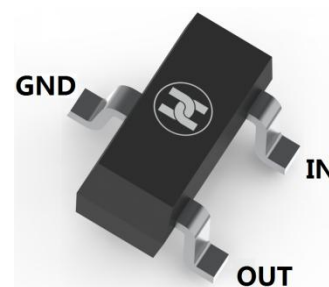


PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

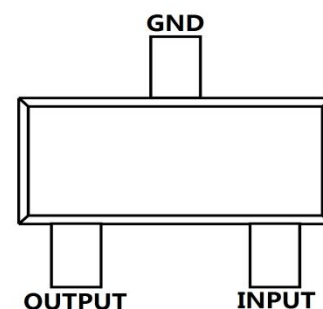
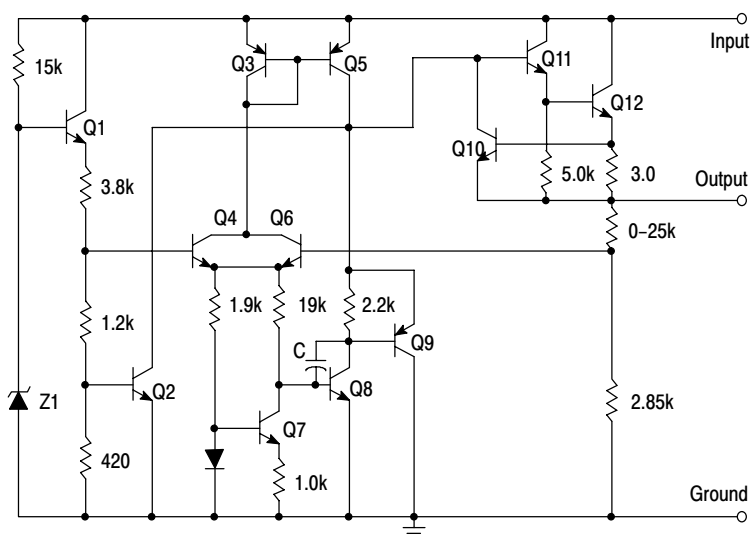
FEATURES

- Maximum Output Current I_o : 0.1 A
- Output Voltage V_o : 5 V
- Continuous Total Dissipation
 P_D : 0.25 W ($T_a = 25^\circ\text{C}$)
- Surface Mount device



SOT-23

SCHEMATIC DIAGRAM



MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.008 grams (approximate)

MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Power Dissipation	P_D	250	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	$^\circ\text{C}/\text{W}$
Operating Temperature	T_{opr}	-40~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~+150	$^\circ\text{C}$

PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=10V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

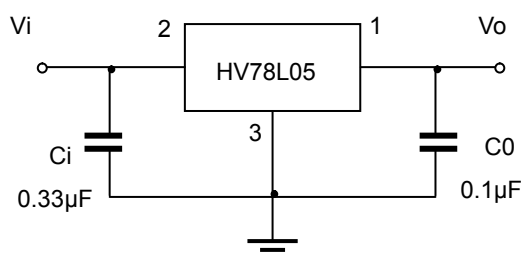
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_o	4.75	5.0	5.25	V	$7V \leq V_i \leq 20V, I_o=1mA \sim 40mA, 0^\circ C \leq T_A \leq +125^\circ C$
		4.75	5.0	5.25	V	$7V \leq V_i \leq 20V, I_o=1mA \sim 70mA, 0^\circ C \leq T_A \leq +125^\circ C$
Load Regulation	ΔV_o		15	60	mV	$I_o=1mA \sim 100mA, T_A=+25^\circ C$
			8	30	mV	$I_o=1mA \sim 40mA, T_A=+25^\circ C$
Line regulation	ΔV_o		32	150	mV	$7V \leq V_i \leq 20V$
			26	100	mV	$8V \leq V_i \leq 20V, T_A=+25^\circ C$
Quiescent Current	I_q		3.8	6	mA	$T_A=+25^\circ C$
Quiescent Current Change	ΔI_q			1.5	mA	$8V \leq V_i \leq 20V, -25^\circ C \leq T_A \leq +125^\circ C$
				0.1	mA	$1mA \leq I_o \leq 40mA, -25^\circ C \leq T_A \leq +125^\circ C$
Output Noise Voltage	V_N		42		$\mu V/V_o$	$10Hz \leq f \leq 100kHz, T_A=+25^\circ C$
Ripple Rejection	RR	41	49		dB	$8V \leq V_i \leq 20V, f=120Hz, -25^\circ C \leq T_A \leq +125^\circ C$
Dropout Voltage	V_d		1.7		V	$T_A=+25^\circ C$

* Pulse test.

