

High Driver LDO Regulator

● Features

- Low power consumption
- Low voltage drop
- Output Voltage Range 2.8V ~ 5V
- Low temperature coefficient
- High input voltage (up to 18V)
- Output current : 150mA (Typ.)
- Output voltage accuracy: $\pm 2\%$
- Ceramic Capacitor Compatible
- Package: TO-92, SOT-89-3, SOT-23

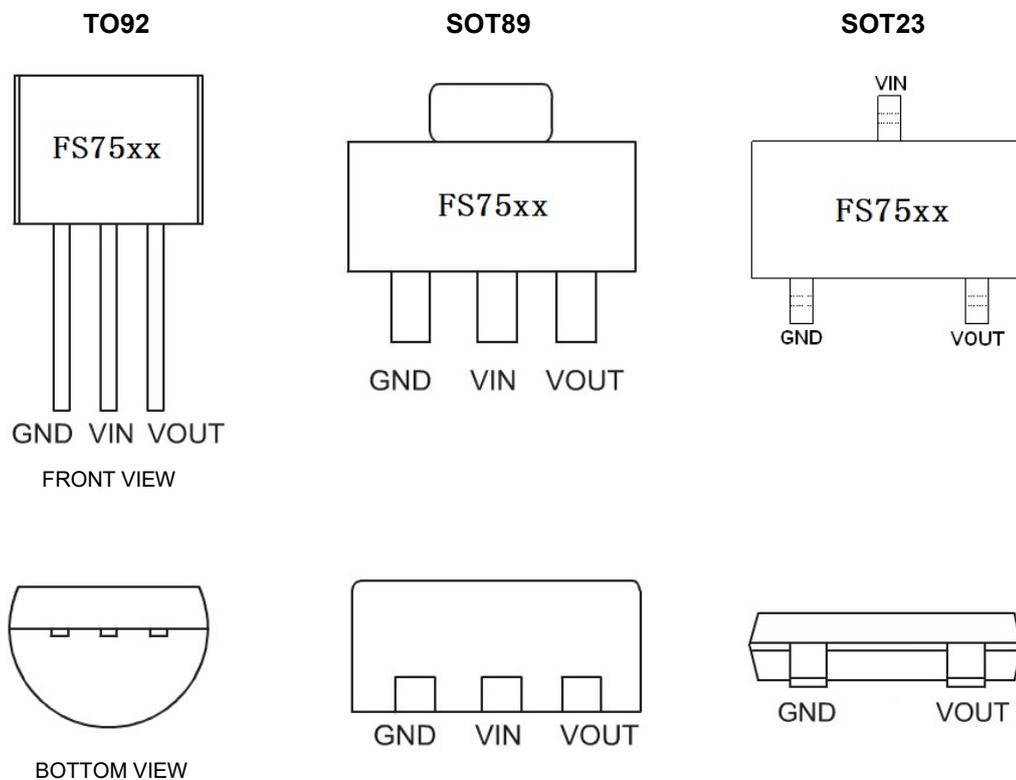
● Applications

- Battery powered equipment
- Audio/Video equipment
- Portable consumer equipments
- Communication equipment

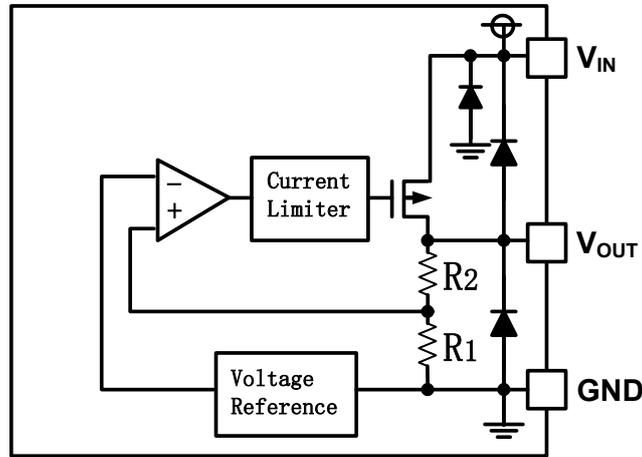
● General Description

The FS75XX series is a set of three-terminal high current low voltage regulator implemented in CMOS technology. They can deliver 150mA output current and allow an input voltage as high as 28V. They are available with several fixed output voltages ranging from 2.8V to 5V. CMOS technology ensures low voltage drop and low quiescent current.

