

## SOT-23 Plastic-Encapsulate Three-terminal positive voltage regulator

### FEATURES

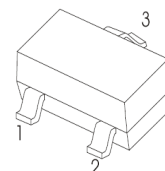
Maximum output current  $I_O$ : 0.1 A

Output voltage  $V_O$ : 5 V

Continuous total dissipation

$P_D$ : SOT-23 0.35 W ( $T_a = 25^\circ\text{C}$ )

### SOT-23



1. OUT
2. IN
3. GND

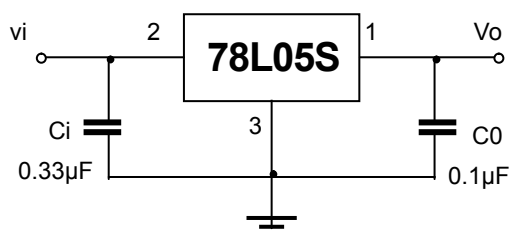
### ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	$V_I$	30	V
Operating Junction Temperature Range	$T_{OPR}$	0~+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55~+150	$^\circ\text{C}$

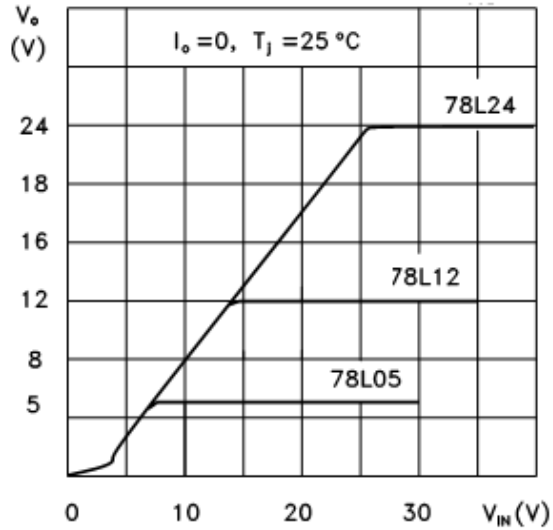
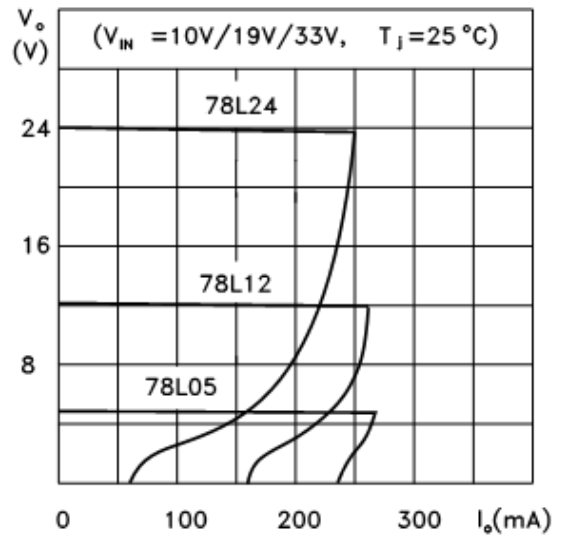
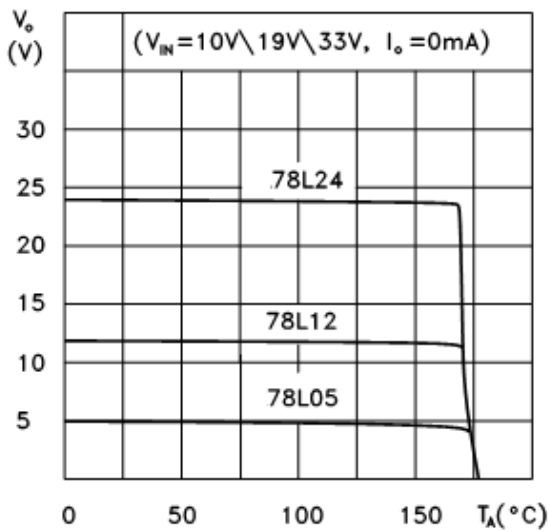
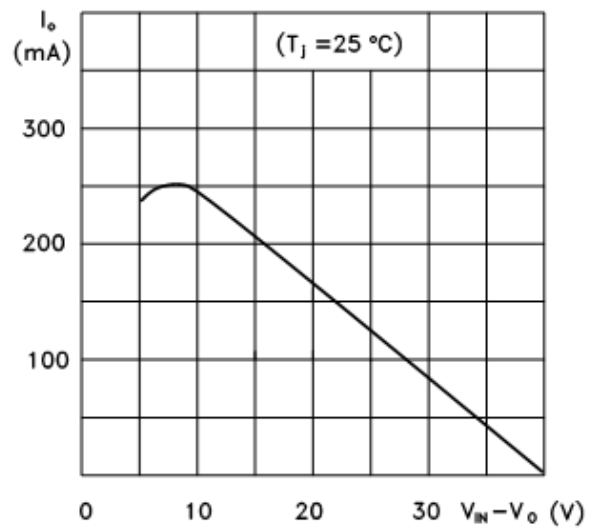
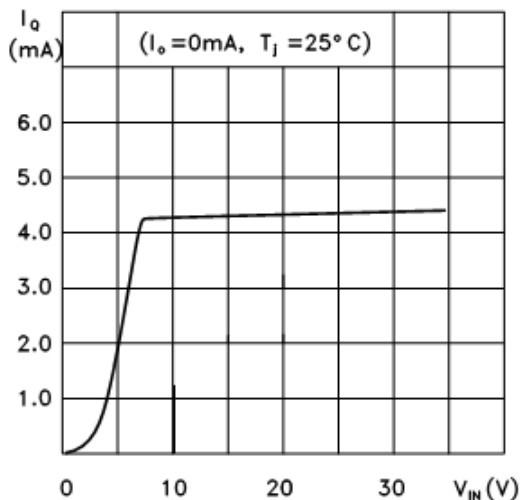
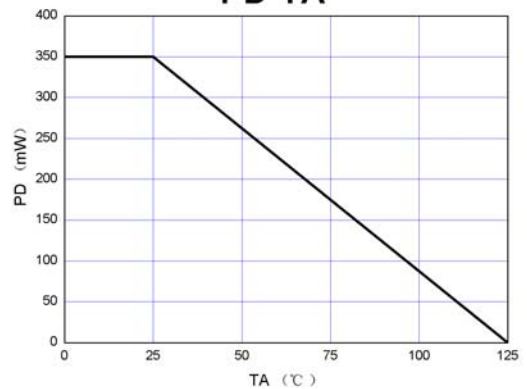
### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=10\text{V}, I_o=40\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$ , unless otherwise specified)

