Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- High input voltage (up to 16V)
- Output voltage accuracy: tolerance ±2%
- TO92, SOT89 and SOT23 package

Applications

- Battery-powered equipment
- Communication equipment
- Audio/Video equipment

General Description

The Y 75XXM series is a set of three-terminal low power high voltage regulators implemented in CMOS technology. They allow input voltages as high as 18V. They are available with several fixed output voltages ranging from 2.1V to 6.0V. CMOS technology ensures low voltage drop and low quiescent current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain variable voltages and currents.

Selection Table

Part No.	Output Voltage	Package	Marking
Y7521Mxx	2.1V	TO92 SOT89 SOT23	75XXA-1(for TO92) 75XX-1(for SOT89) HTXX(for SOT23)
Y7523Mxx	2.3V		
Y7525Mxx	2.5V		
Y7527Mxx	2.7V		
Y7530Mxx	3.0V		
Y7533Mxx	3.3V		
Y7536Mxx	3.6V		
Y7540Mxx	4.0V		
Y7544Mxx	4.4V		
Y7545Mxx	4.5V		
Y7550Mxx	5.0V		
Y7560Mxx	6.0V		

Note:"XX" stands for output voltages. Other voltages can be specially customized

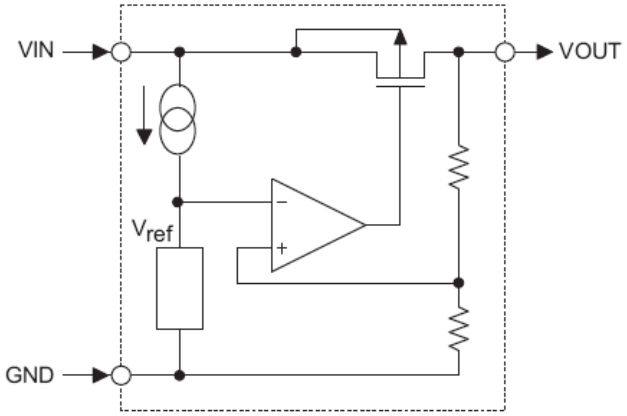
Order Information

Y75①②③④⑤

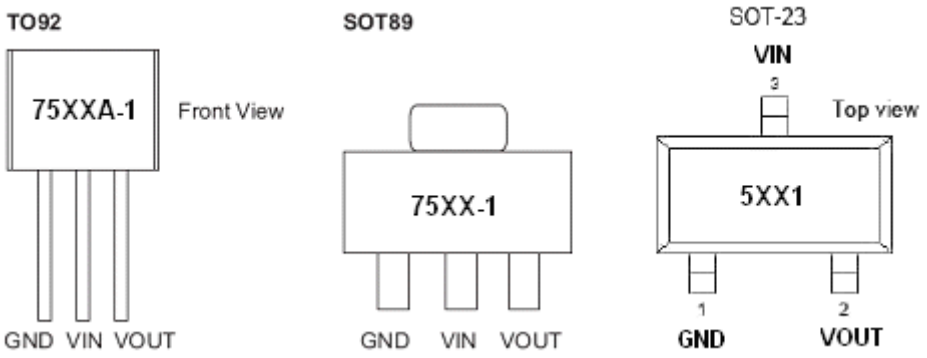
Designator	Symbol	Description
① ②	Integer	Output Voltage(2.1~6.0V)
③	M	Standard
④	T	Package:TO-92
	P	Package:SOT89-3
	N	Package:SOT23
	M	Package:SOT23-3
	M5	Package:SOT23-5
⑤	R	RoHS / Pb Free

	G	Halogen Free

Block Diagram



Pin Assignment



Absolute Maximum Ratings

Supply Voltage .....-0.3V to 18V

Storage Temperature .....-50℃ to 125℃

Operating Temperature .....-40℃ to 85℃

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

Thermal Information

Symbol	Parameter	Package	Max.	Unit
θ_{JA}	Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink)	SOT23-3	500	℃/W
		SOT89	200	℃/W
		TO92	200	℃/W
P_D	Power Dissipation	SOT23-3	0.20	W
		SOT89	0.50	W
		TO92	0.50	W

Note: P_D is measured at Ta= 25℃

Electrical Characteristics

Y7521Mxx, +2.1V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	4.1V	I_{OUT}=10mA	2.058	2.100	2.142	V
I_{OUT}	Output Current	4.1V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	4.1V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	4.1V	No load	-	2.5	3	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	3.1V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	4.1V	IOUT=10mA 0℃<Ta<70℃	-	±0.37	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7523Mxx, +2.3V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	4.3V	I_{OUT}=10mA	2.254	2.300	2.346	V
I_{OUT}	Output Current	4.3V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	4.3V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	4.3V	No load	-	2.5	3	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	3.3V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	4.3V	IOUT=10mA 0℃<Ta<70℃	-	±0.39	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7525Mxx, +2.5V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	4.5V	I_{OUT}=10mA	2.45	2.500	2.55	V
I_{OUT}	Output Current	4.5V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	4.5V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	4.5V	No load	-	2.5	3	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	3.5V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	4.5V	IOUT=10mA 0℃<Ta<70℃	-	±0.41	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7527Mxx, +2.7V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	4.7V	I_{OUT}=10mA	2.646	2.700	2.754	V
I_{OUT}	Output Current	4.7V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	4.7V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	4.7V	No load	-	2.5	3	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	3.7V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	4.7V	IOUT=10mA 0℃<Ta<70℃	-	±0.43	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7530Mxx, +3.0V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	5V	I_{OUT}=10mA	2.94	3.00	2.06	V
I_{OUT}	Output Current	5V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	5V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	5V	No load	-	2.5	3	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	4V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	5V	IOUT=10mA 0℃<Ta<70℃	-	±0.45	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7533Mxx, +3.3V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	5.5V	I_{OUT}=10mA	3.234	3.300	3.366	V
I_{OUT}	Output Current	5.5V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	5.5V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	5.5V	No load	-	2.5	3	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	4.5V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	5.5V	IOUT=10mA 0℃<Ta<70℃	-	±0.5	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7536Mxx, +3.6V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	5.6V	I_{OUT}=10mA	3.528	3.600	3.672	V
I_{OUT}	Output Current	5.6V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	5.6V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	5.6V	No load	-	2.5	3.0	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	4.6V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	5.6V	IOUT=10mA 0℃<Ta<70℃	-	±0.6	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7540Mxx, +4.0V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	6.0V	I_{OUT}=10mA	3.920	4.000	4.080	V
I_{OUT}	Output Current	6.0V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	6.0V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	6.0V	No load	-	2.5	3.0	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	5V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	6.0V	IOUT=10mA 0℃<Ta<70℃	-	±0.6	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7544Mxx, +4.4V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	6.4V	I_{OUT}=10mA	4.312	4.400	4.488	V
I_{OUT}	Output Current	6.4V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	6.4V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	6.4V	No load	-	2.5	3.0	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	5.4V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	6.4V	IOUT=10mA 0℃<Ta<70℃	-	±0.7	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7545Mxx, +4.5V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	6.5V	I_{OUT}=10mA	4.410	4.500	4.590	V
I_{OUT}	Output Current	6.5V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	6.5V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	6.5V	No load	-	2.5	3.0	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	5.5V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	6.5V	IOUT=10mA 0℃<Ta<70℃	-	±0.7	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7550Mxx, +5.0V Output Type

