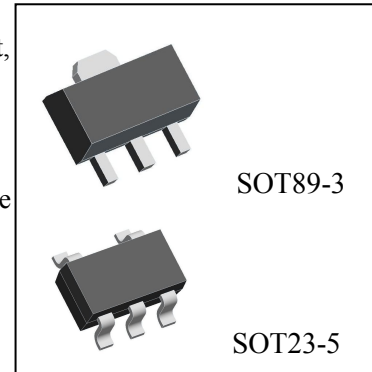


### General Description

The D7855 series is a high accuracy, high input voltage low quiescent current, high speed, and low dropout Linear regulator with high ripple rejection. The device is manufactured with Bi-CMOS process.

The D7855 offers over-current limit and over temperature protection to ensure the device working in well conditions.

The D7855 regulators are available in standard SOT89-3 and SOT23-5 packages.



### Features

- Supply Voltage : 4.75V~40V
- Output Range : 1.8V~10V
- Output Accuracy : <+/-2%
- Output Current : 250mA (Up to 500mA Typ.)
- PSRR : 50dB @ 100Hz
- Dropout Voltage : 850mV @ I<sub>OUT</sub>=250mA
- Quiescent Current : 6μA@V<sub>IN</sub>=7V(Typ.)
- Recommend Capacitor : 10μF

### Package Information

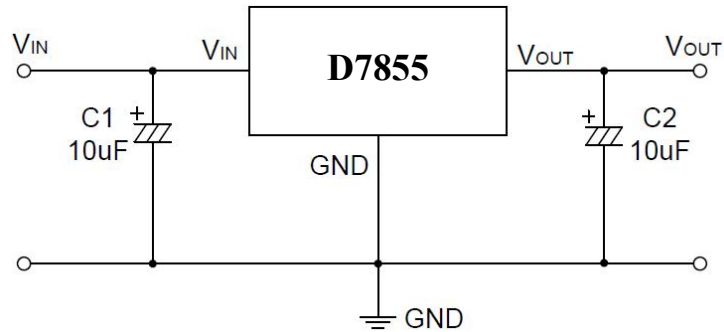
Part NO.	Package Description	Package Marking	Package Option
D7855-3.3(L)	SOT89-3	D7855 33 XXXX	1000/Reel
D7855-3.3	SOT23-5	D7855 33 XXX	3000/Reel
D7855-3.6(L)	SOT89-3	D7855 36 XXXX	1000/Reel
D7855-3.6	SOT23-5	D7855 36 XXX	3000/Reel
D7855-5.0(L)	SOT89-3	D7855 50 XXXX	1000/Reel
D7855-5.0	SOT23-5	D7855 50 XXX	3000/Reel

CHMC:Trademark

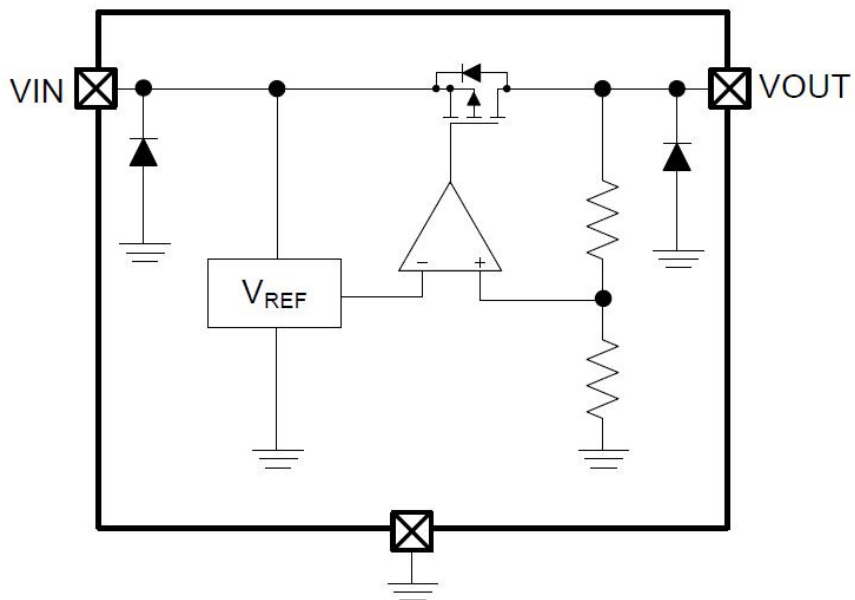
D7855-3.3/D7855-3.6/D7855-5.0:Part NO.

XXXX/XXX:Lot NO.

