D7855

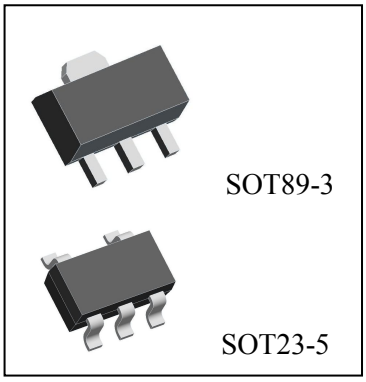
High Input Voltage,Low Quiescent Current LDO

General Description

The D7855 series is a high accuracy, high input voltage low quiescent current, high speed, and low dropout Liner 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

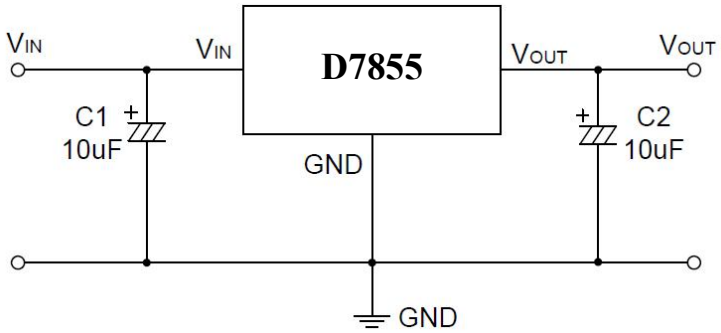
- Supply Voltage : 4.75V~40V
- Output Range : 1.8V~10V
- Output Accuracy : <+/-2%
- Output Current : 250mA (Up to 500mA Typ.)
- PSRR : 50dB @ 100Hz
- Dropout Voltage : 850mV @ I_{OUT}=250mA
- Quiescent Current : 6μA@V_{IN}=7V(Typ.)
- Recommend Capacitor : 10μF

Package Information

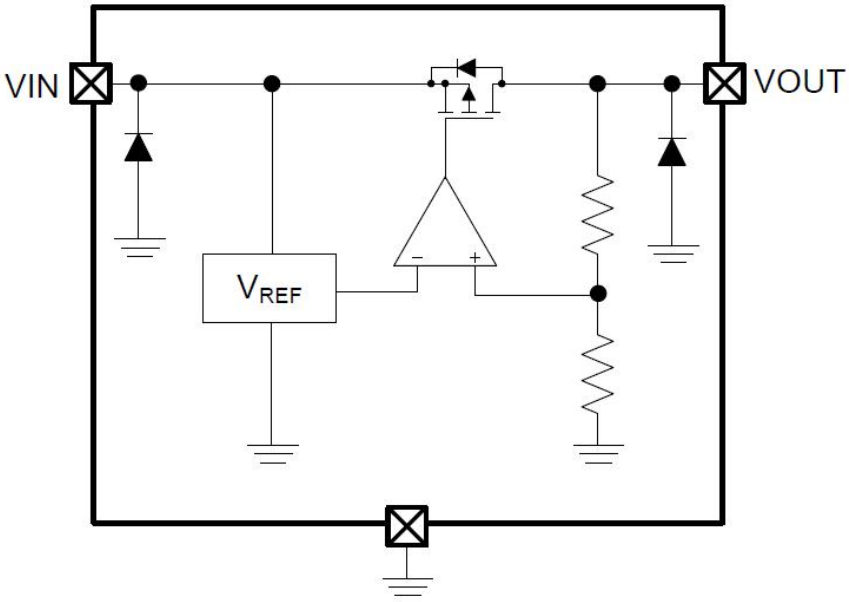
Part NO.	Package Description	Package Marking	Package Option
D7855-3.3(L)	SOT89-3	D7855 33 XXXX	1000/Reel
D7855-3.3	SOT23-5	D7855 33 XXX	3000/Reel
D7855-3.6(L)	SOT89-3	D7855 36 XXXX	1000/Reel
D7855-3.6	SOT23-5	D7855 36 XXX	3000/Reel
D7855-5.0(L)	SOT89-3	D7855 50 XXXX	1000/Reel
D7855-5.0	SOT23-5	D7855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

CHMC:Trademark D7855-3.3/D7855-3.6/D7855-5.0:Part NO. XXXX/XXX:Lot NO.

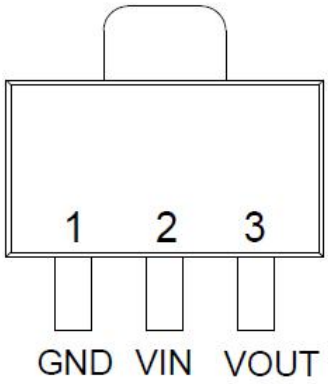
Typical Application



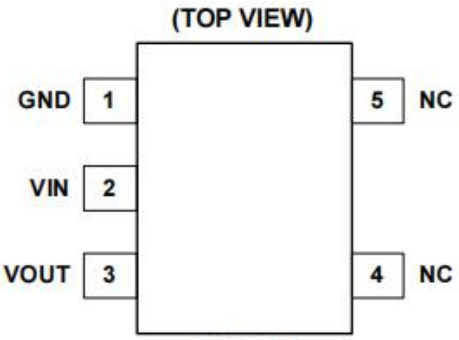
Functional Block Diagram



Pin Configuration



D7855(SOT89-3)



D7855(SOT23-5)

Pin Description

SOT89-3:

