_L = 10\text{k}\Omega$, $C_L = 15\text{pF}$ $V_{CC} = V_{thd} - 10\text{mV}$		20		μs
$trst$	Reset Pulse width	Timer enabled $-40 \leq T_{amb} \leq +85^\circ\text{C}$	125	300	500	ms

TIMING DIAGRAMS

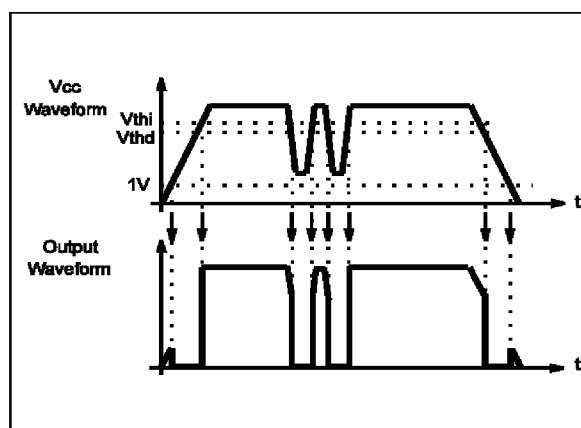
All the timing diagrams are given with outputs loaded by 10kΩ resistors to V_{CC}.



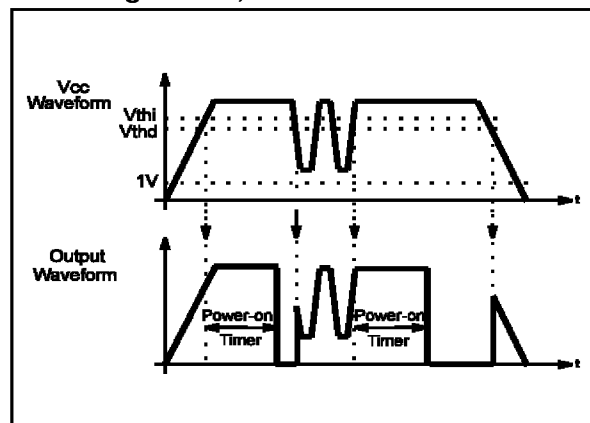
Active Low Reset, Timer Enable



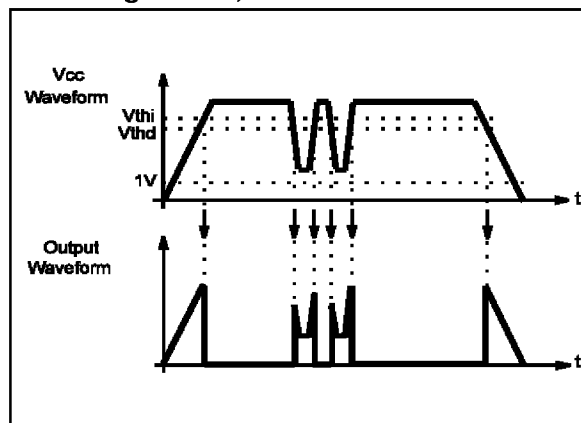
Active Low Reset, Timer Disable

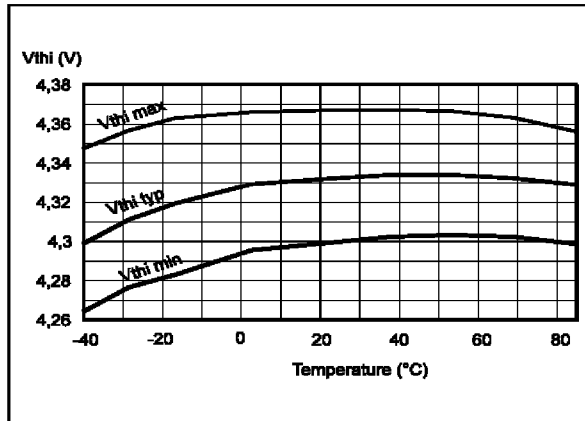


Active High Reset, Timer Enable

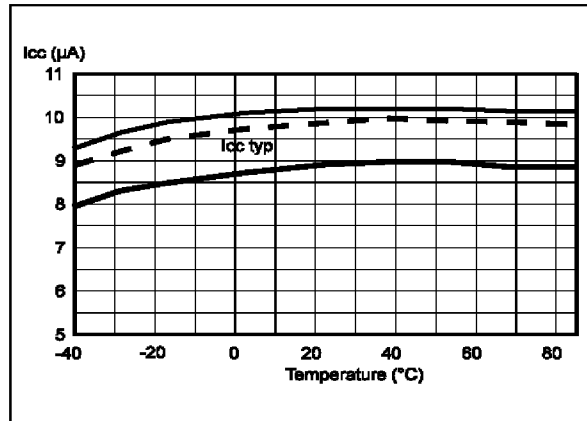
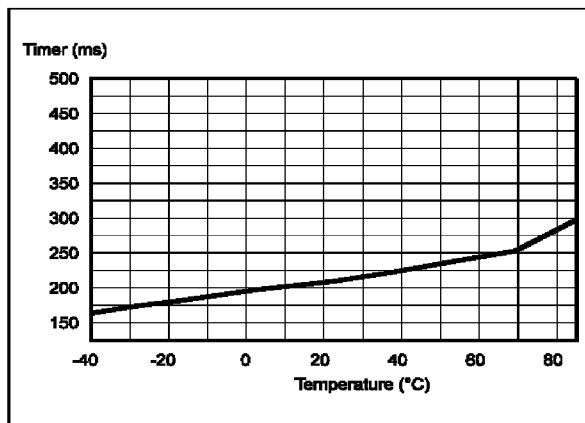
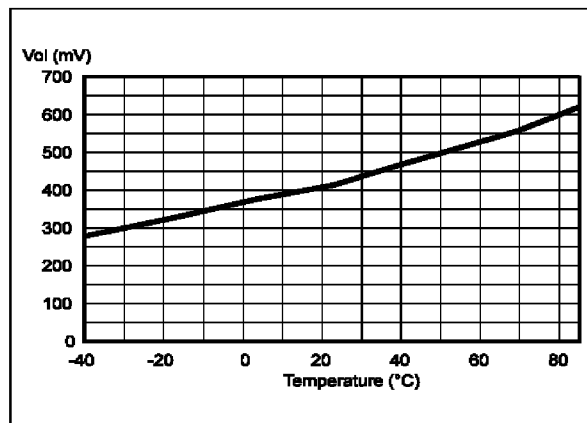


