FEATURES

Wide range of available,fixed output voltage.

Low cost.

Internal short-circuit current limiting.

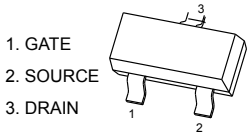
Internal thermal overload protection.

No extermal components required.

Complementary negative regulators offered

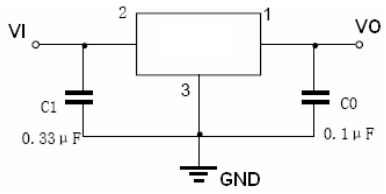
L05

SOT-23



APPLICATIONS

Three-terminal positive voltage regulator.



Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_I	Input voltage	30	V
I_{CM}	Maximum output current	100	mA
P_D	Power dissipation	350	mW
T_{OPR}	Operating junction temperature	0 to +125	℃
T_j,T_{stg}	Storage temperature range	-40 to +150	℃

Electrical Characteristics

(V_{IN}=10V,I_O=40mA,0℃<T_j<125℃,C_I=0.33μF,C_O=0.1μF,unless otherwise specified)

Parameter	Symbol	Test conditions	78L05S			UNIT
			MIN	TYP	MAX	
Output voltage	V_O	T_j=25℃ 7V≤V_i≤20V,I_O=1mA-40mA V_1=10V,I_O=1mA-70mA	4.8 4.75 4.75	5.0	5.2 5.25 5.25	V
Load regulation	Reg_{load}	T_j=25℃, I_O=1mA-100mA T_j=25℃, I_O=1mA-40mA		11 5	60 30	mV
Line regulation	Reg_{line}	7V≤V_i≤20V, T_j=25℃ 8V≤V_i≤20V, T_j=25℃		55 45	150 100	mV
Input Bias Current	I_{IB}	T_j=25℃ T_j=125℃		3.8	6.0 5.5	mA
Input Bias Current Change	△I_{IB}	8V≤V_i≤20V 1mA≤I_O≤40mA			1.5 0.1	mA
Output noise voltage	V_N	10Hz ≤f≤100KHz		40		μV
Ripple rejection	RR	I_O=40mA,8V≤V_i≤18V,f=120Hz ,T_j=25℃	41	49		dB
Dropout voltage	V_I-V_O	T_j=25℃		1.7		V