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V_{IN}	Voltage Input
3	V_{OUT}	Voltage Output

SOT23-5:

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V_{IN}	Voltage Input
3	V_{OUT}	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_{IN} Range	-0.3~45	V
V_{OUT} 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)

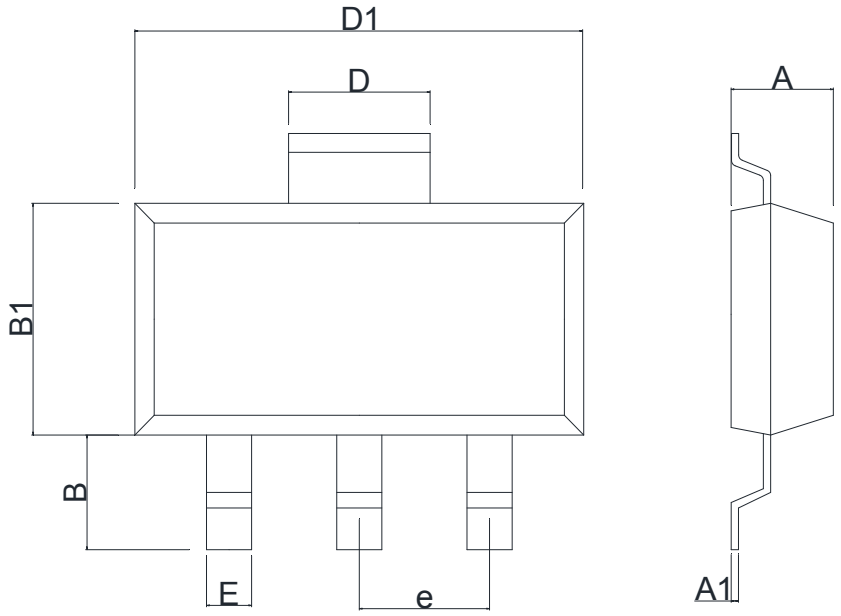
Parameter Name		Rating	Unit
Operating Supply Voltage		4.75~40	V
Operating Temperature Range		-40~85	°C
Thermal Resistance(On PCB),$R_{\theta JA}$	SOT89-3	100	°C/W
	SOT23-5	250	
Power Dissipation	SOT89-3	1000	mW
	SOT23-5	250	

Electrical Characteristics (Ta=25°C,V_{IN}=12V,C_{IN}=C_{OUT}=10uF,unless otherwise noted)

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

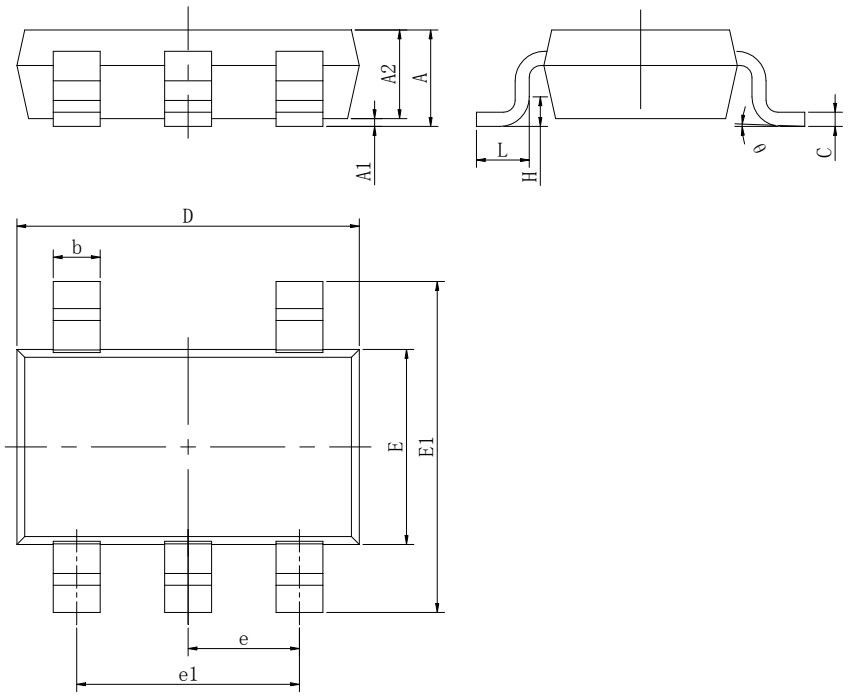
Outline Dimensions

SOT89-3 Unit:mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.450	1.550	0.057	0.061
A1	0.390	0.410	0.015	0.016
B	0.950	1.050	0.037	0.041
B1	2.350	2.550	0.092	0.100
E	0.350	0.450	0.013	0.017
D1	4.400	4.600	0.173	0.181
D	1.550 REF		0.061 REF	
e	1.500（BSC）		0.059（BSC）	

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°

Statement

- Silicore Technology reserves the right to make changes without further notice to any products or specifications herein. Before customers place an order, customers need to confirm whether datasheet obtained is the latest version, and to verify the integrity of the relevant information.

- Failure or malfunction of any semiconductor products may occur under particular conditions, customers shall have obligation to comply with safety standards when customers use Silicore Technology products to do their system design and machine manufacturing, and take corresponding safety measures in order to avoid potential risk of failure that may cause personal injury or property damage.

- The product upgrades without end, Silicore Technology will wholeheartedly provide customers integrated circuits that have better performance and better quality.