CLASSIFICATION OF V_o

Rank	5%	4%	3%	2%
V_o Range	4.75-5.25	4.8-5.20	4.85-5.15	4.90-5.10

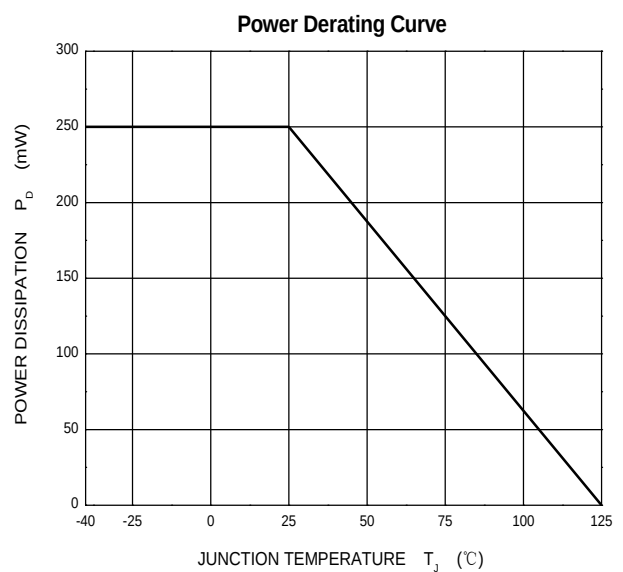
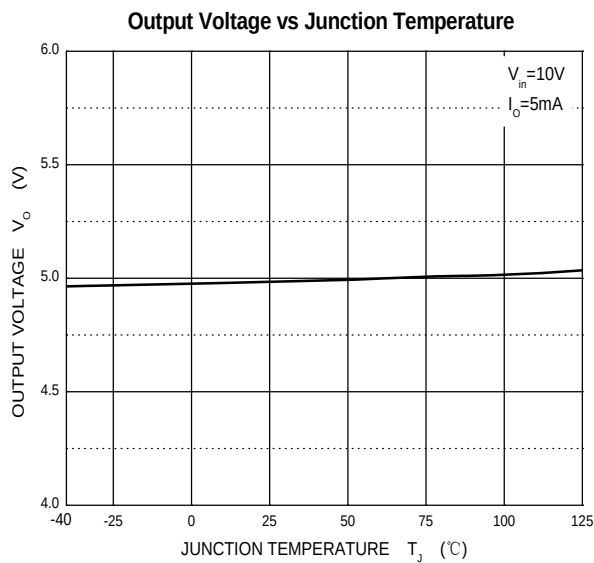
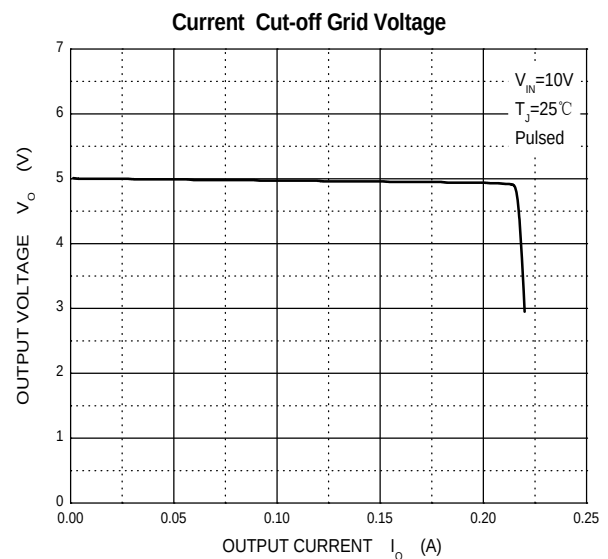
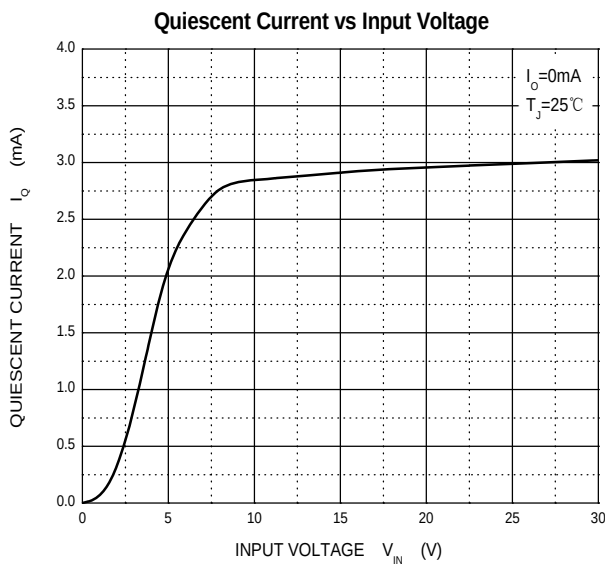
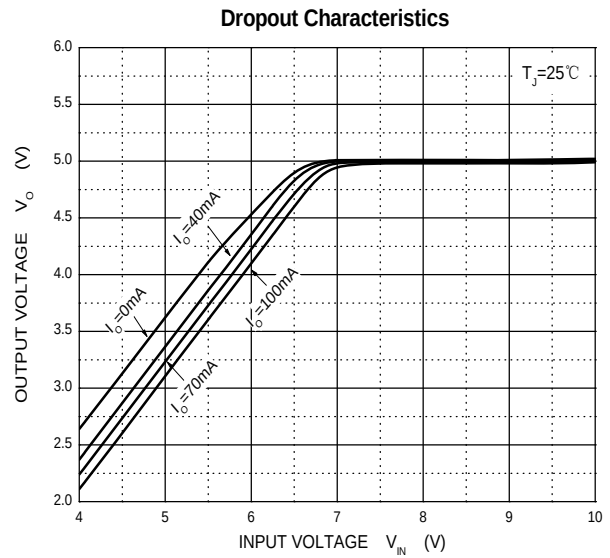
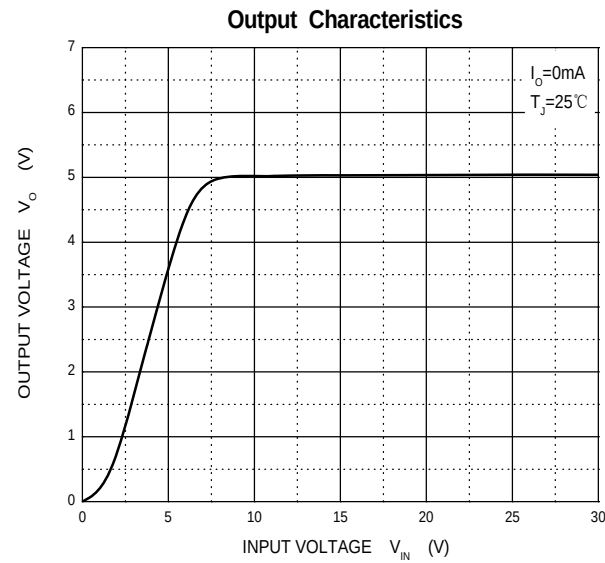
TYPICAL APPLICATION