RATING AND CHARACTERISTIC CURVES

Figure 1. Dropout Characteristics

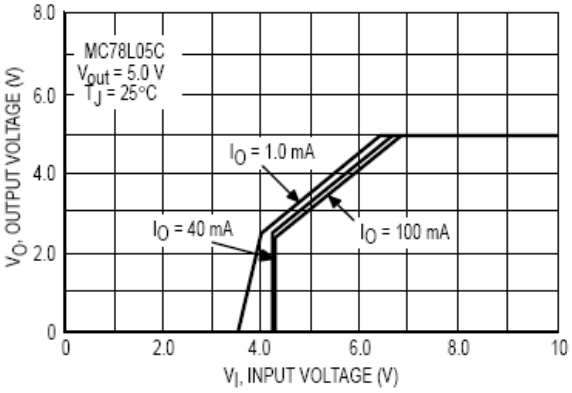


Figure 2. Dropout Voltage versus Junction Temperature

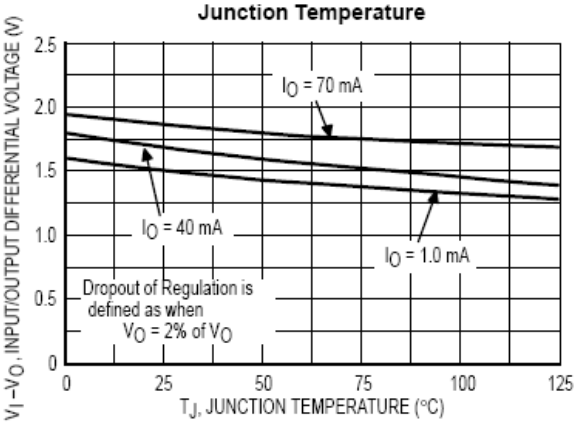


Figure 3. Input Bias Current versus Ambient Temperature

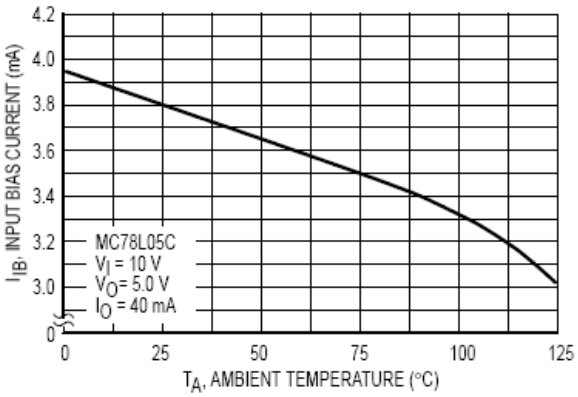


Figure 4. Input Bias Current versus Input Voltage

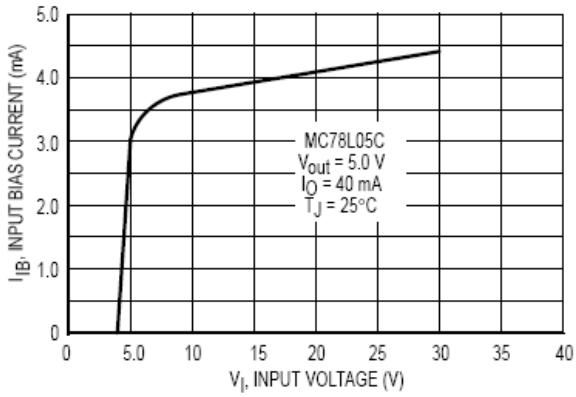


Figure 5. Maximum Average Power Dissipation versus Ambient Temperature – TO–92 Type Package

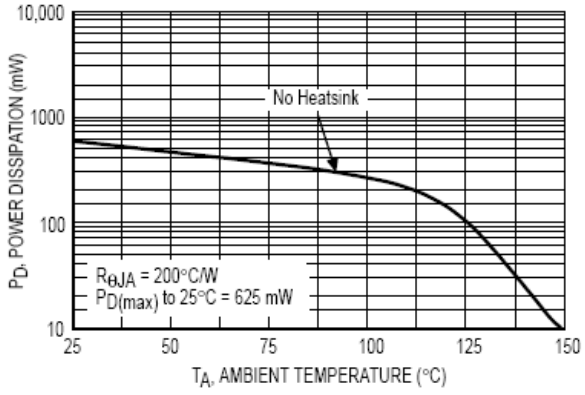
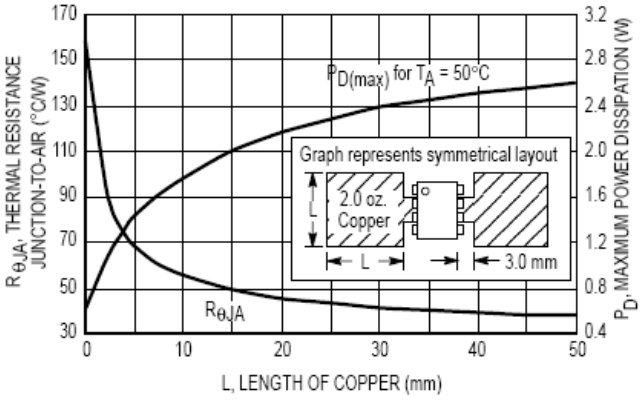