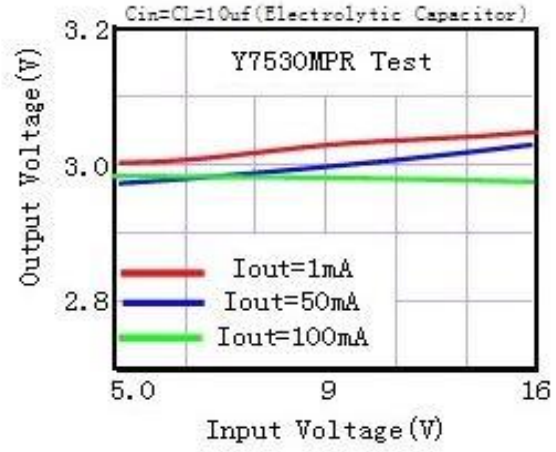
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	7V	I_{OUT}=10mA	4.9	5.00	5.1	V
I_{OUT}	Output Current	7V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	7V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	7V	No load	-	2.5	3.0	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	6V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	7V	IOUT=10mA 0℃<Ta<70℃	-	±0.75	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.

Y7560Mxx, +6.0V Output Type

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{IN}	Conditions				
V_{OUT}	Output Voltage	8V	I_{OUT}=10mA	5.88	6.00	6.12	V
I_{OUT}	Output Current	8V	-	120	150	-	mA
ΔV_{OUT}	Load Regulation	8V	1mA≤I_{OUT}≤50mA	-	60	150	mV
V_{DIF}	Voltage Drop(Note)	-	I_{OUT}=1mA, ΔV_{OUT}=2%	-	50	-	mV
ISS	Current Consumption	8V	No load	-	2.5	3.0	μA
$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	Line Regulation	-	7V≤V_{IN}≤16V I_{OUT}=1mA	-	0.2	-	%/V
V_{IN}	Input Voltage	-	-	-	-	16	V
$\frac{\Delta V_{OUT}}{\Delta Ta}$	Temperature Coefficient	8V	IOUT=10mA 0℃<Ta<70℃	-	±0.75	-	mV/℃

Note: Dropout voltage is defined as the input voltage minus the output voltage that produces a 2% change in the output voltage from the value at V_{IN} = V_{OUT}+2V with a fixed load.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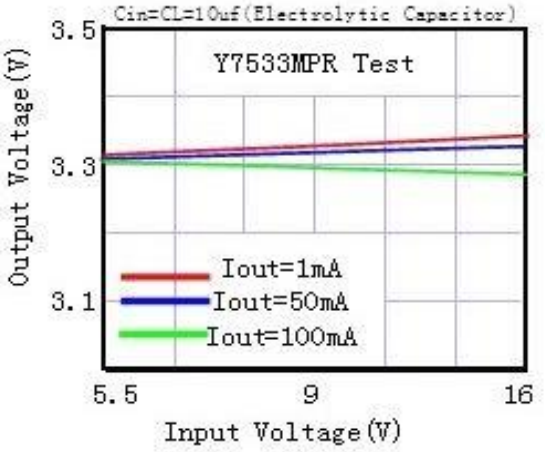
Y7530MPR Test
Output Voltage(V)
3.2
3.0
2.8
Iout=1mA
Iout=50mA
Iout=100mA
5.0
9
16
Input Voltage(V)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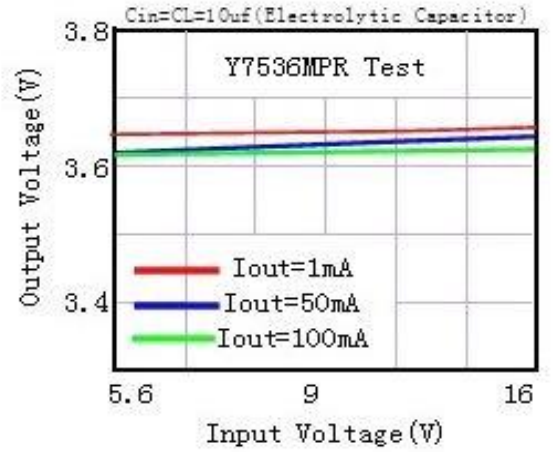
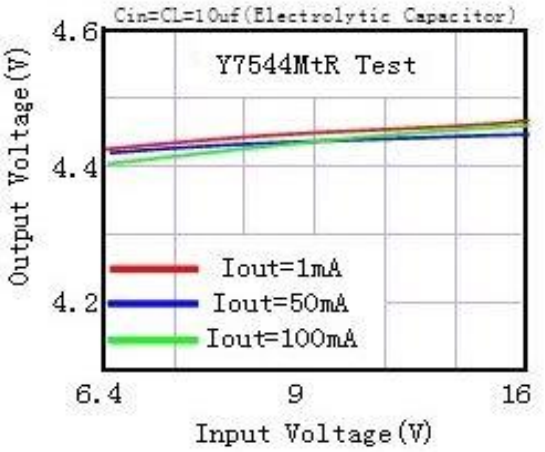
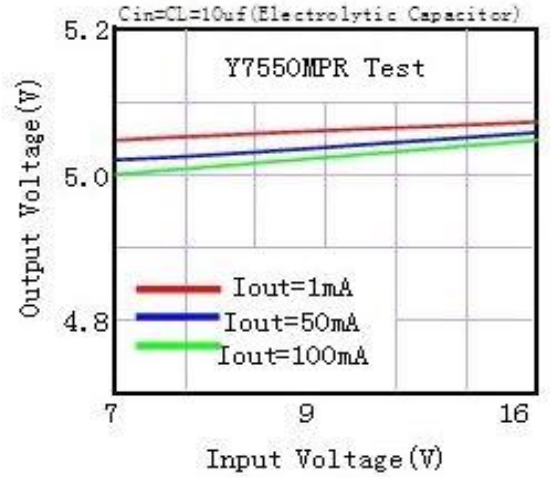
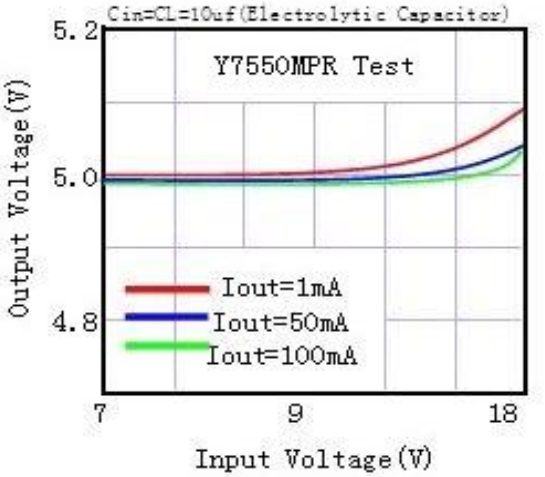
Y7533MPR Test
Output Voltage(V)
3.5
3.3
3.1
Iout=1mA
Iout=50mA
Iout=100mA
5.5
9
16
Input Voltage(V)


