

TDSIEMIC

拓電半導體

自主封測 品質把控 售後保障

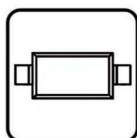
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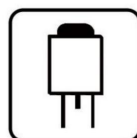
電源管理



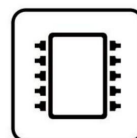
顯示驅動



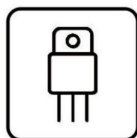
二三極管



LDO穩壓器



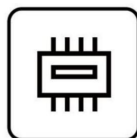
觸摸芯片



MOS管



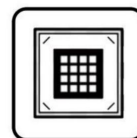
運算放大器



存儲芯片



MCU



串口通信

TD1085-ADJ

產品規格說明書

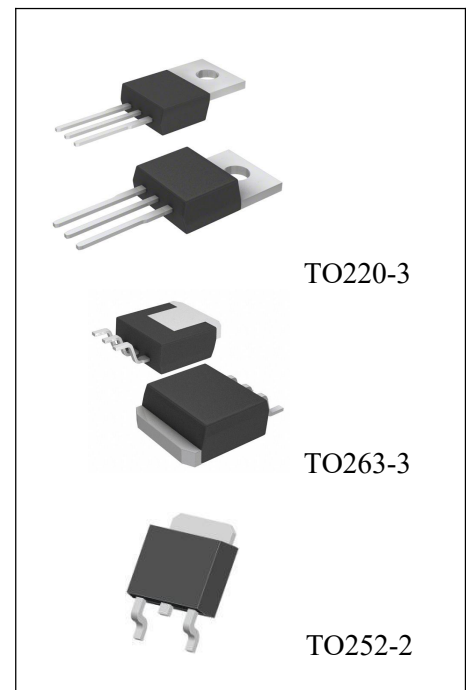
General Descriptin

The TD1085 is a positive and low dropout three-terminal voltage regulator with 3A output current capability. This device is designed for use in low voltage applications that offers lower dropout voltage and faster transient response. This device is fully protected against over current faults, over temperature operation, reversed input polarity, reversed lead insertion, transient voltage spike ...etc. On-Chips trimming the reference voltage to 1 % and features the low dropout of maximum 1.45 volts.

The TD1085 Series regulators are available in the popular industry standard TO220-3、TO263-3 and TO252-2 packages.

Features

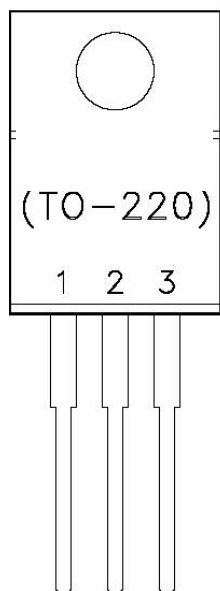
- Very easy to use ,Three terminal adjustable or fixed
Output voltage 1.5V,1.8V,2.5V,3.3V, 5V and ADJ
- Low dropout voltage: 1.3V typical at up to 3 A
- Low ground current
- Fast transient response
- Current & thermal limiting
- Line regulation: 0.5% typical
- Load regulation: 0.5% typical



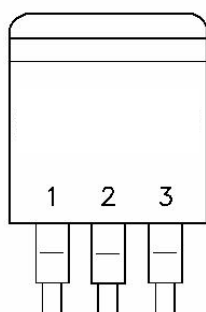
Applications

- High current microprocessor supplies
- Low voltage logic supply
- Powering VGA & sound card
- Portable instrumentation
- Constant current regulator
- Post regulator for switching power supply

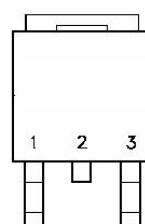
Pin Configuration



TD1085(TO220-3)



TD1085(TO263-3)



TD1085(TO252-2)

1 : GND
2 : OUTPUT
3 : INPUT

Absolute Maximum Ratings (Ta=25 °C)