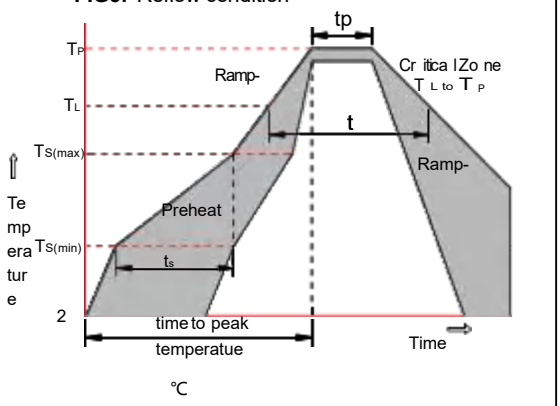
Figure 6. SOP–8 Thermal Resistance and Maximum Power Dissipation versus P.C.B. Copper Length



Soldering parameters

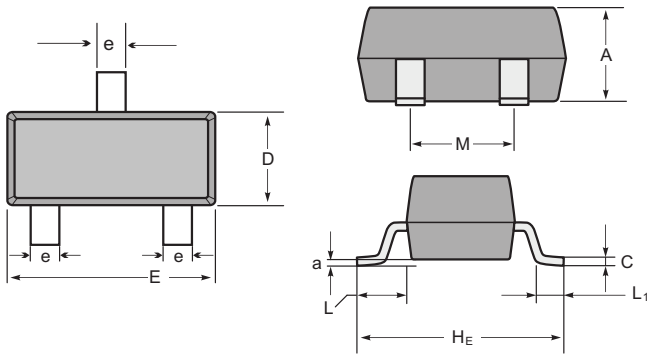
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

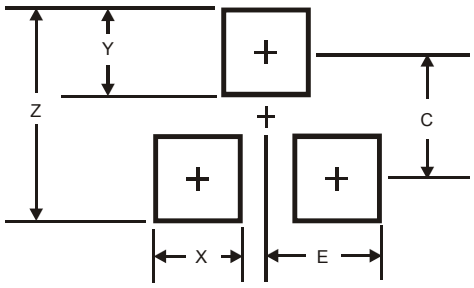
FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout

SOT23





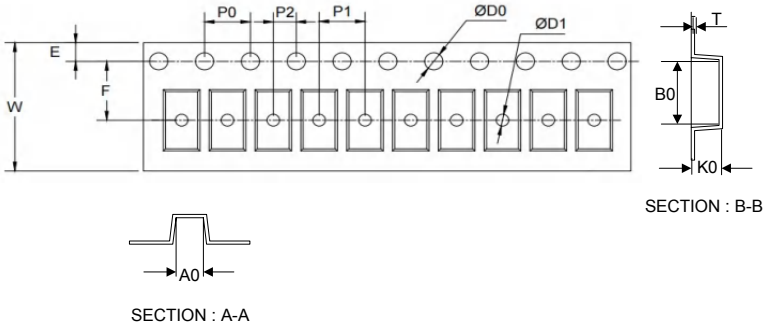
SOT-23 mechanical data

UNIT		A	C	D	E	H_E	e	M	L	L_1	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & rell specification

Tape

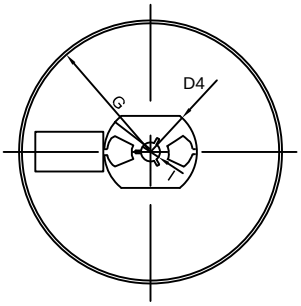


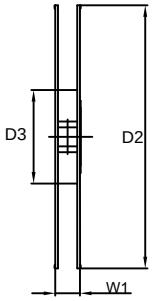
SECTION : B-B

SECTION : A-A

Symbol	Dimension (mm)
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	1.55±0.10
D1	1.05±0.10
E	1.55±0.10
F	3.60±0.10
W	8.00±0.10
A0	3.80±0.20
B0	3.25±0.20
K0	1.45±0.10
T	0.25±0.05

7” Reel





D2	178.0±3.0
D3	55Min.
D4	R24.0±3.0
G	R82.0±3.0
I	13.0±2.0
W1	11.0±3.0

Quantity: 3000PCS