Cin=CL=10uf(Electrolytic Capacitor)
Y7536MPR Test
Output Voltage(V)
3.8
3.6
3.4
Iout=1mA
Iout=50mA
Iout=100mA
5.6
9
16
Input Voltage(V)


Cin=CL=10uf(Electrolytic Capacitor)
Y7544MtR Test
Output Voltage(V)
4.6
4.4
4.2
Iout=1mA
Iout=50mA
Iout=100mA
6.4
9
16
Input Voltage(V)


Cin=CL=10uf(Electrolytic Capacitor)
Y7550MPR Test
Output Voltage(V)
5.2
5.0
4.8
Iout=1mA
Iout=50mA
Iout=100mA
7
9
16
Input Voltage(V)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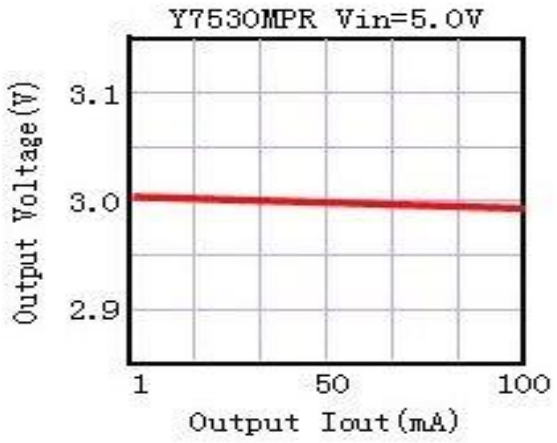
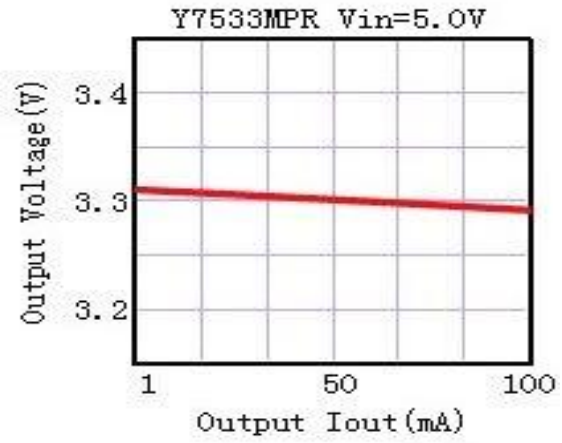
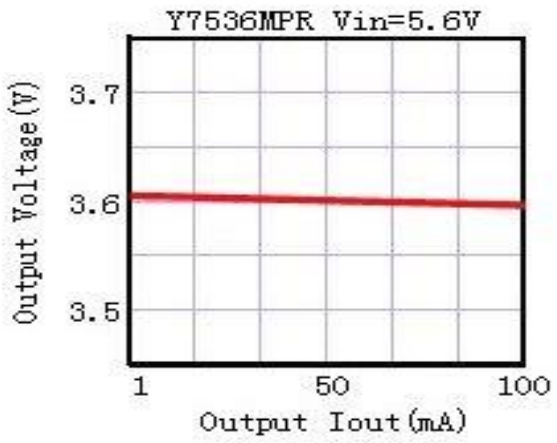
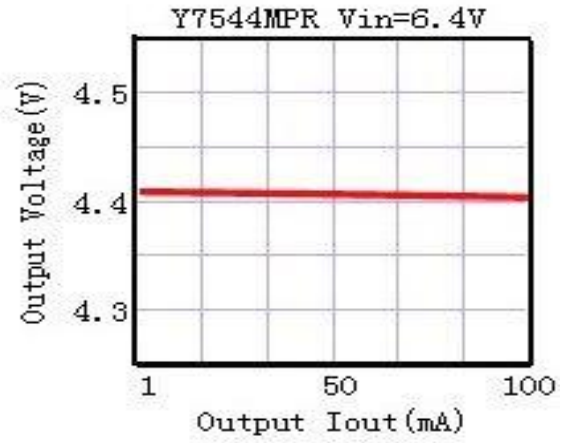
Y7550MPR Test
Output Voltage(V)
5.2
5.0
4.8
Iout=1mA
Iout=50mA
Iout=100mA
7
9
18
Input Voltage(V)