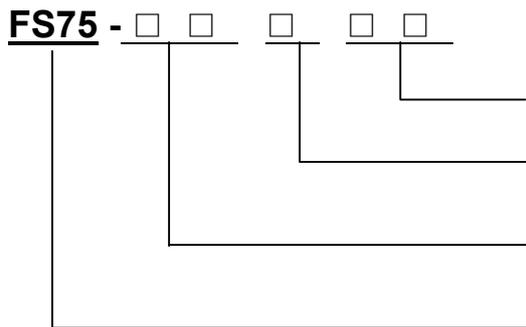
● Package Information



- **Functional Block Diagram**



- **Ordering information**



Package type
 TA=TO92; SM=SOT89; SI=SOT23

Output Voltage Accuracy
 2: $\pm 2.0\%$

Output Voltage
 ... 30=3.0V 33=3.3V 50=5.0V ...

Indicates the product number

- **Absolute Maximum Ratings** (Unless otherwise specified: $T_a = 25^\circ\text{C}$)

PARAMETER		SYMBOL	RATINGS	UNITS
Supply Voltage		V_{IN}	$V_{SS}-0.3\sim V_{SS}+18$	V
Output Voltage		V_{OUT}	$V_{SS}-0.3\sim V_{IN}+0.3$	V
Power Dissipation	SOT-23	P_D	250	mW
	SOT-89		500	
	TO-92		700	
Operating Temperature		T_{opr}	-40~+85	°C
Storage Temperature		T_{stg}	-40~+125	
Soldering Temperature & Time		T_{solder}	260°C, 10s	

Note: Operating near the absolute maximum ratings may affect the device's reliability or make the device damage

● Electrical Characteristics

$V_{in}=V_{out(s)}+2V, C_{in}=C_{out}=10\mu F$ electronic, $T_a=25^\circ C$, Unless otherwise specified (Note1)

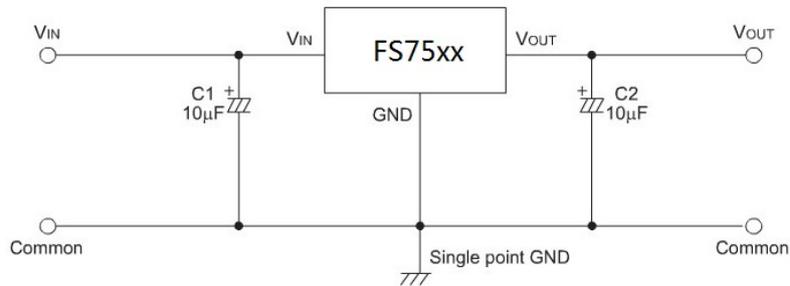
Parameter	Symbol	conditions	Min	Typ	Max	Unit
Output Voltage	$V_{out(E)}$	$I_{out}=10mA, V_{in}=V_{out(s)}+2V$	$V_{out(s)}\times 0.98$		$V_{out(s)}\times 1.02$	V
Output Current	I_{OUT}		100	150		mA
Load Regulation	ΔV_{out}	$1mA \leq I_{out} \leq 50mA$		30		mV
Dropout Voltage	V_{dif}	$I_{OUT}=10mA$		100		
Current Consumption	I_{ss}	No load		2.5	6	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{out} \times \Delta V_{IN}}$	$I_{out}=1mA, V_{OUT(S)}+2V \leq V_{in} \leq 28V$		0.1		%/V
Input Voltage	V_{IN}				28	V
Short Current	I_{short}	$V_{IN}=V_{OUT(S)}+2V, V_{OUT}=V_{SS}$		10		mA

Note:

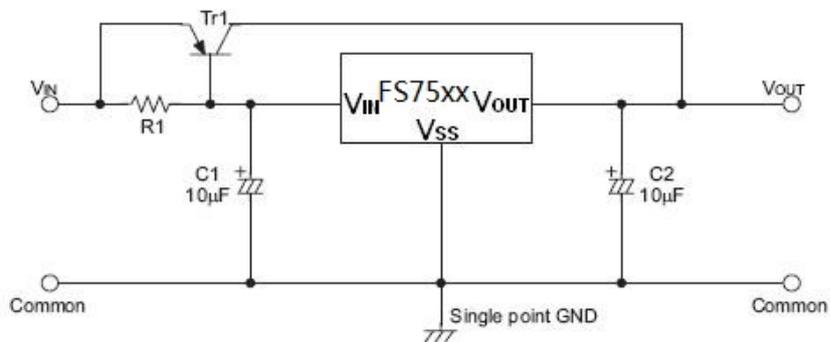
- $V_{out(s)}$ = Specified output Voltage
- $V_{out(E)}$ = Effective output Voltage (i.e. the output voltage when " $V_{out(Test)}+2.0V$ " is provided at the V_{IN} pin while, maintaining a certain I_{out} value)

