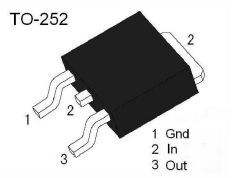
Description

The 79M05 series of 3-Terminal medium current negative voltage regulators are monolithic integrated circuits designed as fixed voltage regulators. These regulators employ internal current limiting, thermal shutdown and safe area compensation making them essentially indestructible.





Features

- No external components required
- Output current in excess of 1.0A
- Internal thermal overload
- Internal short circuit current limiting
- Output transistor safe area compensation
- Output voltages of -5V

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings (@ T = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Input voltage	V_{IN}	-30	V
Output voltage	V_O	-5	V
Operating Junction Temperature Range	T_j	-55 ~ 150	°C
Storage Temperature Range	T_{stg}	-65 ~ 150	°C

Electrical Characteristics (T_J=25℃unless otherwise noted)

(Refer to the test circuits, I_O=500mA, V_I=-10V, C_I= 2.2μF, C_O=1μF unless otherwise specified)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Output Voltage	V_O	T_j = 25°C		-4.8	-5.0	-5.2	V
		I_O= 5mA ~ 1.0A , P_O<15W V_I = -7V ~ -20V		-4.75	-5.0	-5.25	
Line Regulation (Note)	ΔV_O	T_j = 25°C	V_I = -7V ~ -25V			100	mV
			V_I = -8V ~ -12V			50	
Load Regulation (Note)	ΔV_O	T_j = 25°C	I_O= 5mA ~ 1.0A			100	mV
			I_O= 0.25A ~ 0.75A			50	
Quiescent Current	I_Q	T_j = 25°C				6.0	mA
Quiescent Current Change	ΔI_Q	I_O= 5mA ~ 1.0A				0.5	mA
		V_I = -8 ~ -25V				0.8	
Output Voltage Drift	$\Delta V/\Delta T$	I_O = 5mA			-0.4		mV/°C
Output Noise Voltage	V_N	f = 10HZ ~ 100KHZ			40		μV
Ripple Rejection	RR	f = 120Hz, ΔV_I = 10V			60		dB
Dropout Voltage	V_D	T_j =25°C, I_O = 1.0A			2		V
Short Circuit Current	I_{SC}	T_j =25 , V_I= -35V			300		mA
Peak Current	I_{PK}	T_j = 25°C			1.6		A

Notes:

Load and line regulation are specified at constant junction temperature. Change in Vo due to heating effects must be taken into account separately. Pulse testing with low duty is used.

