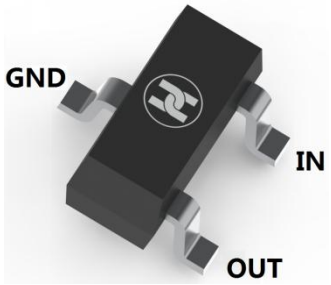
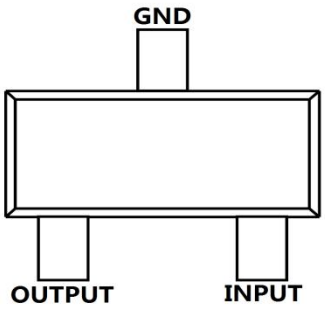
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

FEATURES

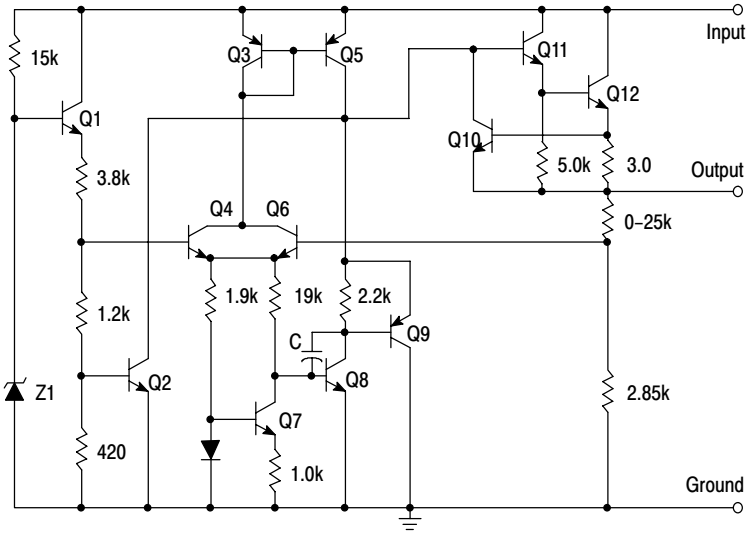
- Maximum Output Current Io: 0.1 A
- Output Voltage Vo: 5 V
- Continuous Total Dissipation
  PD: 0.25 W (Ta= 25 ℃)
- Surface Mount device



SOT-23



SCHEMATIC DIAGRAM



MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- 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	°C/W
Operating Temperature	Topr	-40~+125	°C
Storage Temperature Range	T_{STG}	-55 ~+150	°C

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ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE (Vi=10V,Io=40mA,Ci=0.33uF,,Co=0.1uF, unless otherwise specified)

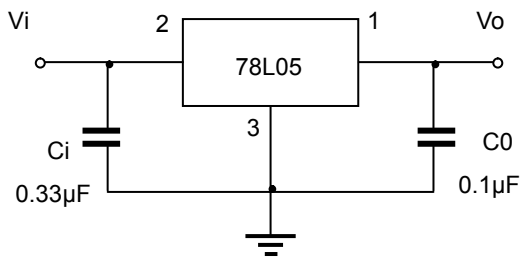
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_O	4.75	5.0	5.25	V	7V≤V_i≤20V,I_O=1mA~40mA, 0°C≤T_A≤+125°C
		4.75	5.0	5.25	V	7V≤V_i≤20V,I_O=1mA~70mA, 0°C≤T_A≤+125°C
Load Regulation	ΔV_O		15	60	mV	I_O=1mA~100mA,T_A=+25°C
			8	30	mV	I_O=1mA~40mA,T_A=+25°C
Line regulation	ΔV_O		32	150	mV	7V≤V_i≤20V
			26	100	mV	8V≤V_i≤20V,T_A=+25°C
Quiescent Current	I_q		3.8	6	mA	T_A=+25°C
Quiescent Current Change	ΔI_q			1.5	mA	8V≤V_i≤20V,-25°C≤T_A≤+125°C
				0.1	mA	1mA≤I_i≤40mA,-25°C≤T_A≤+125°C
Output Noise Voltage	V_N		42		μV/V_O	10Hz≤f≤100kHz,T_A=+25°C
Ripple Rejection	RR	41	49		dB	8V≤V_i≤20V,f=120Hz, -25°C≤T_A≤+125°C
Dropout Voltage	V_d		1.7		V	T_A=+25°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

