



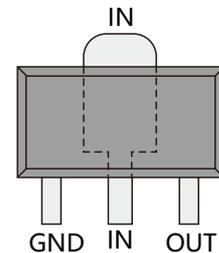
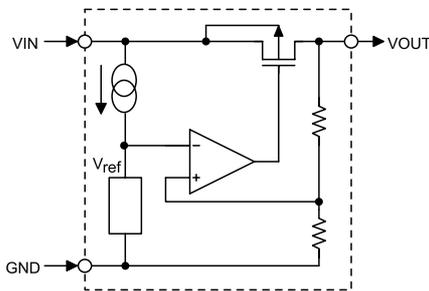
LOW DROP LINEAR VOLTAGE REGULATORS HT7530 THRU HT7580

FEATURES

- Low Dropout Voltage
- Low power consumption
- Low temperature coefficient
- High input voltage (up to 24V)
- High output current : 100mA ($P_d \leq 250mW$)
- Surface Mount device



BLOCK DIAGRAM



SOT89

TYPICAL APPLICATION

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

MECHANICAL DATA

- Case: SOT89 molded plastic
- Flammability level: UL 94V-0
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102

ORDERING INFORMATION(Example)

PRODUCT MODEL	MINIMUM PACKAGE(PCS)	INNER BOX QUANTITY(PCS)	OUTER CARTON QUANTITY(PCS)	PACKAGE	PACKAGING FOR PRODUCT DELIVERY
HT7530-1	1000	10000	40000	SOT89	7" reel

MAXIMUM RATINGS($T_a=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Input Voltage	V_i	-0.3V~26V	V
Power Dissipation	P_D	250	mW
Operating Temperature	T_{opr}	0~70	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-50~+125	$^\circ\text{C}$



SELECTION TABLE

PART NO.	OUTPUT VOLTAGE	TOLERANCE
HT7530	3.0V	5%
HT7530-1		3%
HT7530-2		1%
HT7530-3		2%
HT7533	3.3V	5%
HT7533-1		3%
HT7533-2		1%
HT7533-3		2%
HT7536	3.6V	5%
HT7536-1		3%
HT7536-2		1%
HT7536-3		2%
HT7544	4.4V	5%
HT7544-1		3%
HT7544-2		1%
HT7544-3		2%
HT7550	5.0V	5%
HT7550-1		3%
HT7550-2		1%
HT7550-3		2%
HT7580	8.0V	5%
HT7580-1		3%
HT7580-2		1%
HT7580-3		2%



ELECTRICAL CHARACTERISTICS OF HT7530

(Ta=25°C, unless otherwise specified)

PARAMETER		CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Output voltage	HT7530	VIN=5V, IOUT=10mA	VOUT	2.85	3.0	3.15	V
	HT7530-1			2.91	3.0	3.09	V
	HT7530-2			2.97	3.0	3.03	V
	HT7530-3			2.94	3.0	3.06	V
Output Current		VIN=5V	IOUT	60	100		mA
Load Regulation		VIN=5V, 1mA ≤ IOUT ≤ 50mA	ΔVOUT		60	150	mV
Voltage Drop		IOUT=1mA	VDIF		100		mV
Current Consumption		VIN=5V, No Load	ISS		10	20	μA
Line Regulation		4V ≤ VIN ≤ 12V, IOUT=1mA	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} \times V_{OUT})}$		0.2		%/V
Input Voltage			VIN			24	V
Temperature Coefficient		VIN=5V, IOUT=10mA, 0°C < Ta < 70°C	ΔVOUT/ΔTa		±0.45		mV/°C

ELECTRICAL CHARACTERISTICS OF HT7533

(Ta=25°C, unless otherwise specified)

PARAMETER		CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Output voltage	HT7533	VIN=5.5V, IOUT=10mA	VOUT	3.14	3.3	3.47	V
	HT7533-1			3.20	3.3	3.40	V
	HT7533-2			3.27	3.3	3.33	V
	HT7533-3			3.24	3.3	3.37	V
Output Current		VIN=5.5V	IOUT	60	100		mA
Load Regulation		VIN=5.5V, 1mA ≤ IOUT ≤ 50mA	ΔVOUT		60	150	mV
Voltage Drop		IOUT=1mA	VDIF		100		mV
Current Consumption		VIN=5.5V, No Load	ISS		10	20	μA
Line Regulation		4.5V ≤ VIN ≤ 12V, IOUT=1mA	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} \times V_{OUT})}$		0.2		%/V
Input Voltage			VIN			24	V
Temperature Coefficient		VIN=5.5V, IOUT=10mA, 0°C < Ta < 70°C	ΔVOUT/ΔTa		±0.5		mV/°C