RATING AND CHARACTERISTIC CURVES

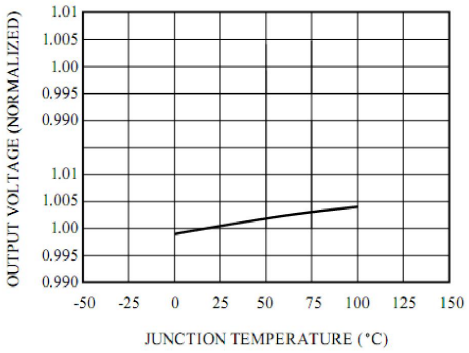


Figure 3. OutputVoltagevs.Temperature

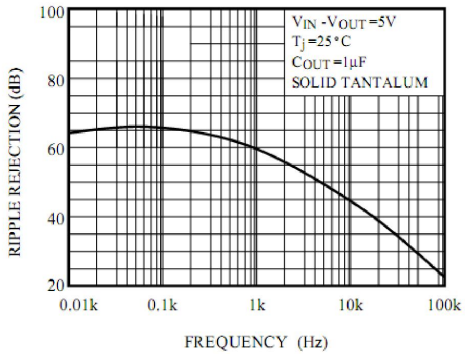


Figure 4. Ripple rejection

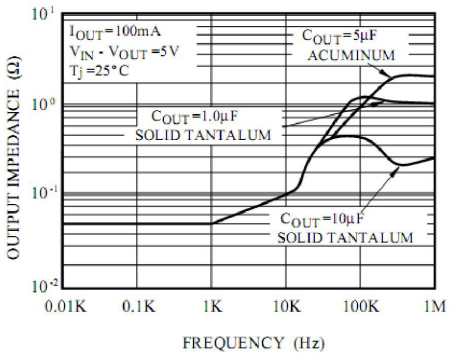


Figure 5. Output impedance

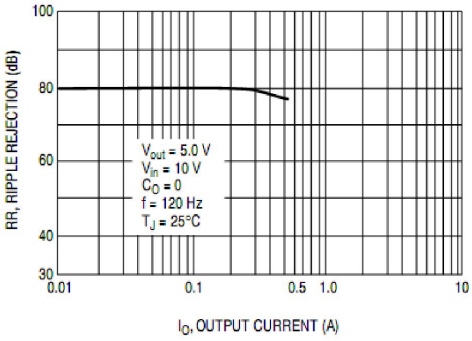


Figure6. Minimum input-output differential

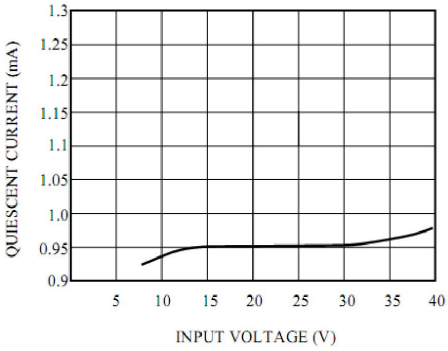


Figure 7. Bias Current vs Input Voltage

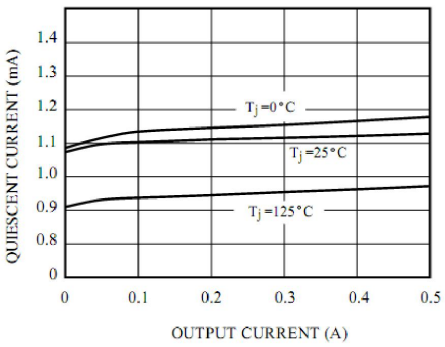


Figure 8. Quiescent current vs load current

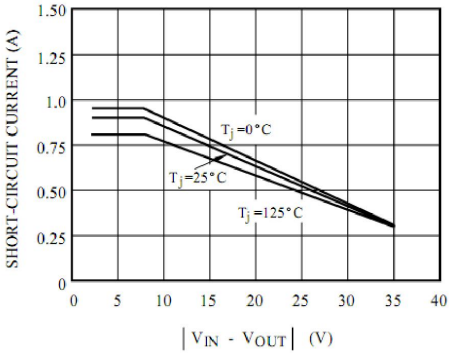


Figure 9. Short-circuit current

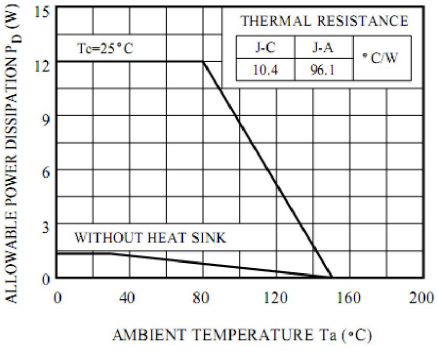


Figure 10. Power Derating

Typical Applications

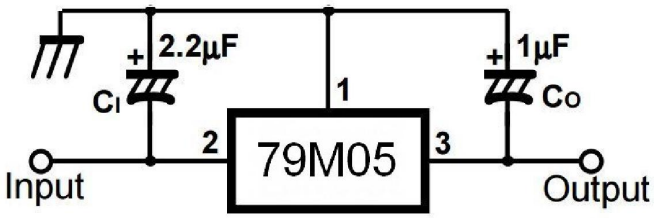


Figure.1 Fixed output regulat

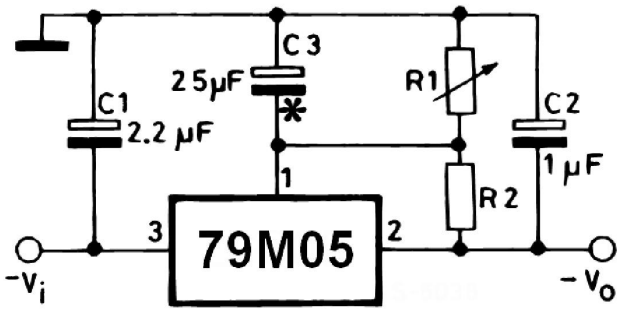
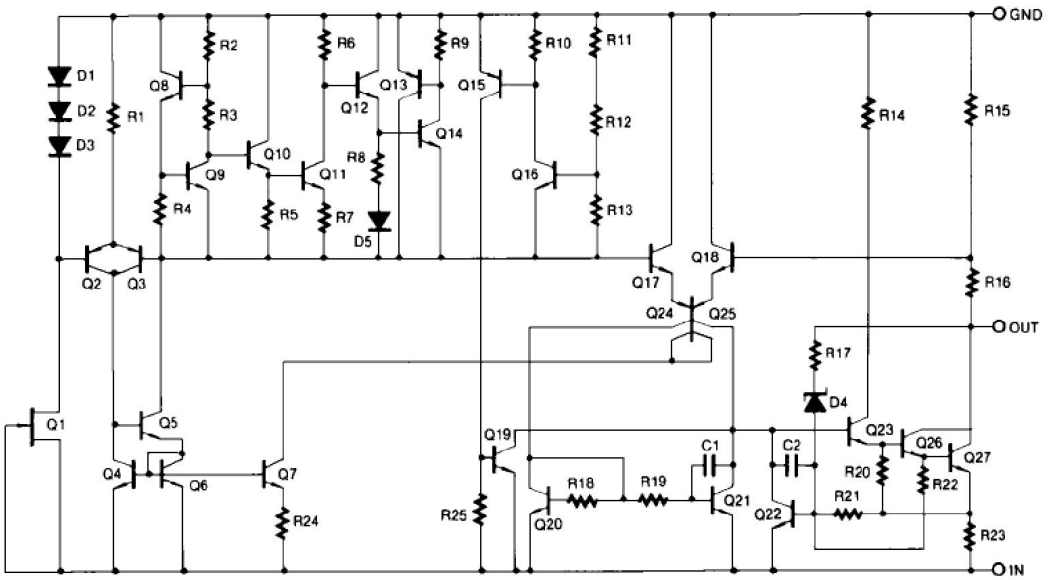