Parameter	mbol	Test conditions	MIN	TYP	MAX	UNIT	
Output voltage	$V_o$	$25^\circ\text{C}$	4.8	5.0	5.2	V	
		0-125 $^\circ\text{C}$	$7\text{V} \leq V_i \leq 20\text{V}, I_o=1\text{mA} \sim 40\text{mA}$	4.75	5.0	5.25	V
			$I_o=1\text{mA} \sim 70\text{mA}$	4.75	5.0	5.25	V
Load Regulation	$\Delta V_o$	$I_o=1\text{mA} \sim 100\text{mA}$	$25^\circ\text{C}$	15	60	mV	
		$I_o=1\text{mA} \sim 40\text{mA}$	$25^\circ\text{C}$	8	30	mV	
Line regulation	$\Delta V_o$	$7\text{V} \leq V_i \leq 20\text{V}$		32	150	mV	
		$8\text{V} \leq V_i \leq 20\text{V}$	$25^\circ\text{C}$	26	100	mV	
Quiescent Current	$I_q$	$25^\circ\text{C}$		3.8	6	mA	
Quiescent Current Change	$\Delta I_q$	$8\text{V} \leq V_i \leq 20\text{V}$	0-125 $^\circ\text{C}$		1.5	mA	
	$\Delta I_q$	$1\text{mA} \leq I_o \leq 40\text{mA}$	0-125 $^\circ\text{C}$		0.1	mA	
Output Noise Voltage	$V_N$	10Hz $\leq f \leq 100\text{KHz}$	$25^\circ\text{C}$	42		$\mu\text{V}$	
Ripple Rejection	RR	$8\text{V} \leq V_i \leq 20\text{V}, f=120\text{Hz}$	0-125 $^\circ\text{C}$	41	49	dB	
Dropout Voltage	$V_d$	$25^\circ\text{C}$		1.7		V	