ELECTRICAL CHARACTERISTICS OF HT7536

(Ta=25°C, unless otherwise specified)

PARAMETER		CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Output voltage	HT7536	VIN=5.6V, IOUT=10mA	VOUT	3.42	3.6	3.78	V
	HT7536-1			3.50	3.6	3.71	V
	HT7536-2			3.56	3.6	3.64	V
	HT7536-3			3.53	3.6	3.67	V
Output Current		VIN=5.6V	IOUT	60	100		mA
Load Regulation		VIN=5.6V, 1mA ≤ IOUT ≤ 50mA	ΔVOUT		60	150	mV
Voltage Drop		IOUT=1mA	VDIF		100		mV
Current Consumption		VIN=5.6V, No Load	ISS		10	20	μA
Line Regulation		4.6V ≤ VIN ≤ 12V, IOUT=1mA	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} \times V_{OUT})}$		0.2		%/V
Input Voltage			VIN			24	V
Temperature Coefficient		VIN=5.6V, IOUT=10mA, 0°C < Ta < 70°C	ΔVOUT/ΔTa		±0.6		mV/°C

ELECTRICAL CHARACTERISTICS OF HT7544

(Ta=25°C, unless otherwise specified)

PARAMETER		CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Output voltage	HT7544	VIN=6.4V, IOUT=10mA	VOUT	4.18	4.4	4.62	V
	HT7544-1			4.27	4.4	4.53	V
	HT7544-2			4.36	4.4	4.44	V
	HT7544-3			4.31	4.4	4.49	V
Output Current		VIN=6.4V	IOUT	60	100		mA
Load Regulation		VIN=6.4V, 1mA ≤ IOUT ≤ 50mA	ΔVOUT		60	150	mV
Voltage Drop		IOUT=1mA	VDIF		100		mV
Current Consumption		VIN=6.4V, No Load	ISS		10	20	μA
Line Regulation		5.4V ≤ VIN ≤ 12V, IOUT=1mA	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} \times V_{OUT})}$		0.2		%/V
Input Voltage			VIN			24	V
Temperature Coefficient		VIN=6.4V, IOUT=10mA, 0°C < Ta < 70°C	ΔVOUT/ΔTa		±0.7		mV/°C



ELECTRICAL CHARACTERISTICS OF HT7550

(Ta=25°C, unless otherwise specified)

PARAMETER		CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Output voltage	HT7550	VIN=7V, IOUT=10mA	VOUT	4.75	5.0	5.25	V
	HT7550-1			4.85	5.0	5.15	V
	HT7550-2			4.95	5.0	5.05	V
	HT7550-3			4.90	5.0	5.10	V
Output Current		VIN=7V	IOUT	60	100		mA
Load Regulation		VIN=7V, 1mA ≤ IOUT ≤ 50mA	ΔVOUT		60	150	mV
Voltage Drop		IOUT=1mA	VDIF		100		mV
Current Consumption		VIN=7V, No Load	ISS		10	20	μA
Line Regulation		6V ≤ VIN ≤ 15V, IOUT=1mA	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} \times V_{OUT})}$		0.2		%/V
Input Voltage			VIN			24	V
Temperature Coefficient		VIN=7V, IOUT=10mA, 0°C < Ta < 70°C	ΔVOUT/ΔTa		±0.75		mV/°C

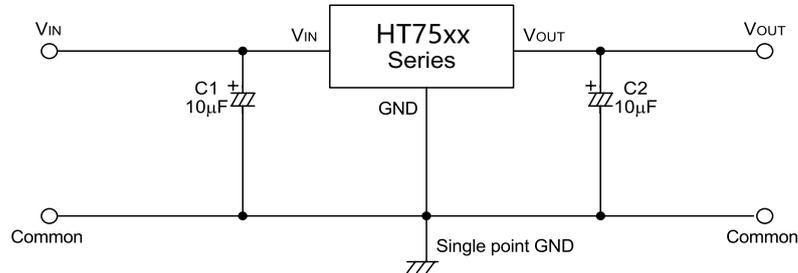
ELECTRICAL CHARACTERISTICS OF HT7580

(Ta=25°C, unless otherwise specified)