Active High Reset, Timer Disable

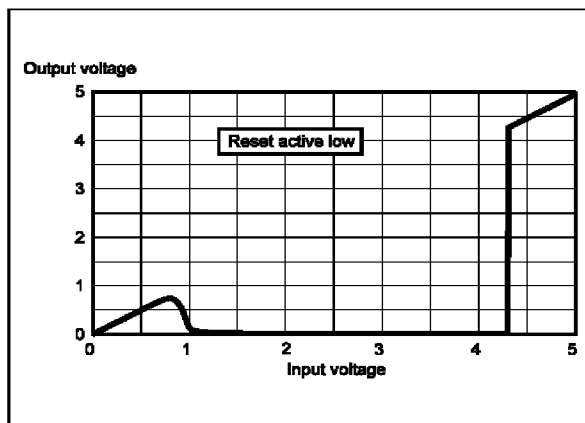


Voltage Threshold (V_{thi}) vs Temperature

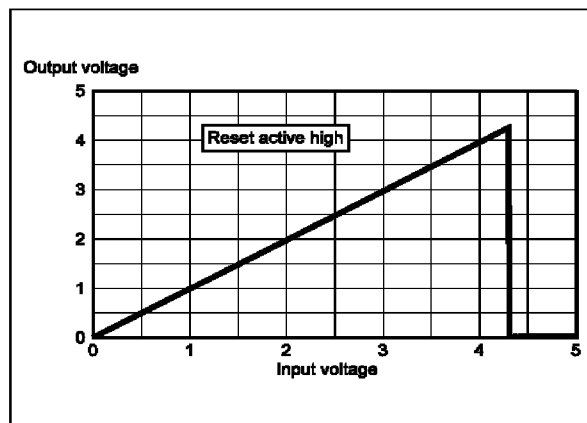
Current Consumption vs Temperature

Timer Period (t_{rst}) vs Temperature V_{ol} vs Temperature

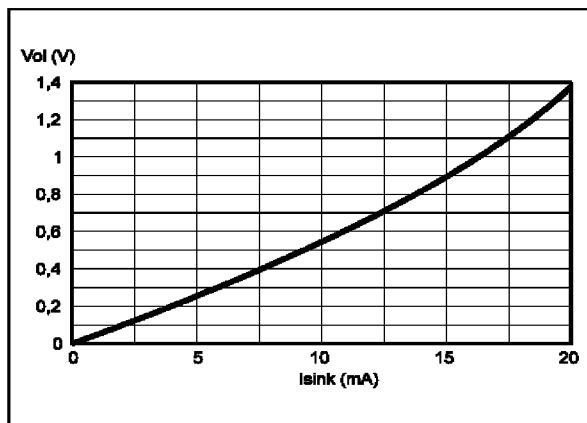
Output Voltage vs Input



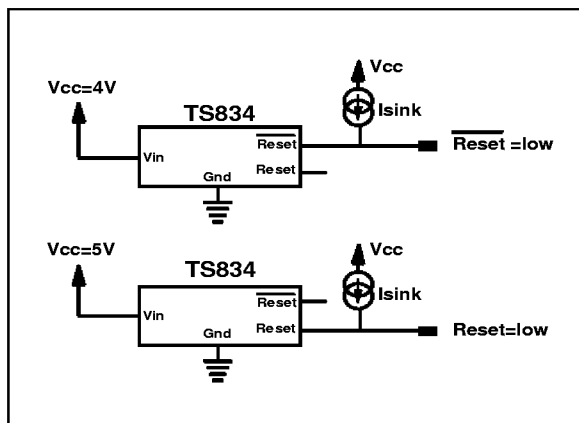
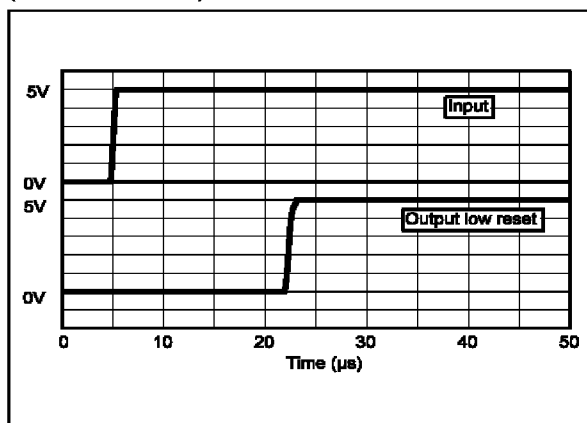
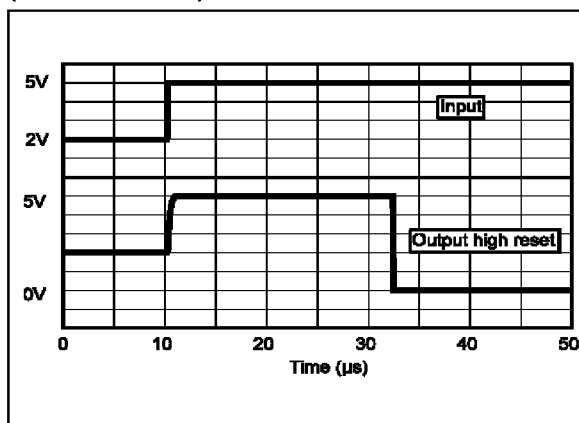
Output Voltage vs Input