Figure.2 Circuit for increasing output voltage

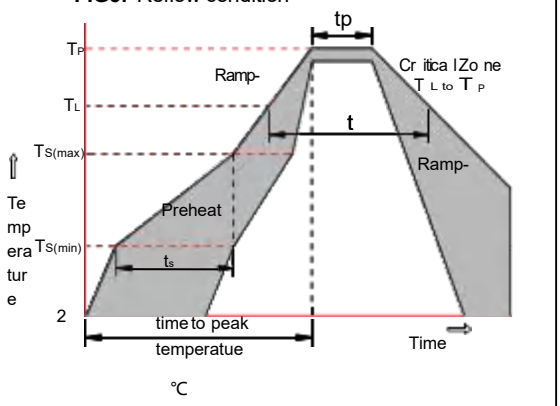
Internal Block Digram



Soldering parameters

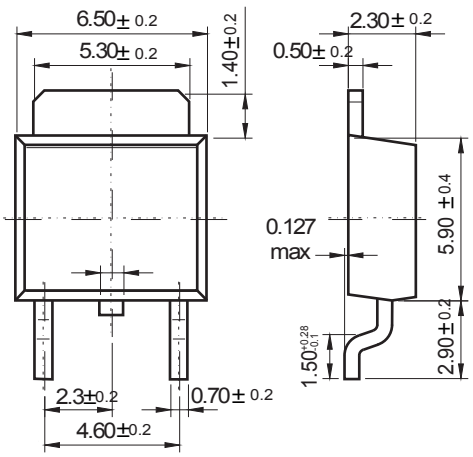
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid 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

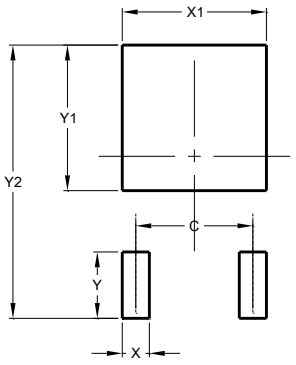


Package Dimensions & Suggested Pad Layout

TO-252



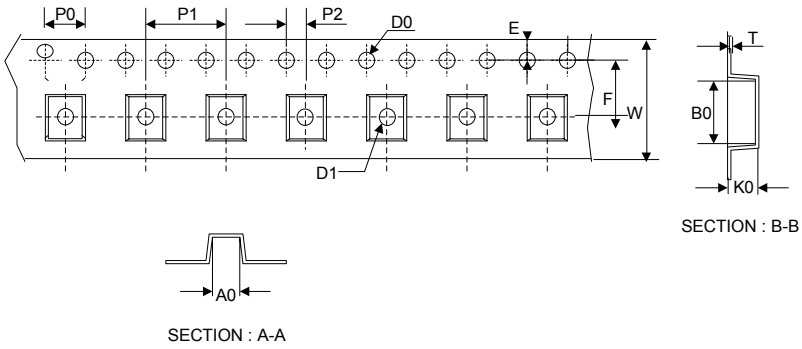
Dimensions in inches and (millimeters)



Dimensions	Value (in mm)
C	4.55
X	1.50
X1	5.80
Y	2.70
Y1	6.00
Y2	10.90

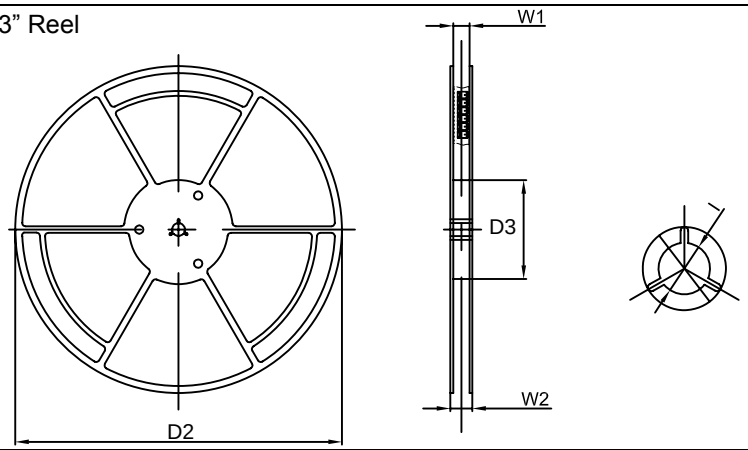
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	8.00±0.20
P2	2.00±0.20
D0	1.55±0.15
D1	1.55±0.20
E	1.75±0.20
F	7.50±0.20
W	16.00±0.20
A0	7.10±0.20
B0	10.50±0.20
K0	2.70±0.20
T	0.30±0.10

13” Reel



D2	330.0±5.0
D3	100.0±4.0
W1	20.0±5.0
W2	25.0±5.0
I	13.0±2.0

Quantity: 2500PCS

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