### TYPICAL APPLICATION

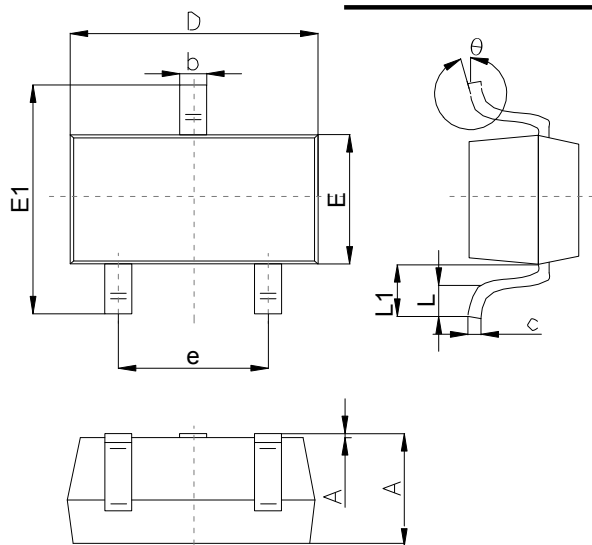


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

**Typical Characteristics**
**78L05/12/24 Output Characteristics**

**78L05/12/24 Load Characteristics**

**78L05/12/24 Thermal Shutdown**

**78L00 Series Short Circuit Output Current**

**78L05 Quiescent Current vs Input Voltage**

**PD-TA**


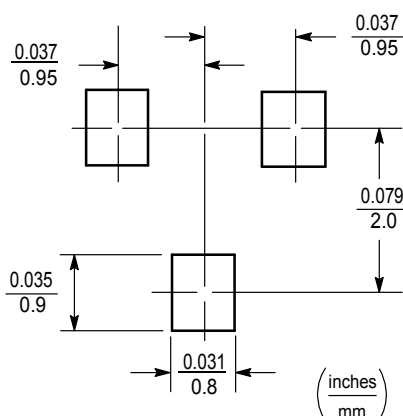
## Outlitne Drawing

### SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	0.90		1.40
A1	0.00		0.10
b	0.30		0.50
c	0.08		0.20
D	2.80	2.90	3.10
E	1.20		1.60
E1	2.25		2.80
e	1.80	1.90	2.00
L	0.10		0.50
L1	0.4		0.55
$\theta$	0°		10°

### Suggested Pad Layout



**Note:**

1. Controlling dimension:in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

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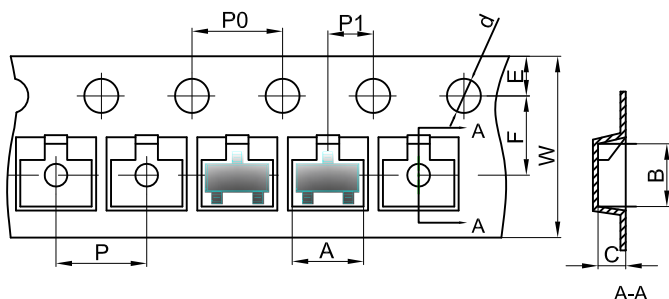
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## SOT-23 Tape and Reel

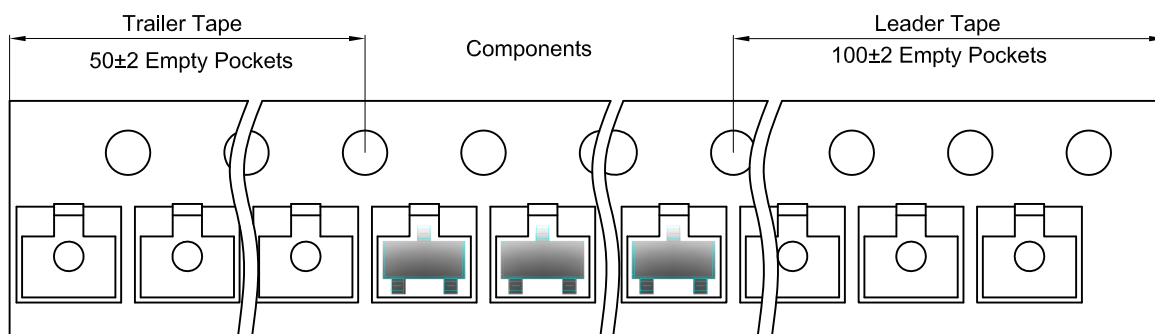
### SOT-23 Embossed Carrier Tape


**Packaging Description:**

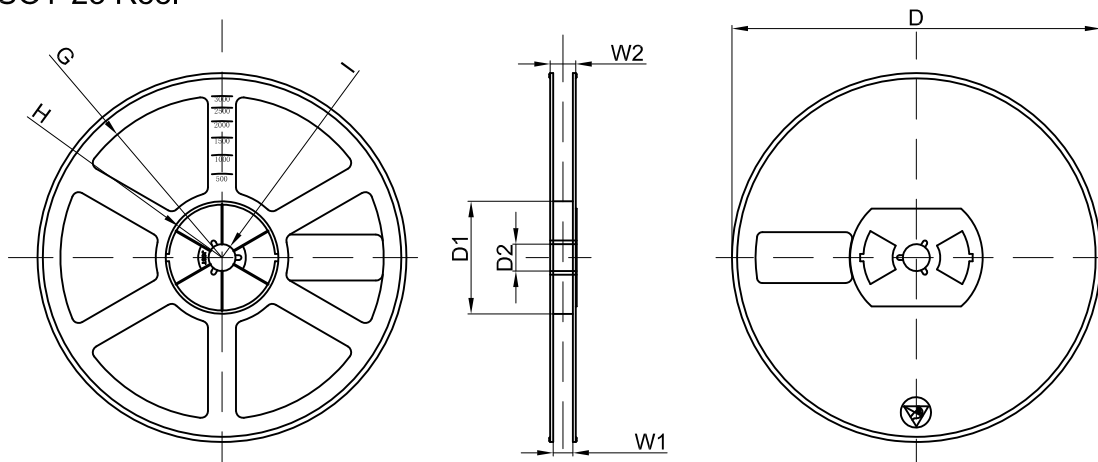
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

### SOT-23 Tape Leader and Trailer



### SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 Inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	