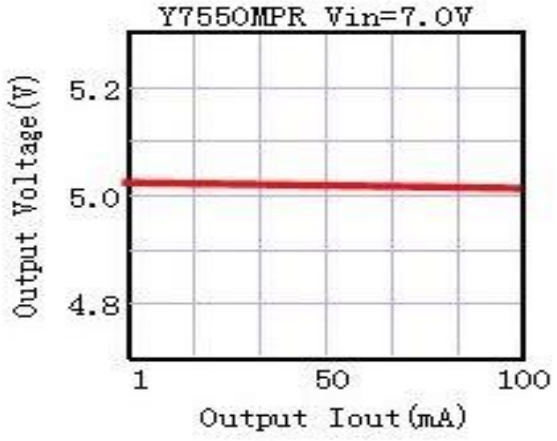
(2) Output Voltage vs.Output Current



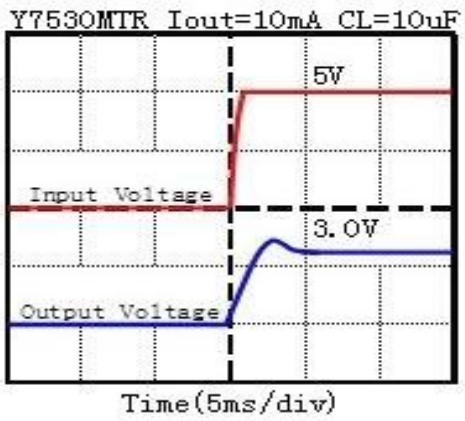


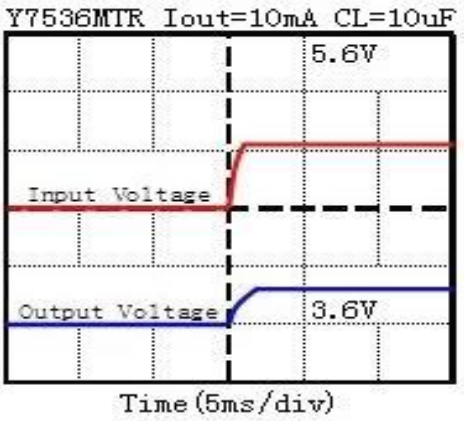


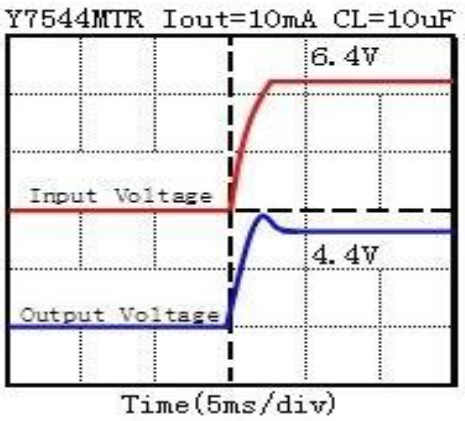


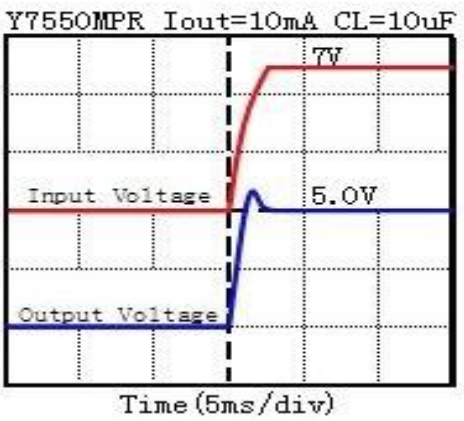


(3) Input Transient Response

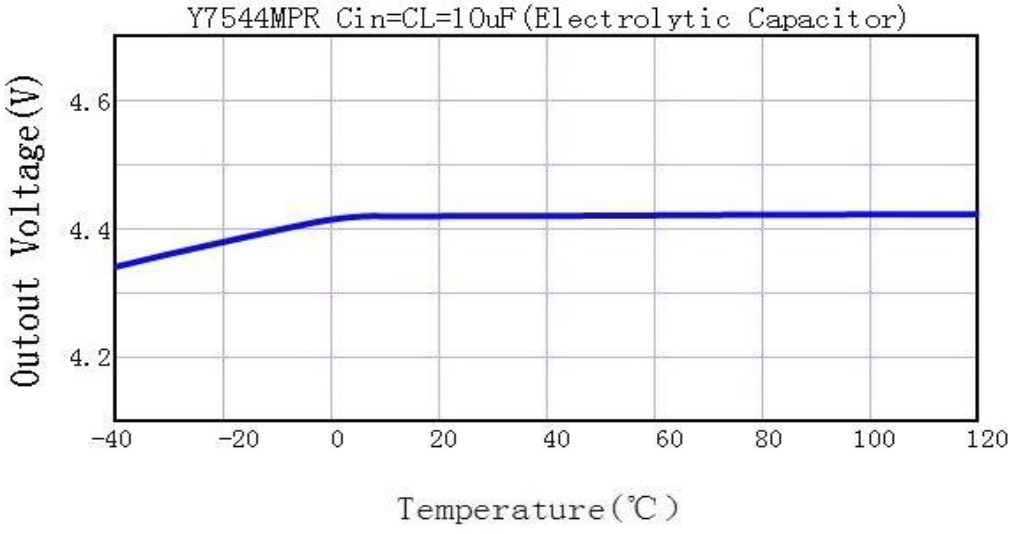








(4) Output Voltage vs.Ambient Temperature



(5) MAX Output Current Vs. Input Voltage

Y530MPR

Input Voltage	Max Output Current
5V	150mA
9V	150mA
12V	100mA
16V	60mA

Y533MPR

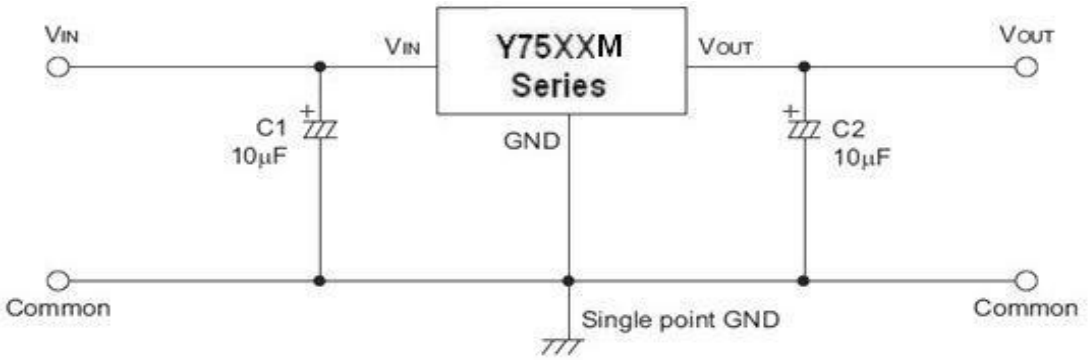
Input Voltage	Max Output Current
5.3V	150mA
9V	150mA
12V	150mA
16V	100mA

Y550MPR

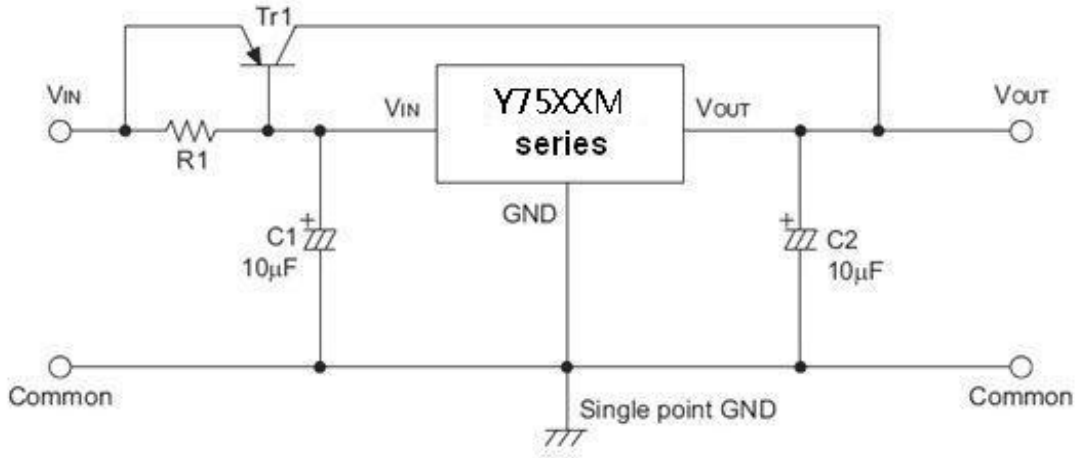
Input Voltage	Max Output Current
7V	150mA
9V	150mA
12V	150mA
16V	100mA