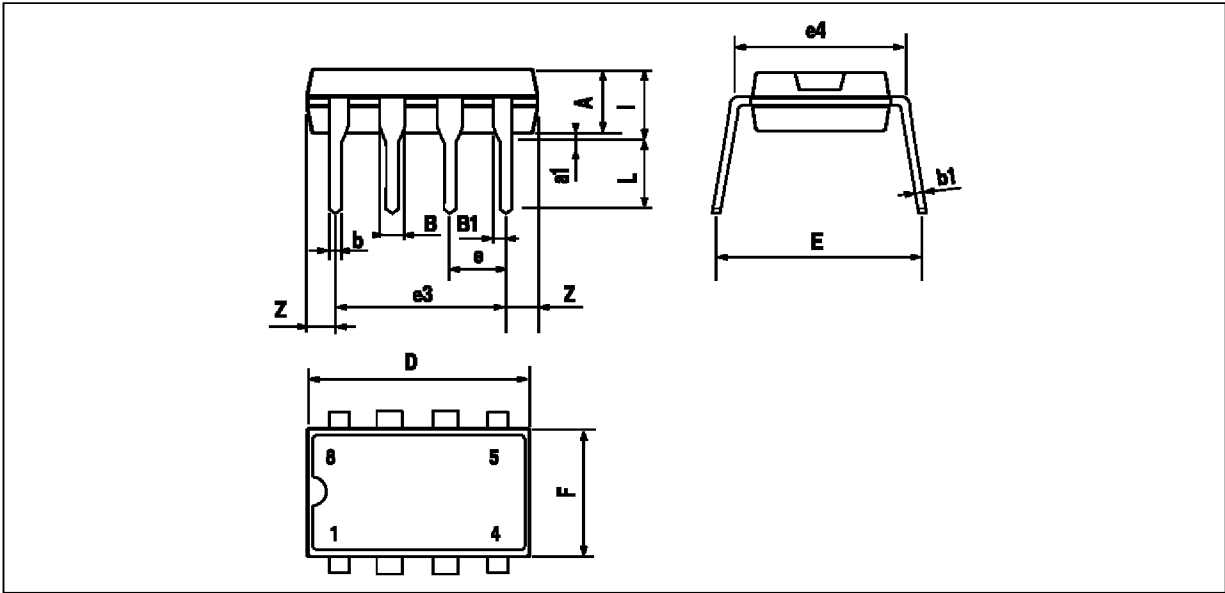
Vol vs Isink



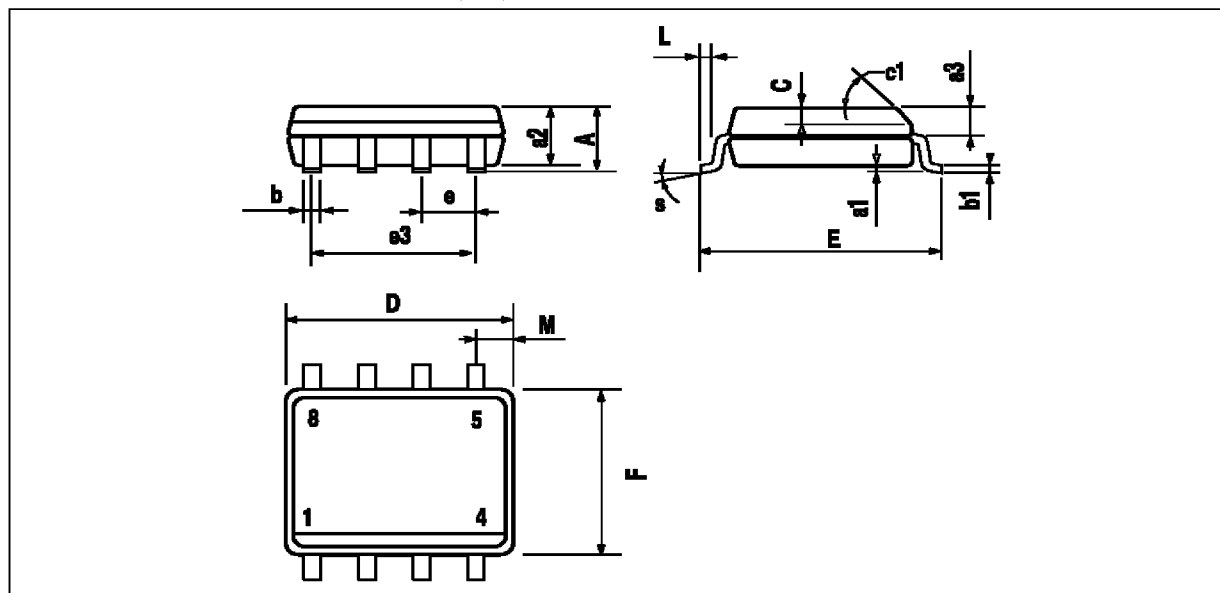
Schematic to Measure Vol vs Isink

Reset Low After a Vcc Transition
(timer disabled)Reset High After Vcc Transition
(timer disabled)

PACKAGE MECHANICAL DATA
8 PINS - PLASTIC PACKAGE



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0.260
i			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

PACKAGE MECHANICAL DATA**8 PINS - PLASTIC MICROPACKAGE (SO)**

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ.)					
D	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.150		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max.)					

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