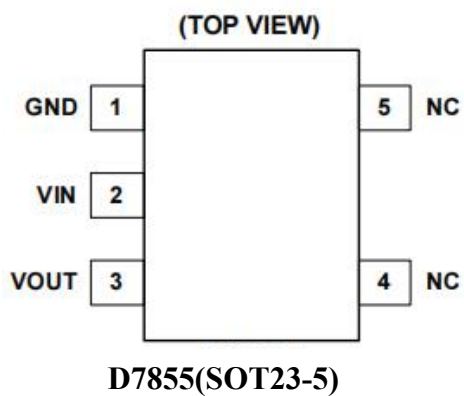
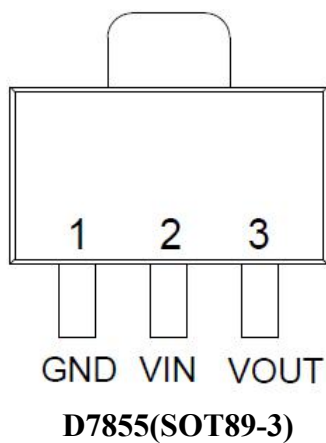
## Typical Application



## Functional Block Diagram



## Pin Configuration



**Pin Description****SOT89-3:**

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V <sub>IN</sub>	Voltage Input
3	V <sub>OUT</sub>	Voltage Output

**SOT23-5:**

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V <sub>IN</sub>	Voltage Input
3	V <sub>OUT</sub>	Voltage Output
4	NC	No internal connection
5	NC	No internal connection

**Absolute Maximum Ratings** (Ta=25°C)

Parameter Name	Rating	Unit
Power Dissipation	Internal limited	mW
V <sub>IN</sub> Range	-0.3~45	V
V <sub>OUT</sub> Range	-0.3~10	V
Lead Temperature Range	260	°C
Storage Temperature Range	-55~150	°C
Operating Junction Temperature Range	125	°C
ESD MM	400	V
ESD HBM	4K	V

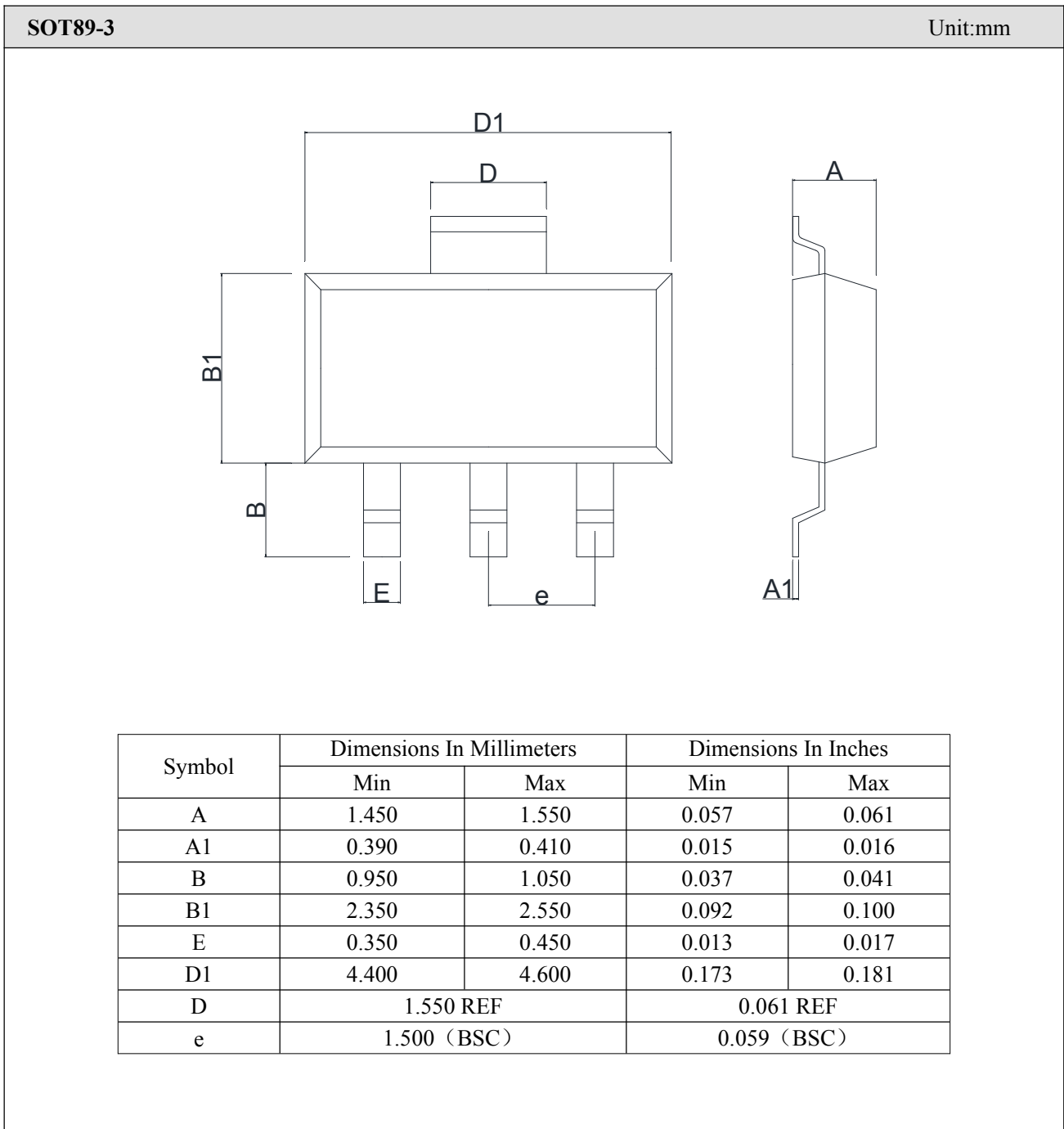
**Recommended Operating Conditions** (Ta=25°C)