Application Circuits

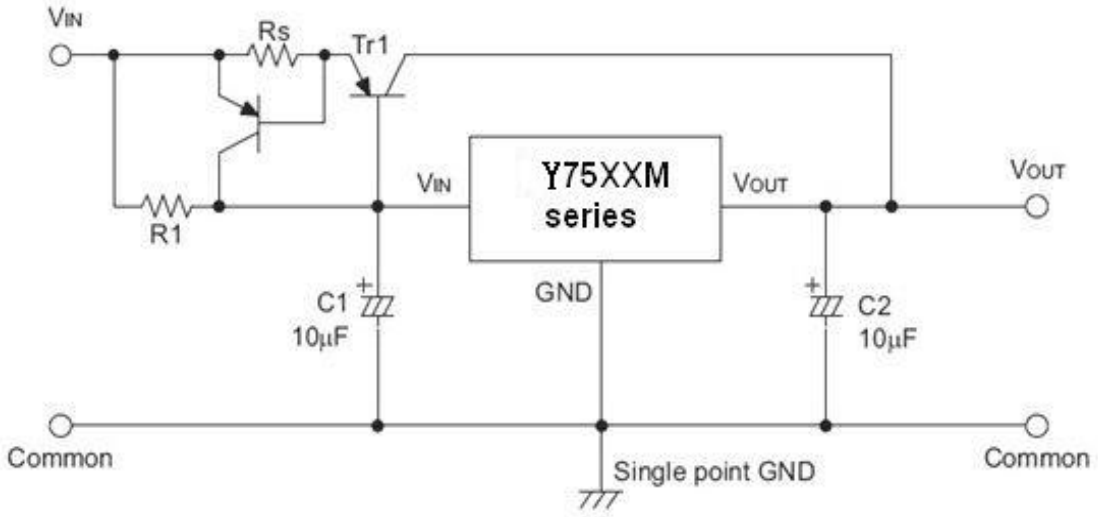
Basic Circuits



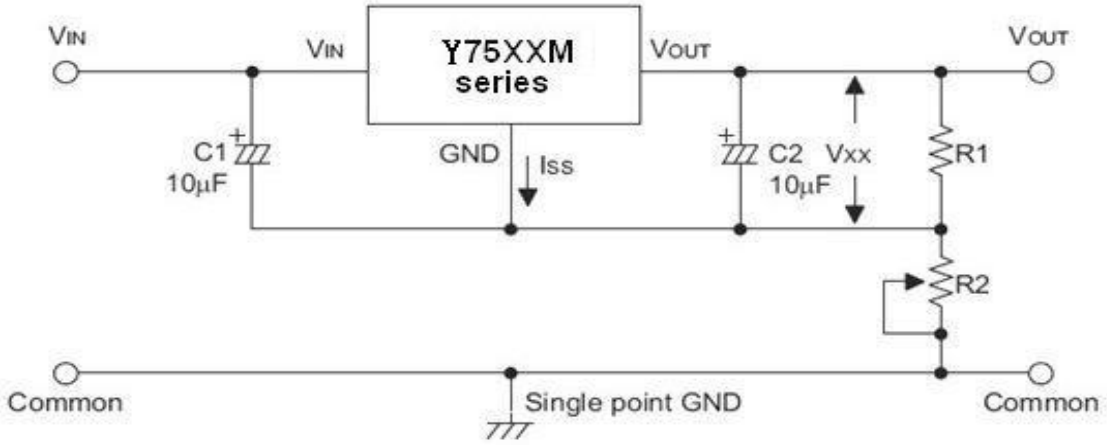
High Output Current Positive Voltage Regulator