● Typical Application Circuit (C_1 and C_2 are electronic capacitors)

1、Basic Circuit

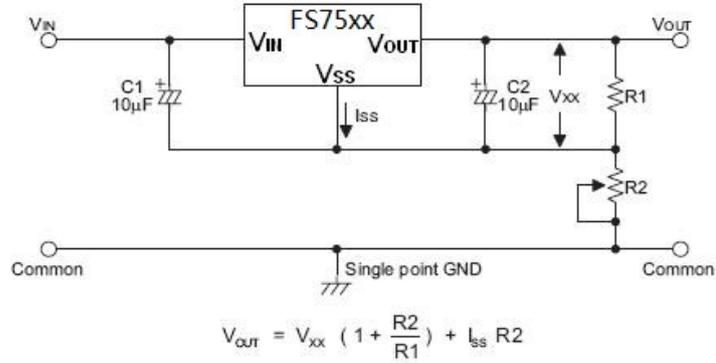


2. High Output Current Positive Voltage Regulator

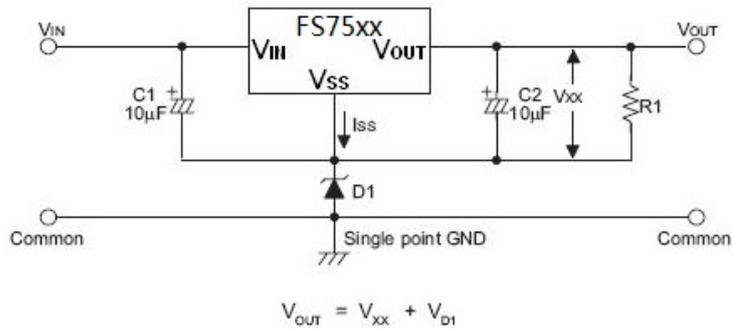


FS75xx

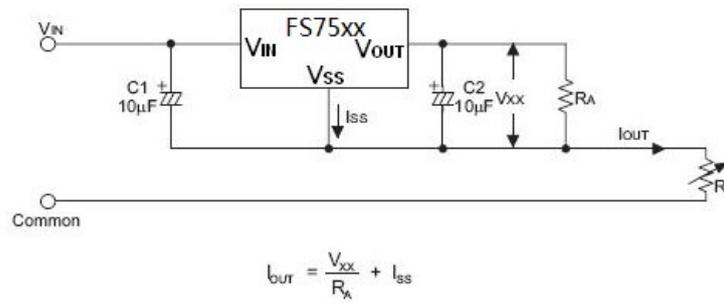
3. Circuit for Increasing Output Voltage



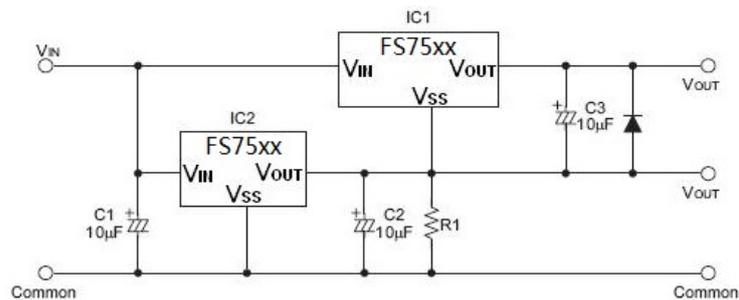
4. Circuit for Increasing Output Voltage