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

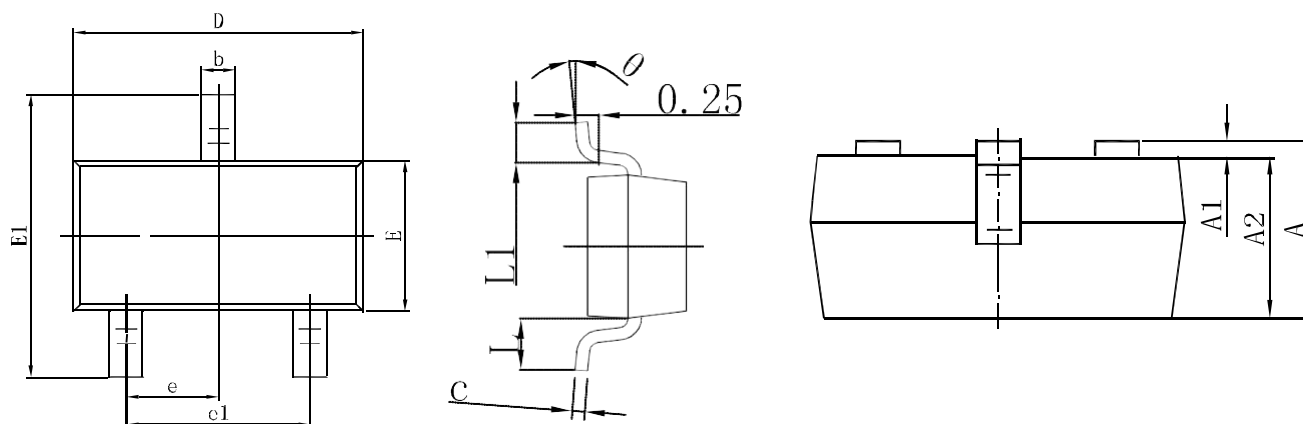
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