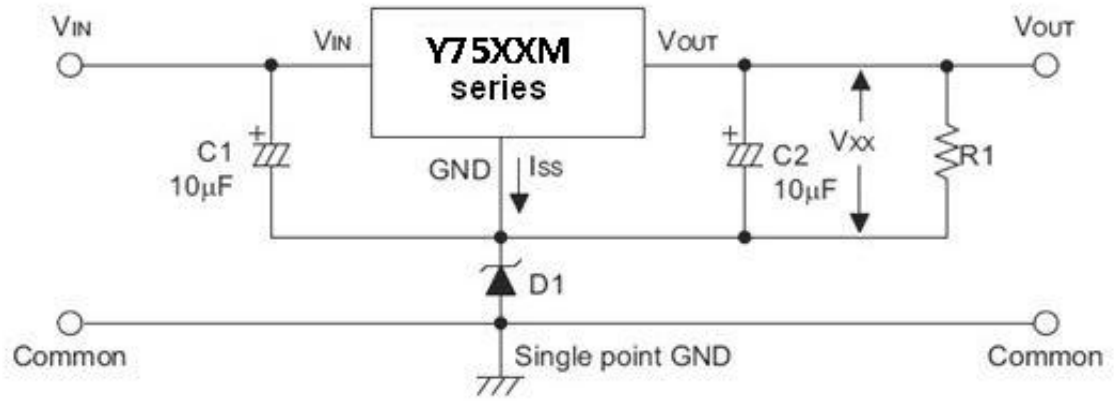
Short-Circuit Protection by Tr1



Circuit for Increasing Output Voltage

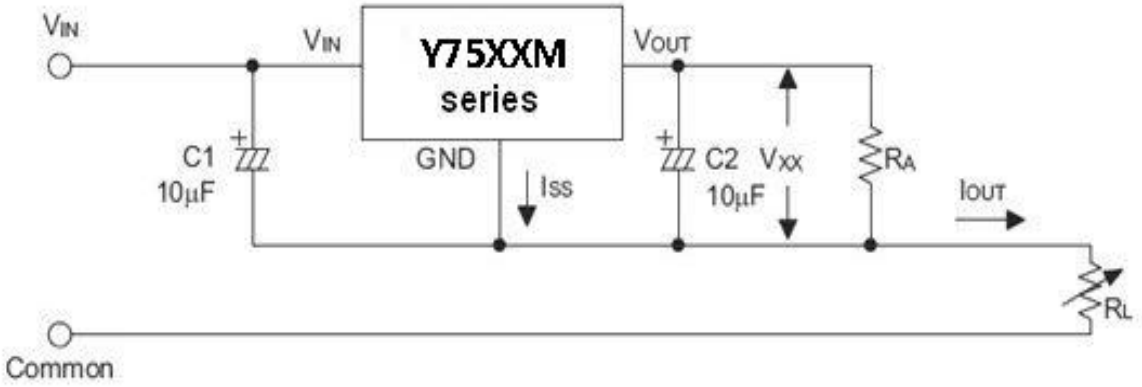


Circuit for Increasing Output Voltage



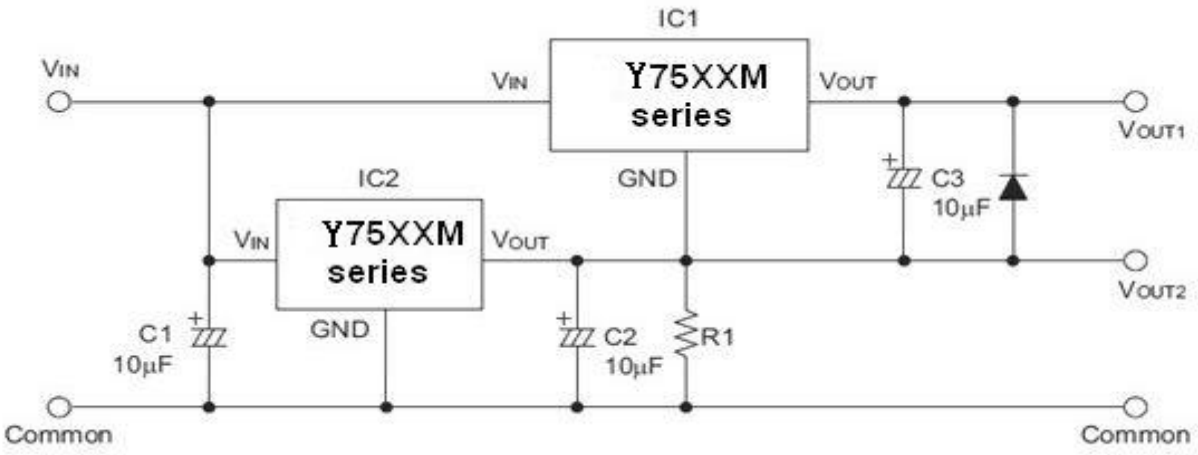
$V_{OUT}=V_{XX}+V_{D1}$

Constant Current Regulator



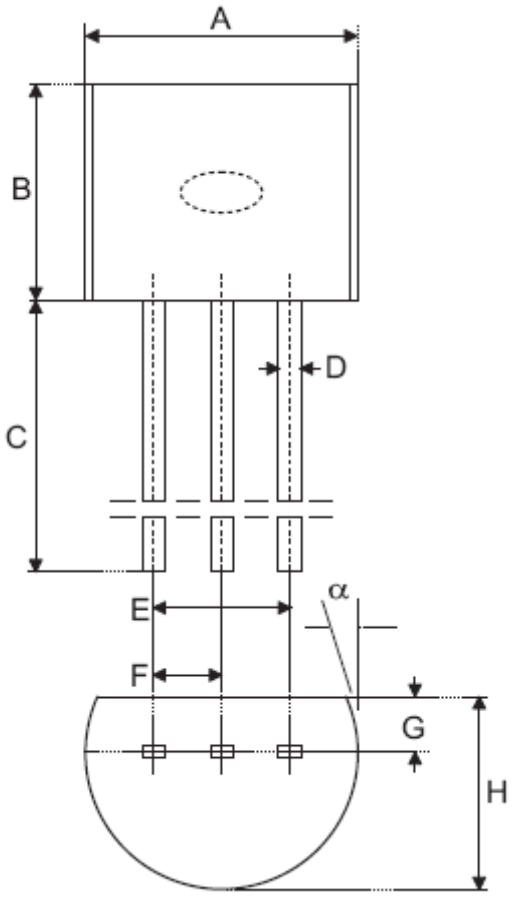
$$I_{OUT} = \frac{V_{XX}}{R_A} + I_{SS}$$