5. Constant Current Regulator

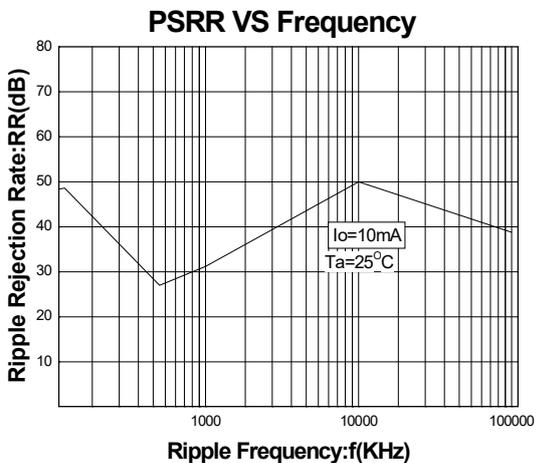
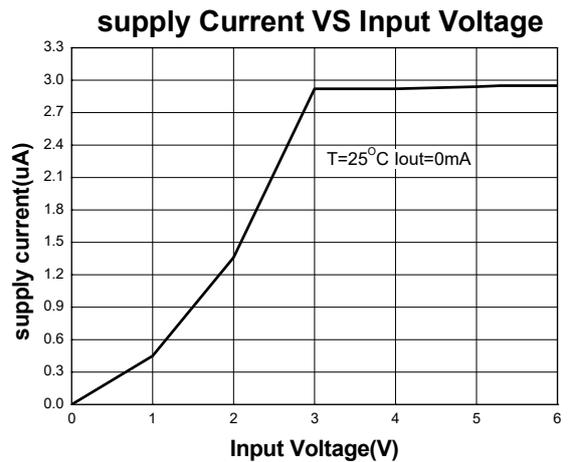
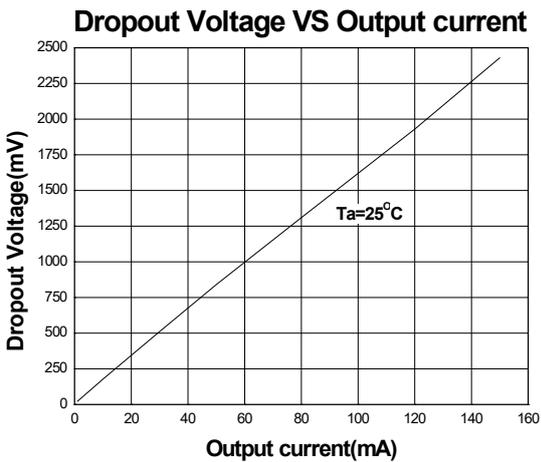
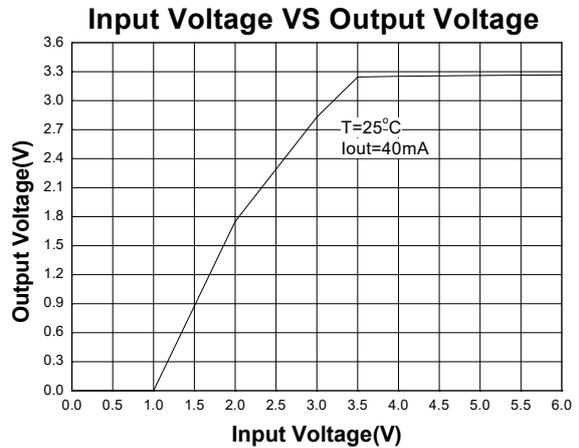
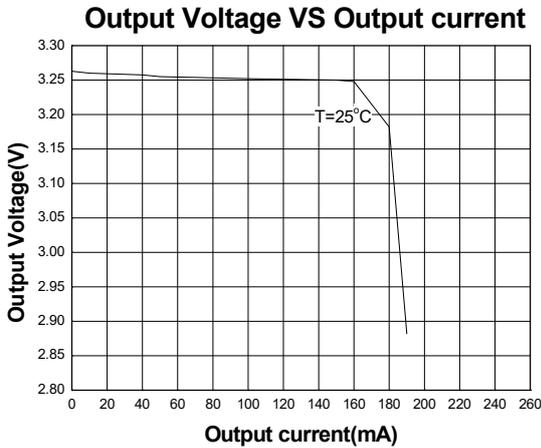


6. Dual Supply



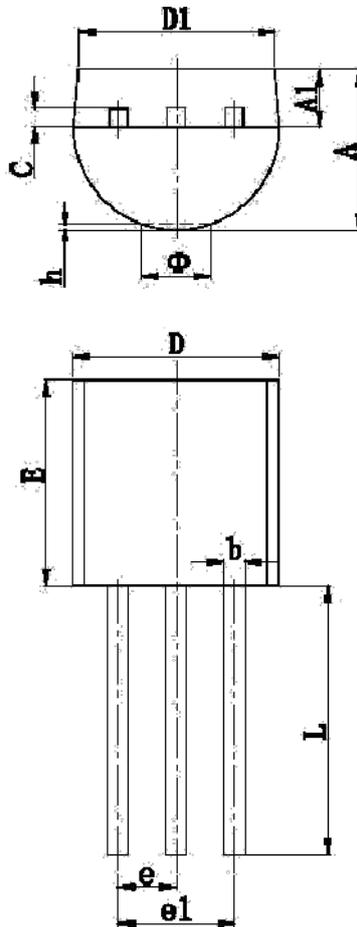
FS75xx

● **Typical Performance Characteristics** (For FS7533 2SM)



