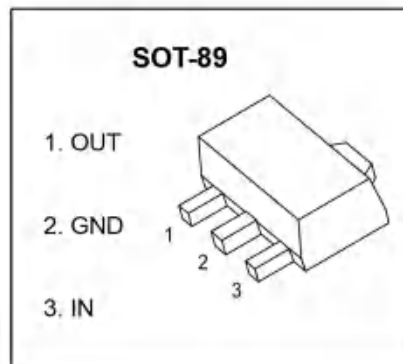


78L05 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 $I_{OM}: 0.1A$
- Output voltage
 $V_O: 5V$
- Continuous total dissipation
 $P_D: 0.6 W (T_a = 25 ^\circ C)$



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

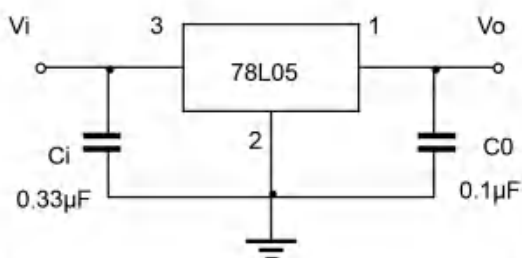
Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	$^\circ C/W$
Operating Junction Temperature Range	T_{OPR}	-40~+125	$^\circ C$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ C$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output voltage	V_o		25 $^\circ C$	4.80	5.0	5.20	V
				4.85	5.0	5.15	V
		$7V \leq V_i \leq 20V, I_o = 1mA \sim 40mA$	0-125 $^\circ C$	4.90	5.0	5.10	V
				4.75	5.0	5.25	V
Load Regulation	ΔV_o	$I_o = 1mA \sim 100mA$	25 $^\circ C$	15	60	mV	
		$I_o = 1mA \sim 40mA$	25 $^\circ C$	8	30	mV	
Line regulation	ΔV_o	$7V \leq V_i \leq 20V$	0-125 $^\circ C$	32	150	mV	
		$8V \leq V_i \leq 20V$	25 $^\circ C$	26	100	mV	
Quiescent Current	I_q		25 $^\circ C$	3.8	6	mA	
Quiescent Current Change	ΔI_q	$8V \leq V_i \leq 20V$	0-125 $^\circ C$		1.5	mA	
	ΔI_q	$1mA \leq V_i \leq 40mA$	0-125 $^\circ C$		0.1		
Output Noise Voltage	V_N	$10Hz \leq f \leq 100KHz$	25 $^\circ C$	42		$\mu V/V_o$	
Ripple Rejection	RR	$8V \leq V_i \leq 20V, f=120Hz$	0-125	41	49	dB	
Dropout Voltage	V_d		25 $^\circ C$	1.7		V	

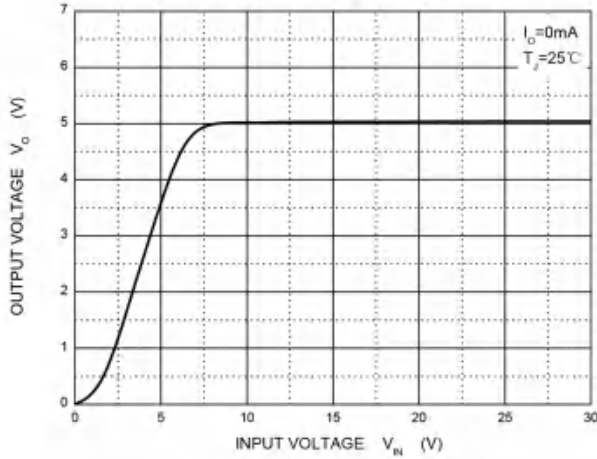
* Pulse test.