Dual Supply



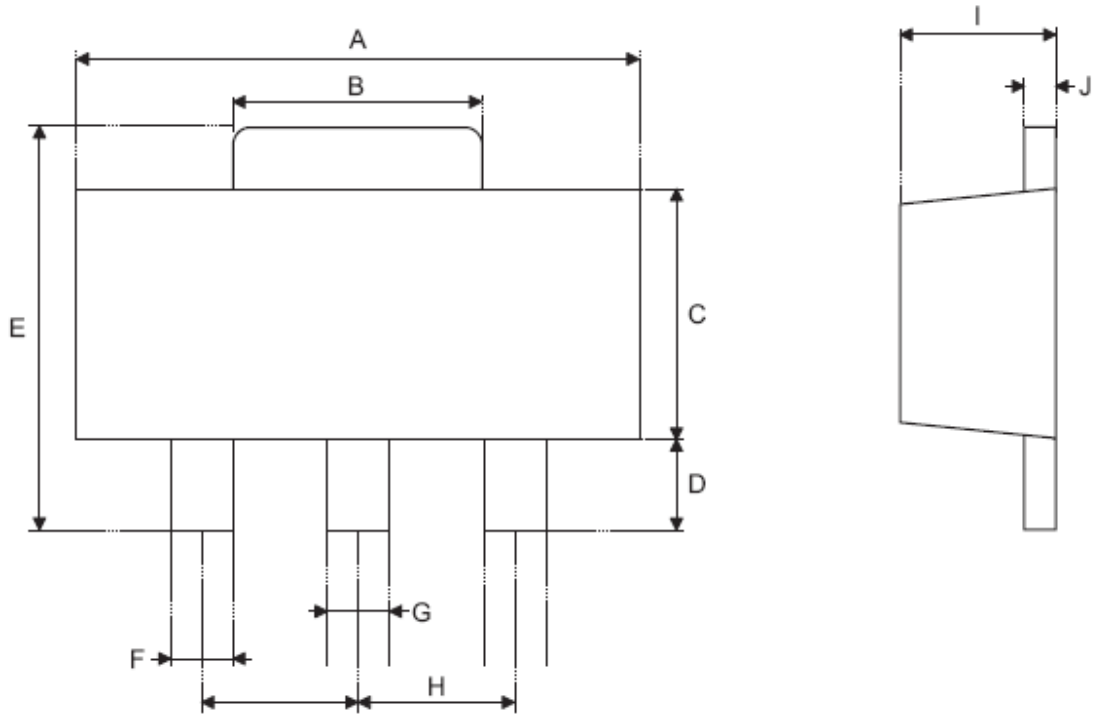
Package Information

3-pin TO92 Outline Dimensions



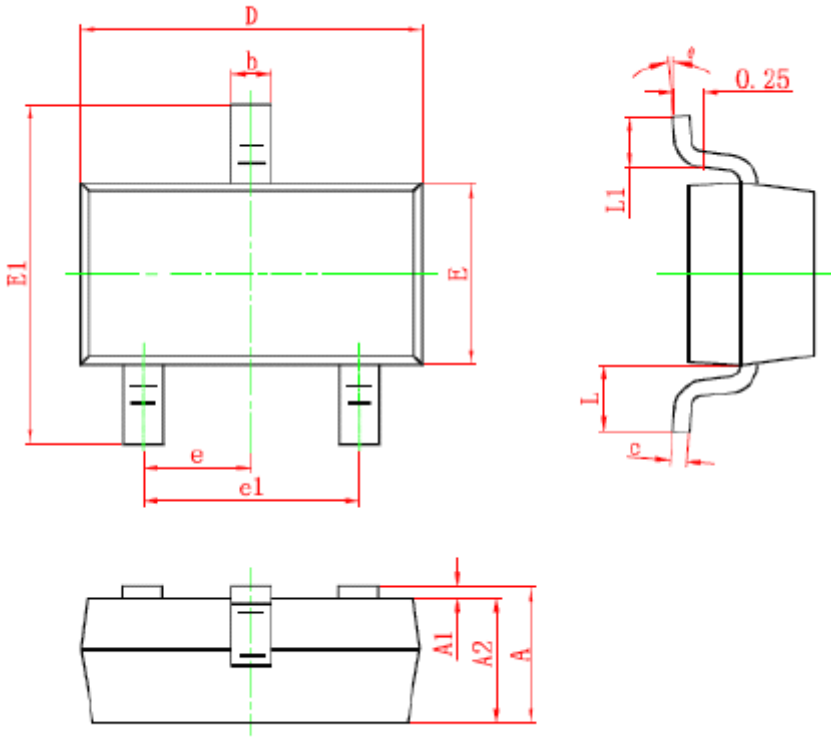
Symbol	Dimensions in mil		
	Min.	Nom.	Max.
A	170	—	200
B	170	—	200
C	500	—	—
D	11	—	20
E	90	—	110
F	45	—	55
G	45	—	65
H	130	—	160
I	8	—	18
α	4°	—	6°

3-pin SOT89 Outline Dimensions



Symbol	Dimensions in mil		
	Min.	Nom.	Max.
A	173	—	181
B	59	—	72
C	90	—	102
D	35	—	47
E	155	—	167
F	14	—	19
G	17	—	22
H	—	59	—
I	55	—	63
J	14	—	17

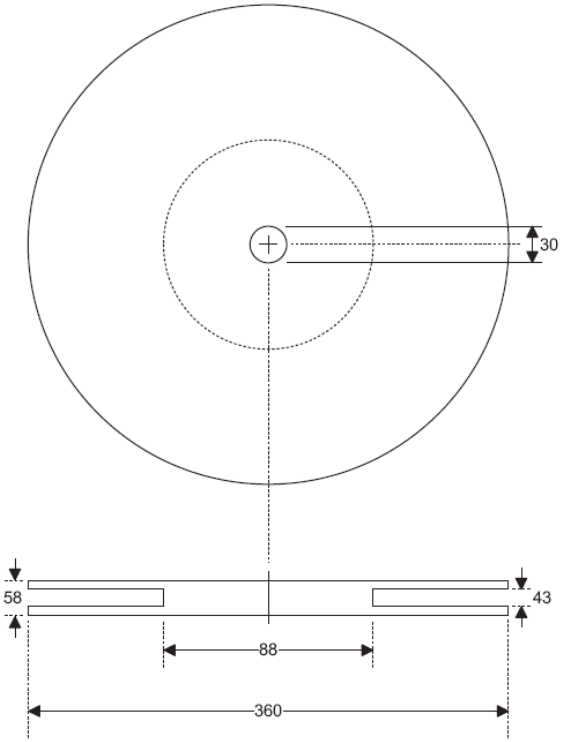
3-pin SOT23 Outline Dimensions

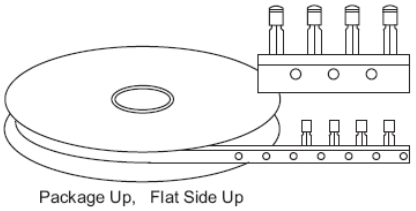


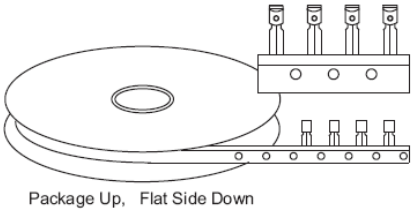
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	6°

Product Tape and Reel Specifications

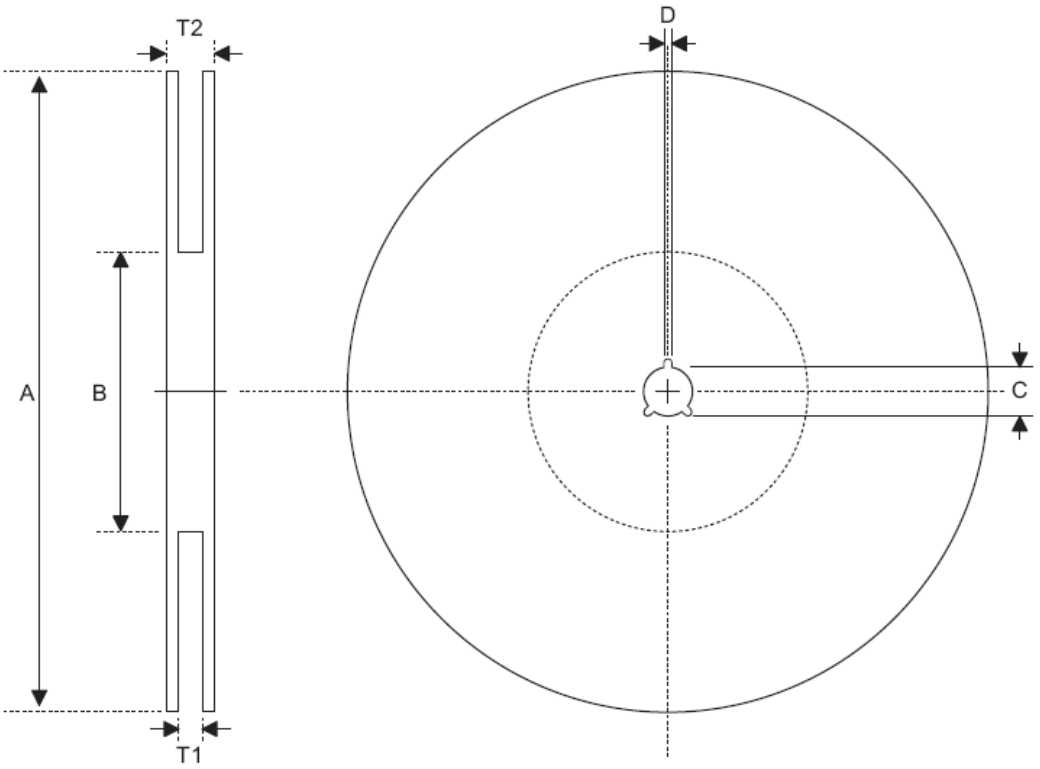
3-pin TO92 Reel Dimensions (Unit: mm)