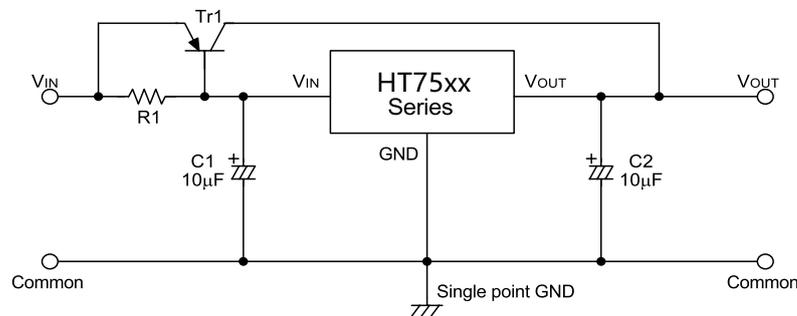
PARAMETER		CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Output voltage	HT7580	VIN=10V, IOUT=10mA	VOUT	7.61	8.0	8.40	V
	HT7580-1			7.77	8.0	8.24	V
	HT7580-2			7.92	8.0	8.08	V
	HT7580-3			7.84	8.0	8.16	V
Output Current		VIN=10V	IOUT	60	100		mA
Load Regulation		VIN=10V, 1mA ≤ IOUT ≤ 50mA	ΔVOUT		60	150	mV
Voltage Drop		IOUT=1mA	VDIF		100		mV
Current Consumption		VIN=10V, No Load	ISS		10	20	μA
Line Regulation		9V ≤ VIN ≤ 20V, IOUT=1mA	$\frac{\Delta V_{OUT}}{(\Delta V_{IN} \times V_{OUT})}$		0.2		%/V
Input Voltage			VIN			24	V
Temperature Coefficient		VIN=10V, IOUT=10mA, 0°C < Ta < 70°C	ΔVOUT/ΔTa		±1.2		mV/°C



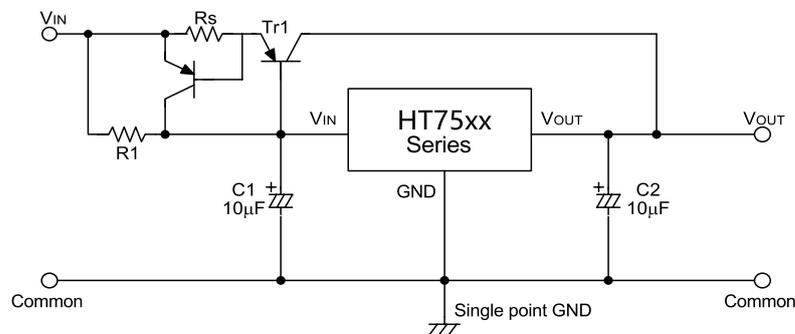
Basic circuit



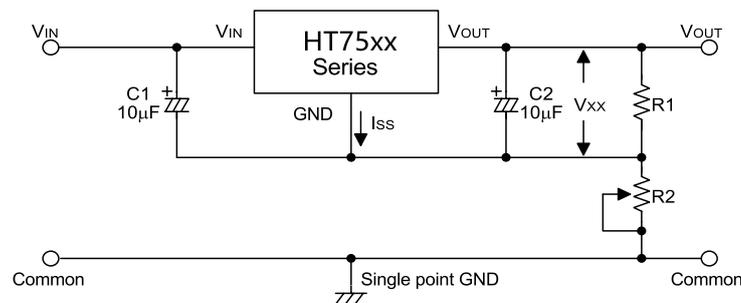
High output current positive voltage regulator