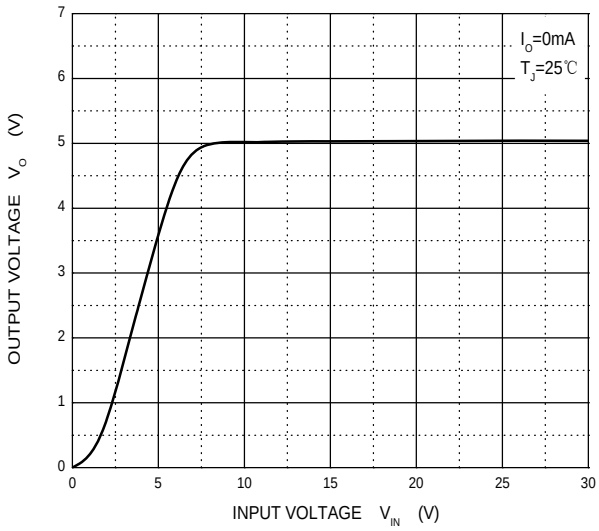


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

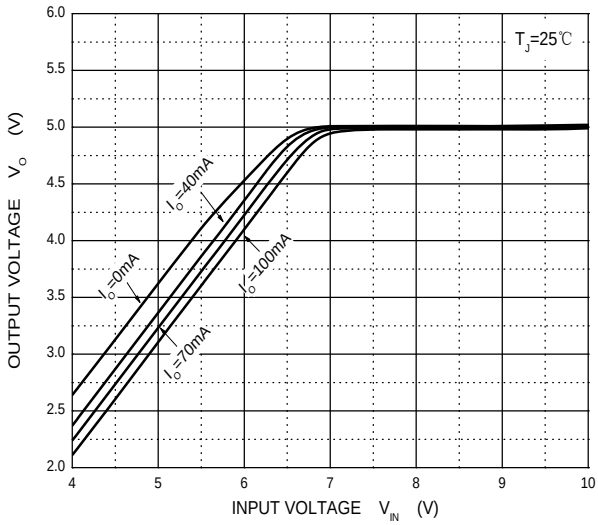
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