Reel Dimensions



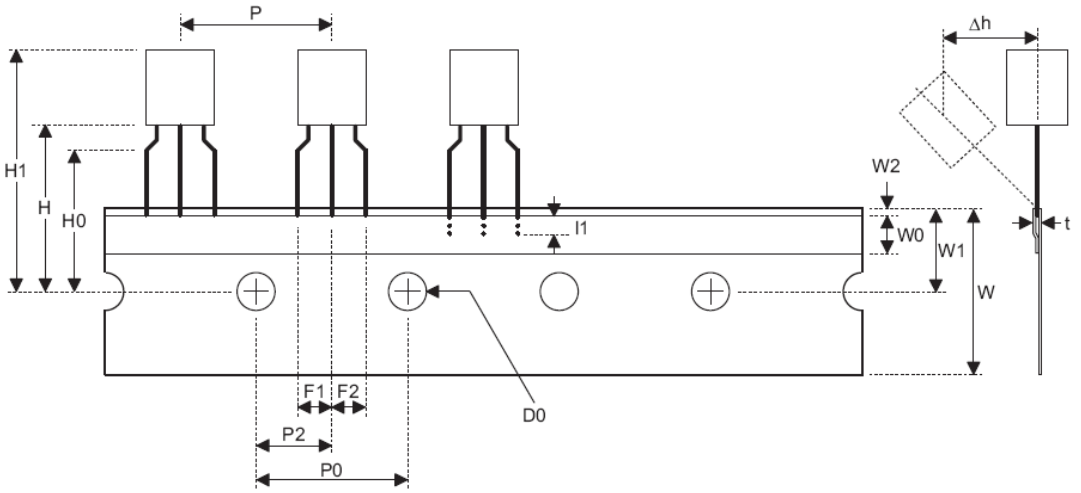
SOT89

Symbol	Description	Dimensions in mm
A	Reel Outer Diameter	180.0±1.0
B	Reel Inner Diameter	62.0±1.5
C	Spindle Hole Diameter	$12.75^{+0.15/-0.00}$
D	Key Slit Width	1.90±0.15
T1	Space Between Flange	$12.4^{+0.2/-0.00}$
T2	Reel Thickness	$17.0^{+0.0/-0.4}$

SOT23-5

Symbol	Description	Dimensions in mm
A	Reel Outer Diameter	178.0±1.0
B	Reel Inner Diameter	62.0±1.0
C	Spindle Hole Diameter	13.0±0.2
D	Key Slit Width	2.50±0.25
T1	Space Between Flange	$8.4^{+1.5/-0.0}$
T2	Reel Thickness	$11.4^{+1.5/-0.0}$

Carrier Tape Dimensions



TO92

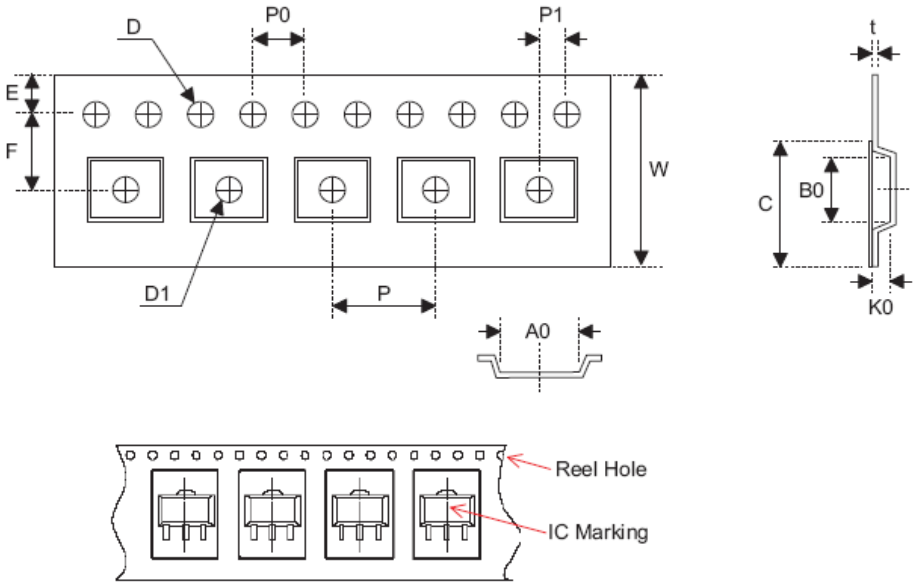
Symbol	Description	Dimensions in mm
I1	Taped Lead Length	(2.5)
P	Component Pitch	12.7±1.0
P_0	Perforation Pitch	12.7±0.3
P_2	Component to Perforation (Length Direction)	6.35±0.40
F_1	Lead Spread	$2.5^{+0.4/-0.1}$
F_2	Lead Spread	$2.5^{+0.4/-0.1}$
Δh	Component Alignment	0.0±0.1
W	Carrier Tape Width	$18.0^{+1.0/-0.5}$
W_0	Hold-down Tape Width	6.0±0.5
W_1	Perforation Position	9.0±0.5
W_2	Hold-down Tape Position	(0.5)
H_0	Lead Clinch Height	16.0±0.5
H_1	Component Height	Less than 24.7
D_0	Perforation Diameter	4.0±0.2
t	Taped Lead Thickness	0.7±0.2
H	Component Base Height	19.0±0.5

Note: Thickness less than 0.38_0.05mm~0.5mm

P0 Accumulated pitch tolerance: _1mm/20pitches.

( ) Bracketed figures are for consultation only

Carrier Tape Dimensions



SOT89

Symbol	Description	Dimensions in mm
W	Carrier Tape Width	$12.0^{+0.3/-0.1}$
P	Cavity Pitch	8.0±0.1
E	Perforation Position	1.75±0.10
F	Cavity to Perforation (Width Direction)	5.50±0.05
D	Perforation Diameter	$1.5^{+0.1/-0.0}$
D1	Cavity Hole Diameter	$1.5^{+0.1/-0.0}$
P0	Perforation Pitch	4.0±0.1
P1	Cavity to Perforation (Length Direction)	2.0±0.1
A0	Cavity Length	4.8±0.1
B0	Cavity Width	4.5±0.1
K0	Cavity Depth	1.8±0.1
t	Carrier Tape Thickness	0.300±0.013
C	Cover Tape Width	9.3±0.1

SOT23-5

Symbol	Description	Dimensions in mm
W	Carrier Tape Width	8.0±0.3
P	Cavity Pitch	4.0±0.1
E	Perforation Position	1.75±0.10
F	Cavity to Perforation (Width Direction)	3.50±0.05
D	Perforation Diameter	$1.5^{+0.1/-0.0}$
D1	Cavity Hole Diameter	$1.5^{+0.1/-0.0}$
P0	Perforation Pitch	4.0±0.1
P1	Cavity to Perforation (Length Direction)	2.00±0.05
A0	Cavity Length	3.15±0.10
B0	Cavity Width	3.2±0.1
K0	Cavity Depth	1.4±0.1
t	Carrier Tape Thickness	0.20±0.03
C	Cover Tape Width	5.3±0.1