TYPICAL APPLICATION

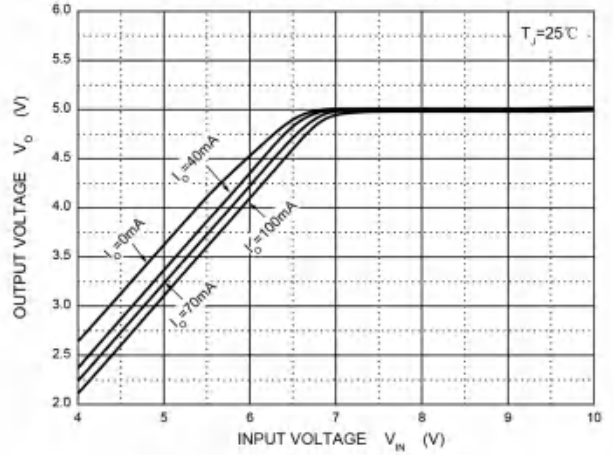


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

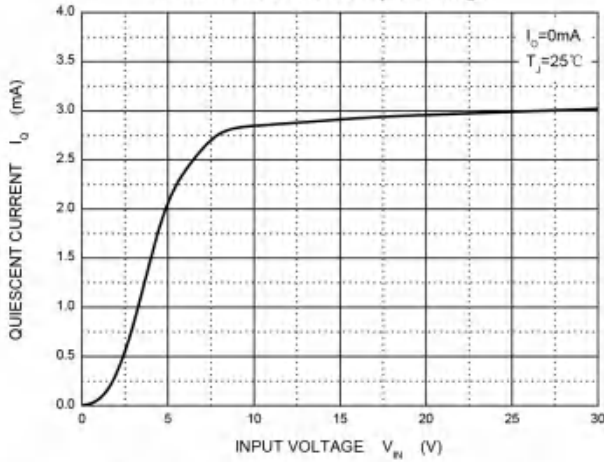
Output Characteristics



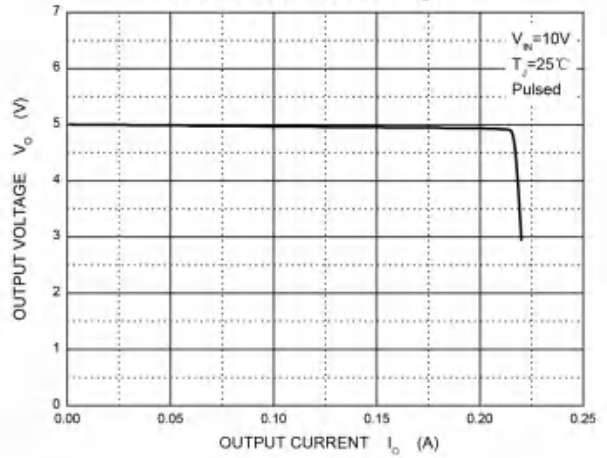
Dropout Characteristics



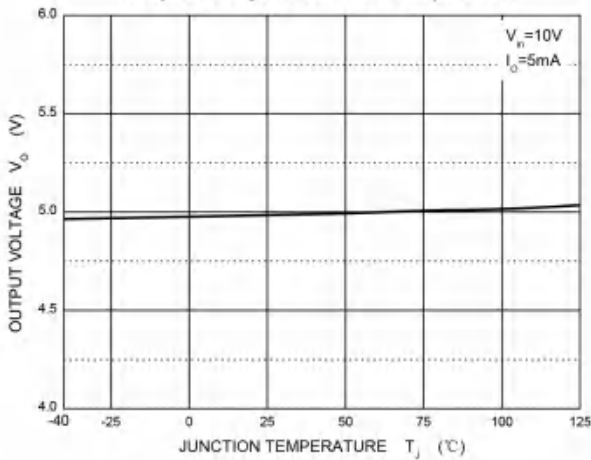
Quiescent Current vs Input Voltage



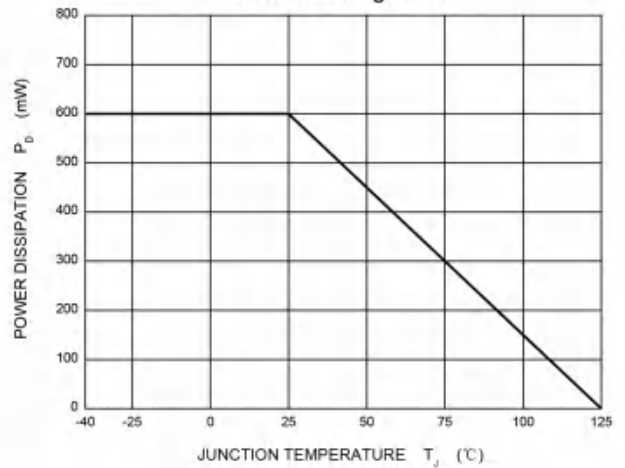
Current Cut-off Grid Voltage



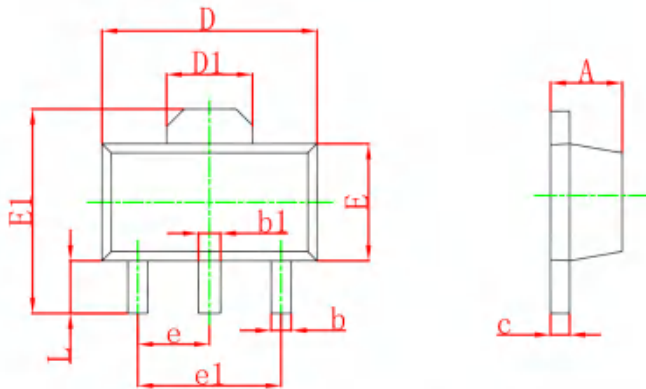
Output Voltage vs Junction Temperature



Power Derating Curve

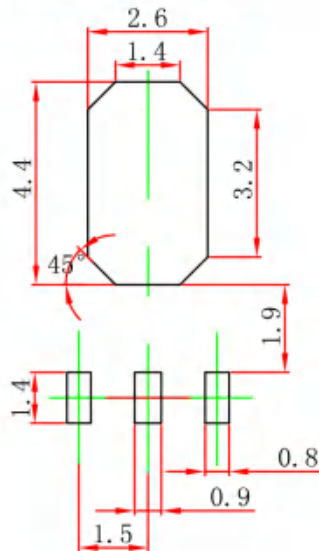


SOT-89 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

SOT-89 Suggested Pad Layout



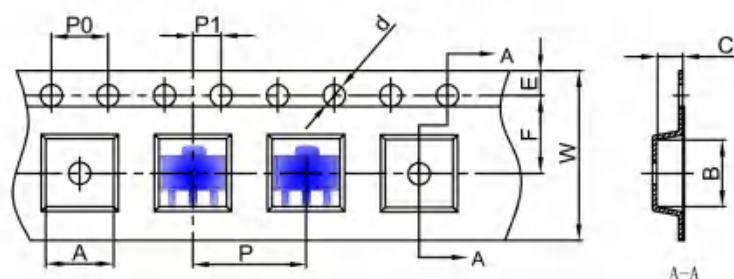