Typical Characteristics

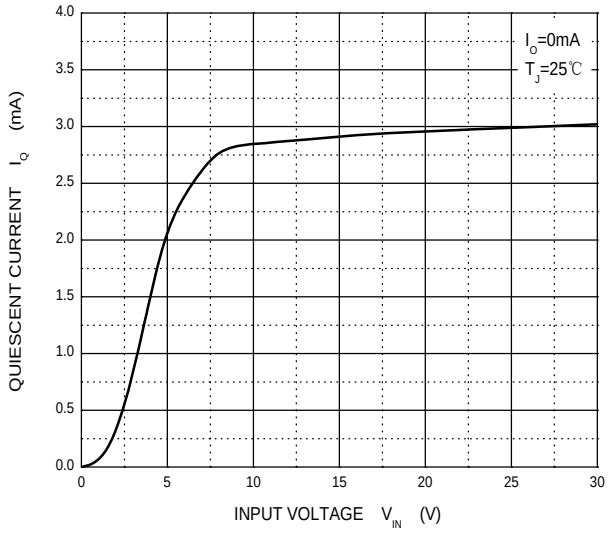
Output Characteristics



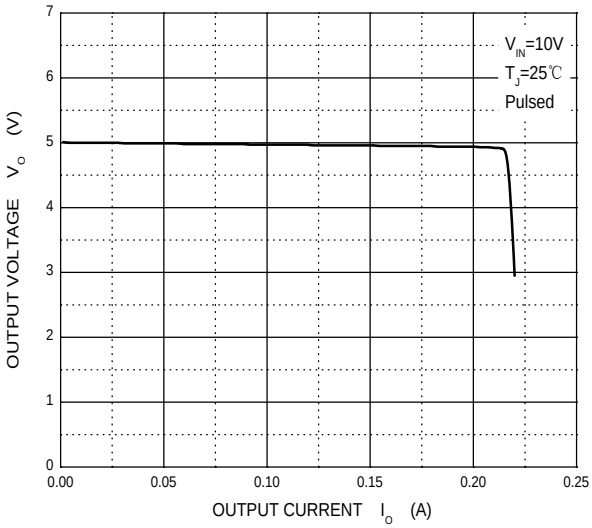
Dropout Characteristics



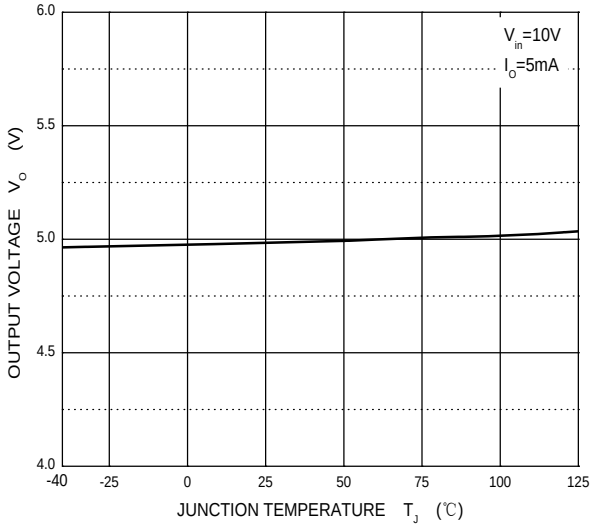
Quiescent Current vs Input Voltage



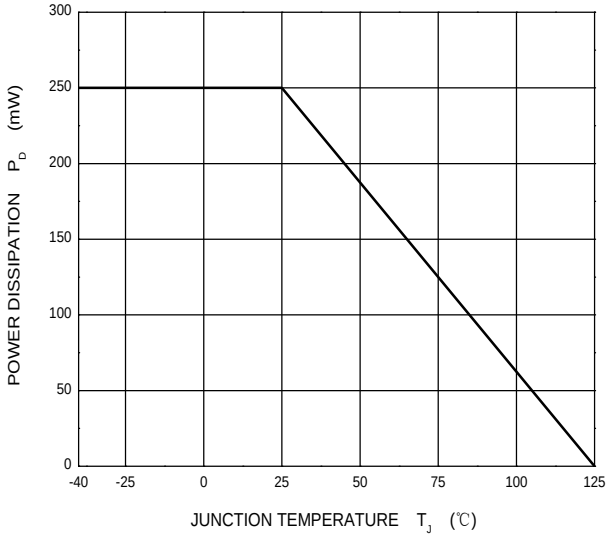
Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature