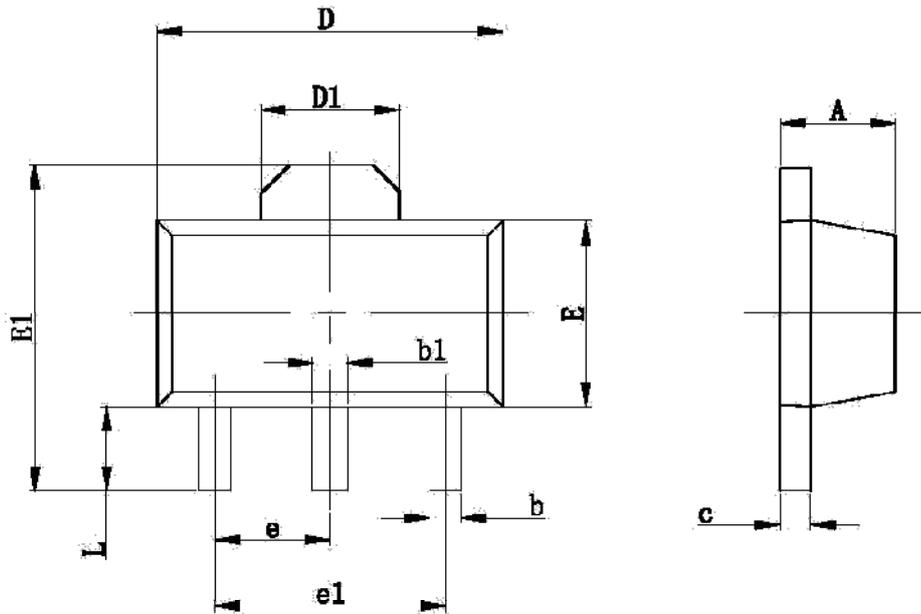
- PACKAGE INFORMATION

TO-92 PACKAGE OUTLINE DIMENSIONS



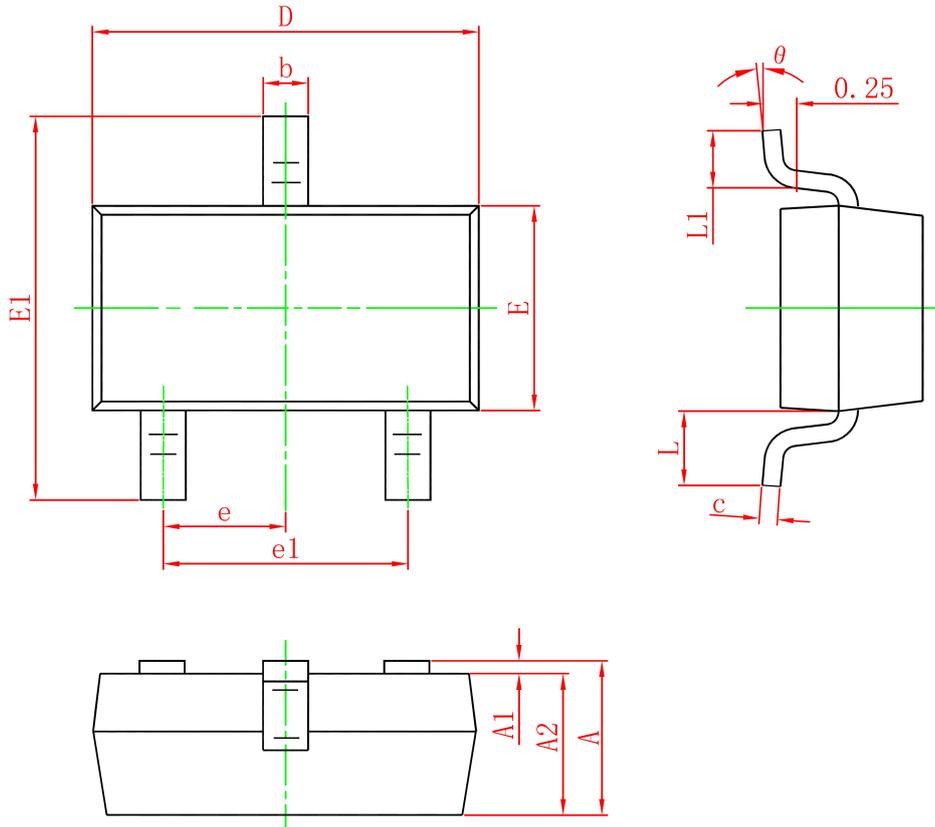
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

SOT-89-3 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	0.197
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-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°
UNIT:mm				