Short-Circuit protection for Tr1



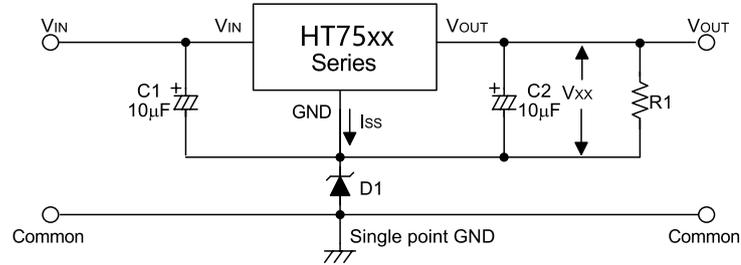
Circuit for increasing output voltage



$$V_{OUT} = V_{XX} \left(1 + \frac{R2}{R1} \right) + I_{SS} R2$$

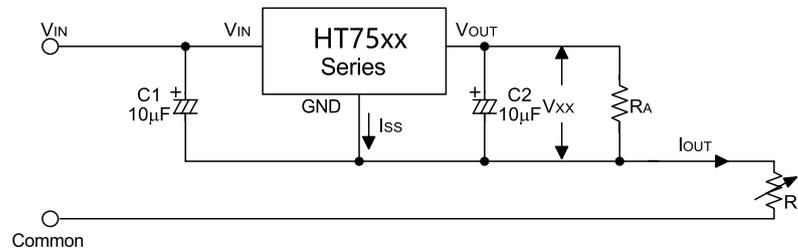


Circuit for increasing output voltage



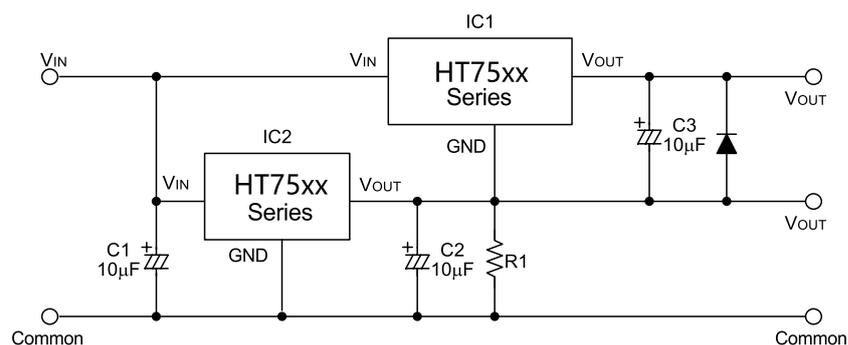
$$V_{OUT} = V_{XX} + V_{D1}$$

Constant current regulator



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

Dual supply

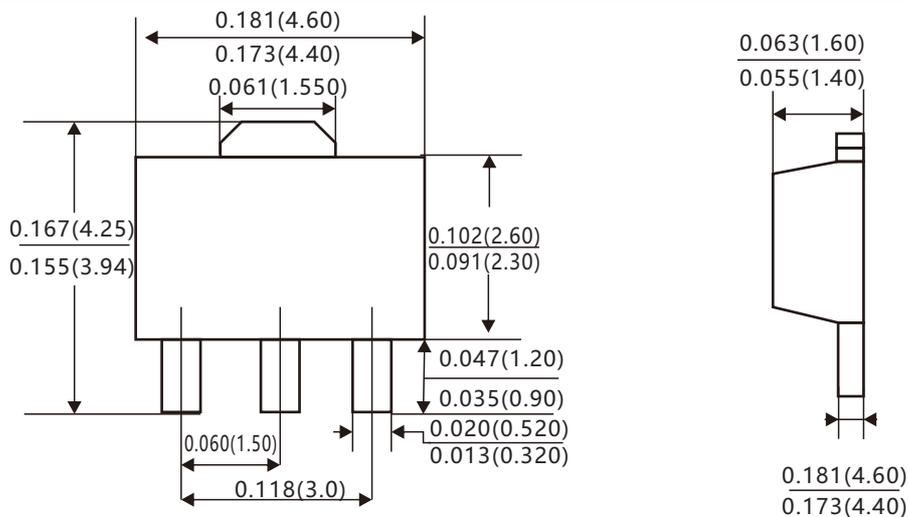




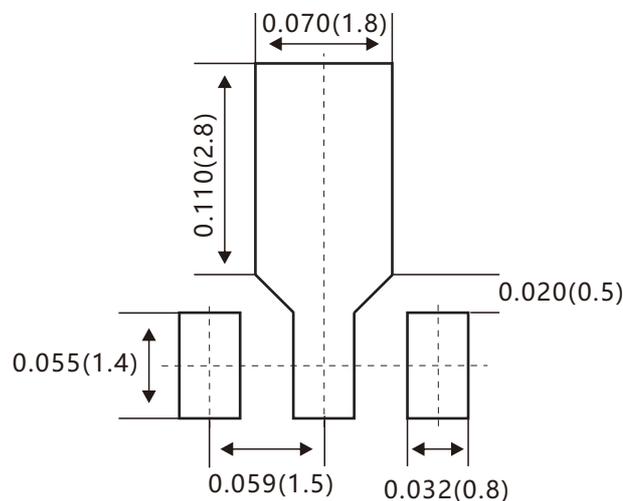
ONTOLOGY APPEARANCE MODEL



OVERALL DIMENSION UNIT: inch (mm)