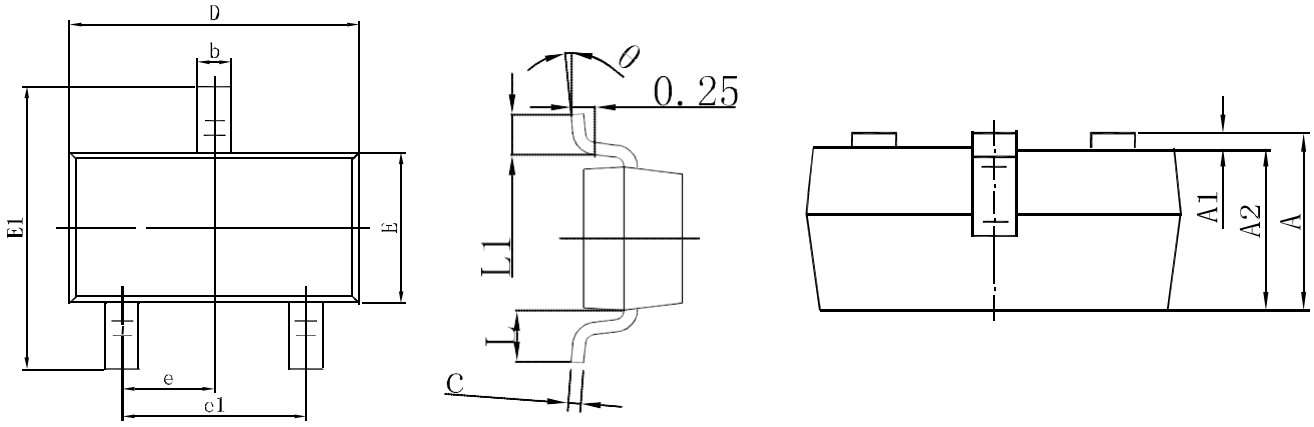


Power Derating Curve



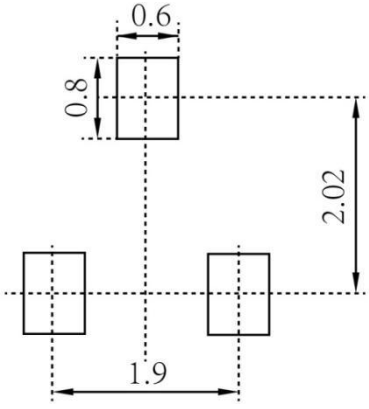
PLASTIC-ENCAPSULATE VOLTAGE REGULATORS

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:

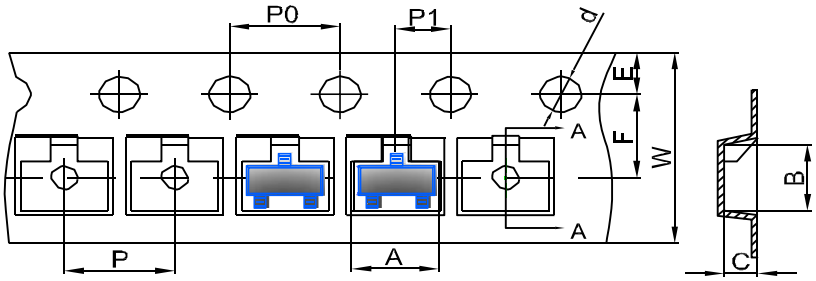
1.Controlling dimension: in millimeters

2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

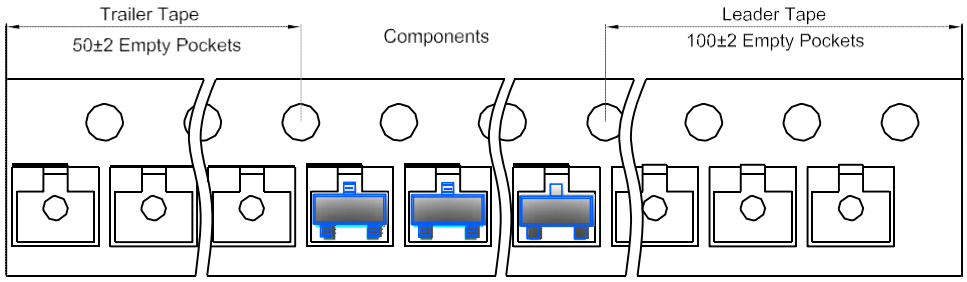
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

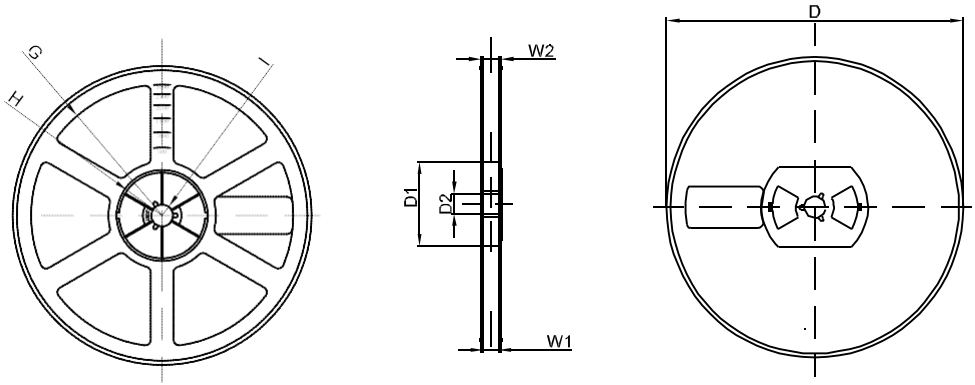


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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