Parameter Name	Rating	Unit
Operating Supply Voltage	4.75~40	V
Operating Temperature Range	-40~85	°C
Thermal Resistance(On PCB),R <sub>θJA</sub>	SOT89-3	100
	SOT23-5	250
Power Dissipation	SOT89-3	1000
	SOT23-5	250

## Electrical Characteristics (Ta=25°C, V<sub>IN</sub>=12V, C<sub>IN</sub>=C<sub>OUT</sub>=10uF, unless otherwise noted)

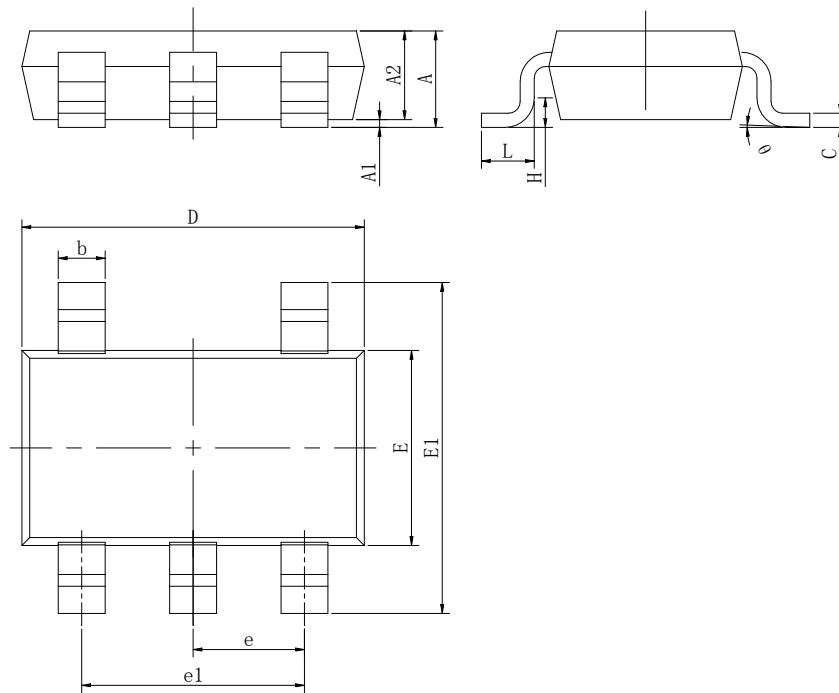
Parameter Name	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Range	V <sub>IN</sub>	I <sub>OUT</sub> =10mA	4.75		40	V
Output Voltage	V <sub>OUT</sub>	V <sub>IN</sub> =12V, I <sub>OUT</sub> =10mA	3.234	3.300	3.366	V
			3.528	3.600	3.672	
			4.9	5.0	5.1	
Maximum Output Current	I <sub>OUT_PK</sub>	V <sub>IN</sub> =12V, R <sub>L</sub> =1Ω		500		mA
Quiescent Current	I <sub>Q</sub>	V <sub>IN</sub> =7V, No load		6	8	μA
		V <sub>IN</sub> =24V, No load		7.5	10	
		V <sub>IN</sub> =40V, No load		10	15	
Dropout Voltage	V <sub>DROP</sub>	I <sub>OUT</sub> =1mA		2	12	mV
		I <sub>OUT</sub> =100mA		300	400	
		I <sub>OUT</sub> =250mA		850	1200	
Line Regulation	LNR	V <sub>I</sub> =7~24V, V <sub>OUT</sub> =5V, I <sub>OUT</sub> =1mA		0.02		% / V
		V <sub>IN</sub> =7~45V, V <sub>OUT</sub> =5V, I <sub>OUT</sub> =1mA		0.1		
Load Regulation	LDR	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1~100mA		0.6		%
		V <sub>IN</sub> =7V, I <sub>OUT</sub> =1~250mA		2.0		
Output Noise	e <sub>NO</sub>	I <sub>OUT</sub> =10mA	-100		100	μV
Ripple Rejection	PSRR	V <sub>IN</sub> =10V V <sub>PP</sub> =0.5V I <sub>OUT</sub> =1mA	f=100Hz		50	dB
			f=1KHz		40	
			f=10KHz		30	
Thermal Protection	T <sub>SD</sub>	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1mA		155		°C
Thermal Protection Hys	T <sub>SD_HYS</sub>	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1mA		30		°C
Temperature Coefficient	ΔV <sub>o</sub> /ΔT	V <sub>IN</sub> =12V, I <sub>OUT</sub> =1mA		±0.4		mV/°C

## Outline Dimensions



SOT23-5

Unit: mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.130	0.000	0.005
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.95 (BSC)		0.037(BSC)	
e1	1.90 (BSC)		0.075(BSC)	
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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