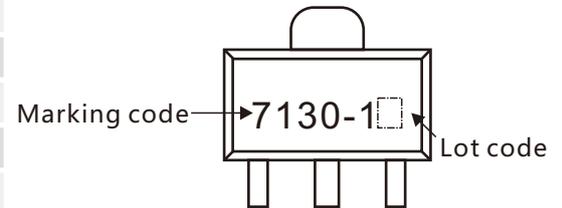
RECOMMENDED PAD LAYOUT: inch (mm)



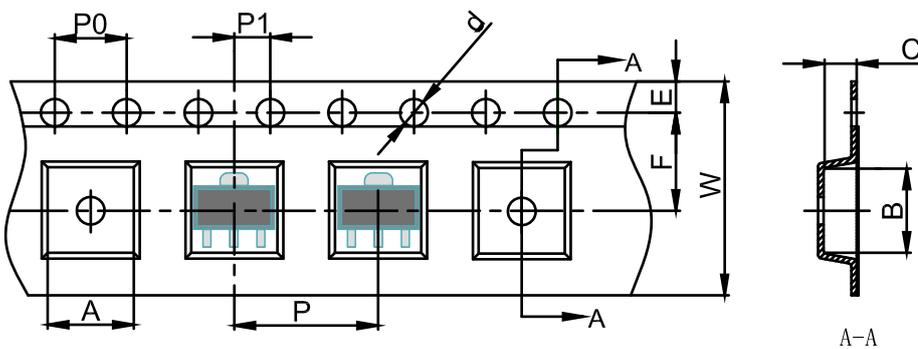


CODE IDENTIFICATION

PART NO.	MARKING	PART NO.	MARKING	PART NO.	MARKING
HT7530	7530	HT7536	7536	HT7550	7550
HT7530-1	7530-1	HT7536-1	7536-1	HT7550-1	7550-1
HT7530-2	7530-2	HT7536-2	7536-2	HT7550-2	7550-2
HT7530-3	7530-3	HT7536-3	7536-3	HT7550-3	7550-3
HT7533	7533	HT7544	7544	HT7580	7580
HT7533-1	7533-1	HT7544-1	7544-1	HT7580-1	7580-1
HT7533-2	7533-2	HT7544-2	7544-2	HT7580-2	7580-2
HT7533-3	7533-3	HT7544-3	7544-3	HT7580-3	7580-3



PACKAGING INFORMATION(mm)

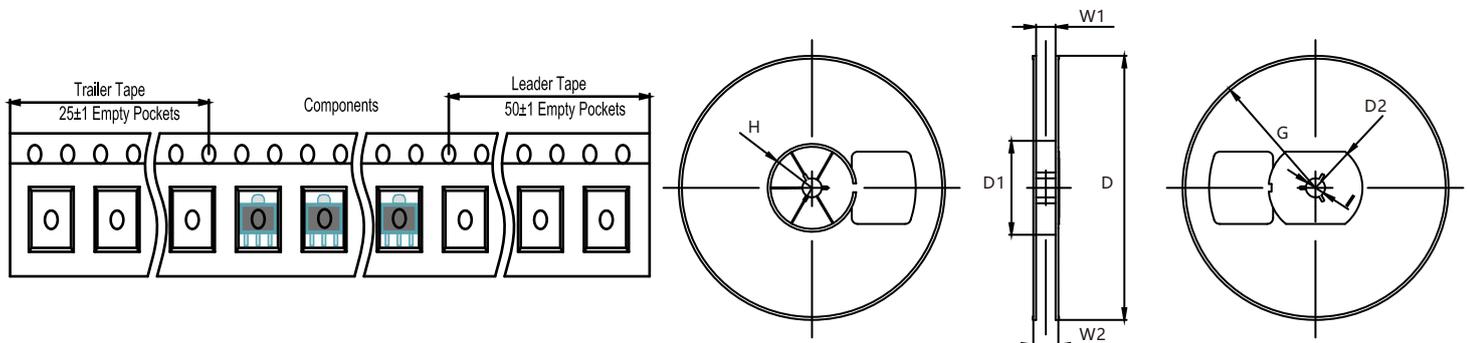


PACKAGING DESCRIPTION

SOT-89 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 1,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti static coated).

DIMENSIONS ARE IN MILLIMETERS

PKG TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00



SOT89 Reel

DIMENSIONS ARE IN MILLIMETERS

REEL	D	D1	D2	G	H	I	W1	W2
7" reel	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50



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