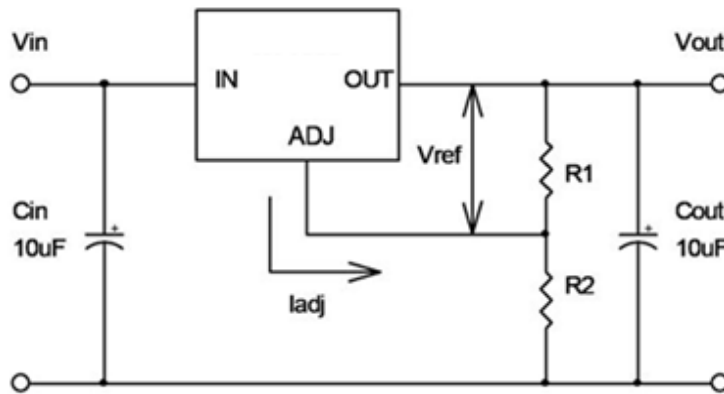
Characteristic		Value	Unit
Maximum Supply Voltage		15	V
Internal Power Dissipation P _D	TO220-3	2	W
	TO263-3	2	
	TO252-2	1.2	
Thermal Resistance Junction to Case, θ_{JC}	TO220-3	3	°C/W
	TO263-3	3	
	TO252-2	5	
Thermal Resistance Junction to Ambient, θ_{JA}	TO220-3	60	°C/W
	TO263-3	60	
	TO252-2	105	
Lead Temperature (Soldering, 10 Seconds)		260	°C
Operating Junction Temperature		-25 ~ 125	°C
Storage Temperature		-40 ~ +150	°C

Electrical Characteristics(unless otherwise specified: Ta= 25 °C)

Characteristics		Symbol	Test conditions	Min	Typ	Max	Unit
Reference voltage		V _{REF}	V _{IN} = 2.75 V, I _{OUT} = 10 m A	1.225	1.250	1.275	V
			V _{IN} = 2.70V~7.0 V, I _{OUT} = 10mA ~ 3A	1.215	1.25	1.287	
Output Voltage	TD1085-1 . 5	V _{out}	V _{IN} = 4.0 V, I _{OUT} = 10 m A	1.470	1.500	1.530	V
			V _{IN} = 3.0 V, I _{OUT} = 10 m A~ 3A	1.455	1.500	1.545	
	TD1085-1 . 8		V _{IN} = 4.3 V, I _{OUT} = 10 m A	1.764	1.800	1.836	
			V _{IN} = 3.3 V, I _{OUT} = 10 m A~ 3A	1.746	1.800	1.854	
	TD1085-2 . 5		V _{IN} = 5.0 V, I _{OUT} = 10 m A	2.450	2.500	2.550	
			V _{IN} = 4.0 V, I _{OUT} = 10 m A~ 3A	2.425	2.500	2.575	
	TD1085-3 . 3		V _{IN} = 5.8 V, I _{OUT} = 10 m A	3.234	3.300	3.366	
			V _{IN} = 4.8 V, I _{OUT} = 10 m A~ 3A	3.200	3.300	3.399	

	TD1085-5 . 0		$V_N = 7.5 \text{ V}, I_{OUT} = 10 \text{ mA}$	4.90	5.00	5.10	
			$V_{IN} = 6.5 \text{ V}, I_{OUT} = 10 \text{ mA} \sim 3 \text{ A}$	4.85	5.00	5.15	
Dropout voltage	V_D		$\Delta V_{REF} = 1\%, I_{OUT} = 3 \text{ A}$		1.3	1.45	V
Line regulation	$REG_{(LINE)}$		$(V_{OUT} + 1.5 \text{ V}) \leq V_{IN} \leq 7 \text{ V}, I_{OUT} = 10 \text{ mA}$		0.5	2	%
Load regulation	$REG_{(LOAD)}$		$(V_{IN} - V_{OUT}) = 3 \text{ V}, 10 \text{ mA} \leq I_{OUT} \leq 3 \text{ A}$		0.5	2.5	%
Minimum load current	I_O		$1.5 \text{ V} \leq (V_{IN} - V_{OUT}) \leq 5.75 \text{ V}$		10		mA
Adjust pin current	I_{ADJ}				55	100	μA
Current limit	I_{CL}		$V_{IN} - V_{OUT} = 2 \text{ V}$	4.0	5.0		A
RMS output noise	V_N				0.003 of V_{OUT}		%
Ripple rejection ratio	R_A		$f = 120 \text{ Hz}, C_{ADJ} = 22 \mu\text{F}$ for ADJ pin, $V_{IN} = 5 \text{ V}, I_{OUT} = 3 \text{ A}$	60	72		dB