Typical Characteristics



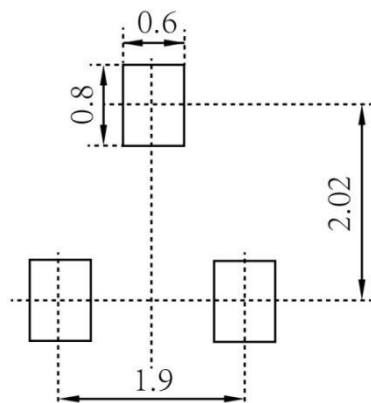
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

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		0.037 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°	8°

SOT-23 Suggested Pad Layout



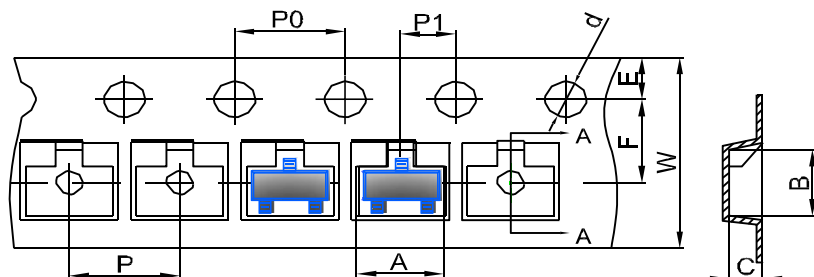
Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

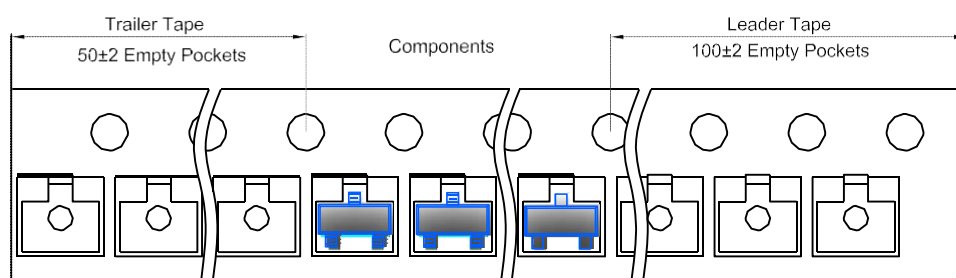
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

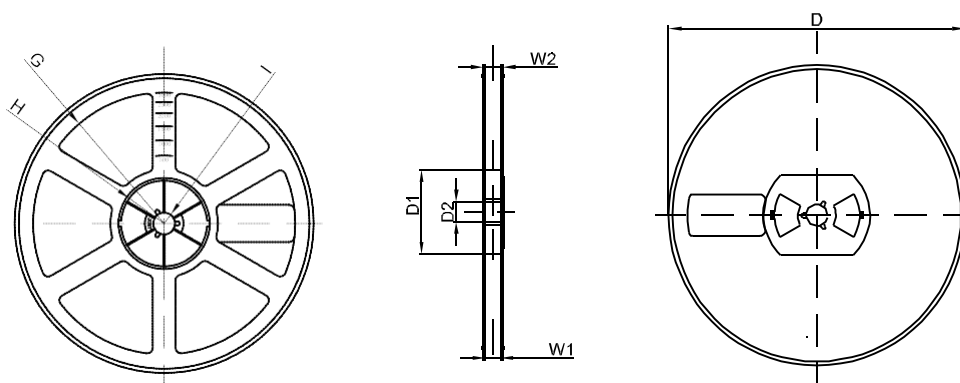


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-23 Tape Leader and Trailer



SOT-23 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1