Note:

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

NOTICE

MLCCBASE reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. MLCCBASE does not assume any liability arising out of the application or use of any product described herein.

SOT-89 Embossed Carrier Tape



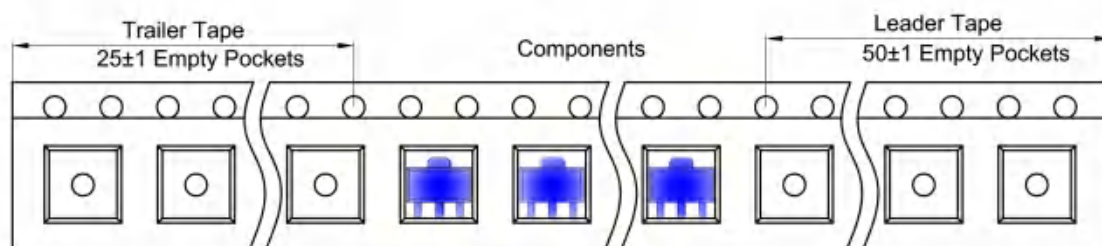
Packaging Description:

SOT-89 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 1,000 units per 7" or 18.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

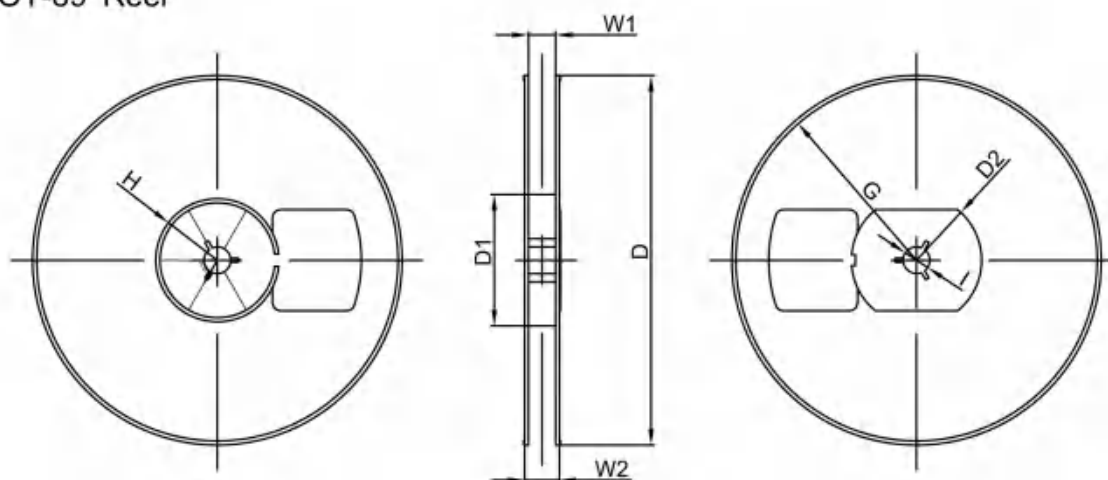
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89 Tape Leader and Trailer



SOT-89 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	