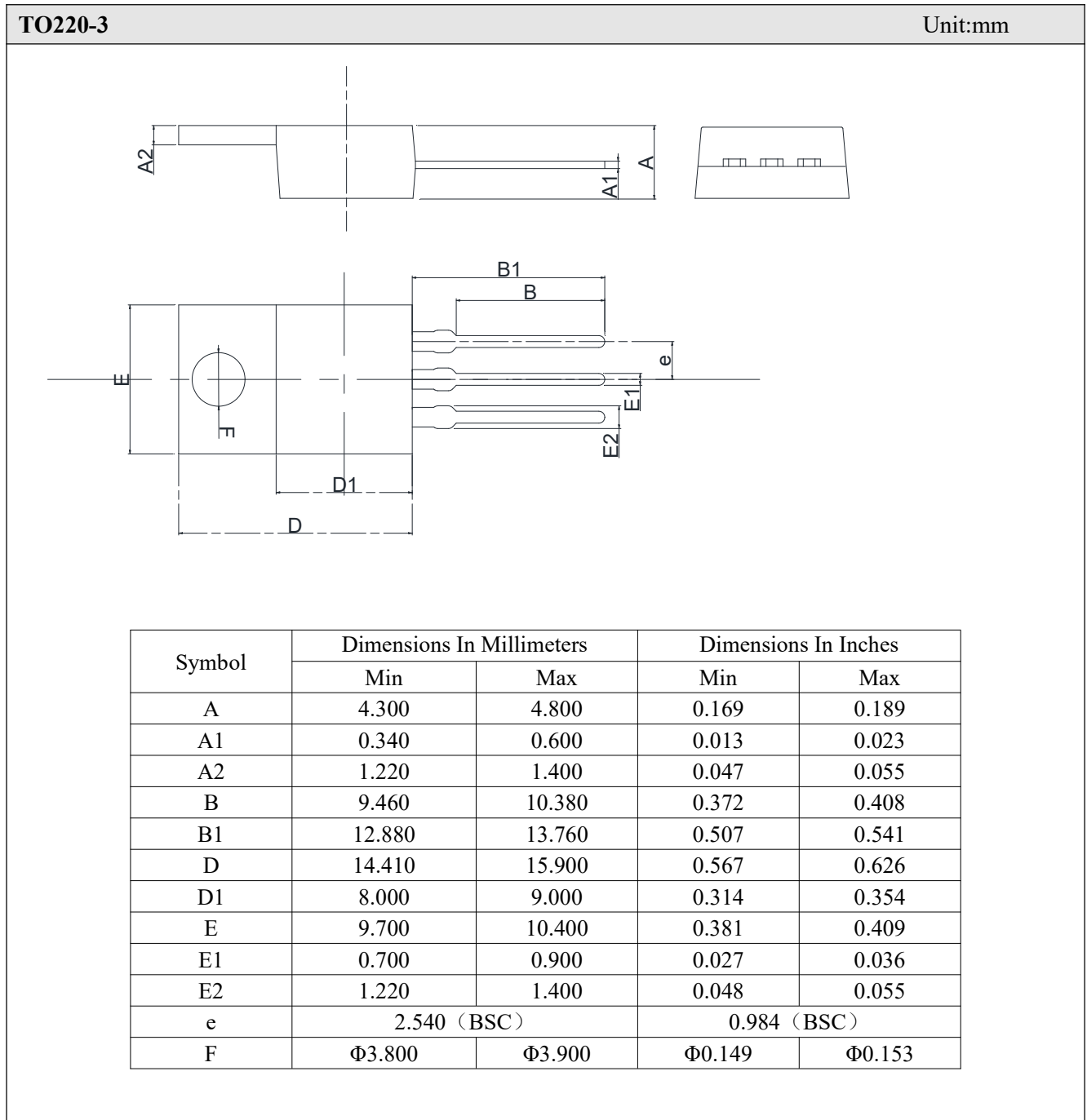
Application Circuit



$$V_o = V_{ref} (1 + R_2/R_1) + I_{adj} \times R_2$$

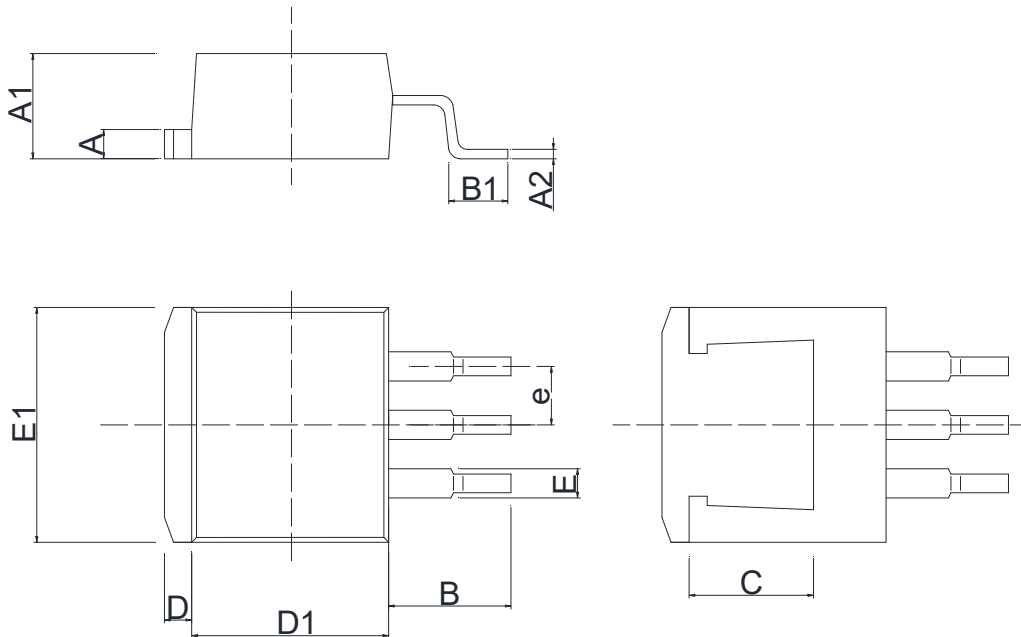
1. C_{in} needed if device is far from filter capacitors.
2. C_{out} required for stability.

Outline Dimensions



TO263-3

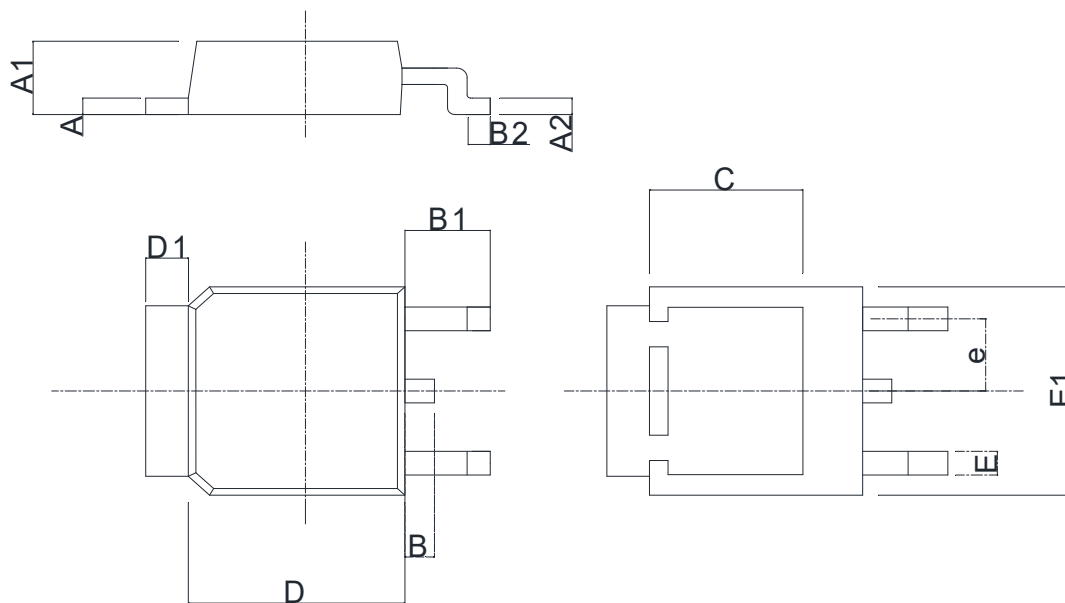
Unit:mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.170	1.370	0.046	0.054
A1	4.470	4.670	0.176	0.184
A2	0.310	0.530	0.012	0.021
B	5.080	5.480	0.200	0.216
B1	2.340	2.740	0.092	0.108
C	5.600 REF		0.220 REF	
D	1.170	1.370	0.046	0.054
D1	8.500	8.900	0.335	0.350
E	1.170	1.370	0.046	0.054
E1	10.010	10.310	0.394	0.406
e	2.540 (BSC)		0.100 (BSC)	

TO252-2

Unit:mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.470	0.570	0.018	0.023
A1	2.220	2.380	0.087	0.094
A2	0.470	0.570	0.018	0.023
B	0.820	0.840	0.032	0.033
B1	2.380	2.480	0.093	0.098
B2	0.500	0.520	0.019	0.021
C	4.250	4.450	0.167	0.176
D	6.000	6.200	0.236	0.245
D1	1.150	1.250	0.045	0.050
E	0.650	0.850	0.025	0.034
E1	6.450	6.750	0.253	0.266
e	2.285 (BSC)		0.090 (BSC)	