

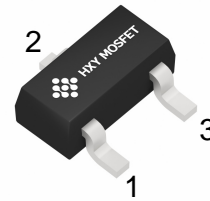


### Features

- Available Output Voltage:5.0V
- Maximum Input Voltage:  
30V for  $V_{OUT} < 10V$
- Maximum Output Current:  
Exceed 100mA at  $T_J = 25^{\circ}C$
- Output Tolerances:  
 $\pm 3\%$  at  $T_J = 25^{\circ}C$   
 $\pm 5\%$  over the Operating  $T_J$
- No External Components

### Applications

- TV Board
- Air Conditioner
- Vehicle Mounted Radar
- Charging Device



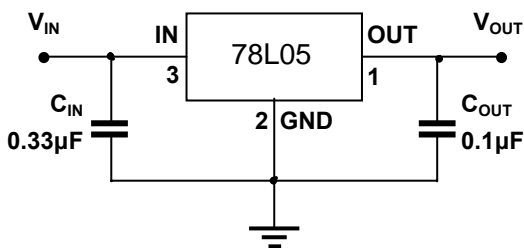
- 1: OUT
- 2: GND
- 3: IN

SOT-23

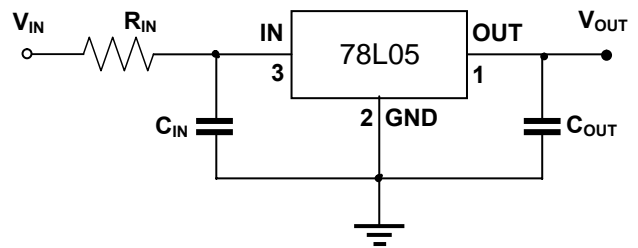
### Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
78L05	SOT-23	L05	3000

### Typical Application Circuit



Conventional Circuit



Resistance are used at IN



### Absolute Maximum Ratings

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Maximum input voltage	$V_{IN}$	30	V
Maximum junction temperature	$T_{J\ Max}$	150	°C
Storage temperature	$T_{stg}$	- 65 ~ 150	°C
Soldering temperature & time	$T_{solder}$	260°C, 10s	-

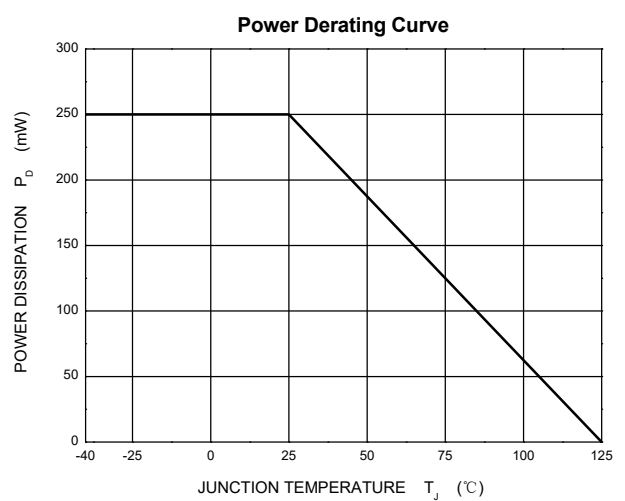
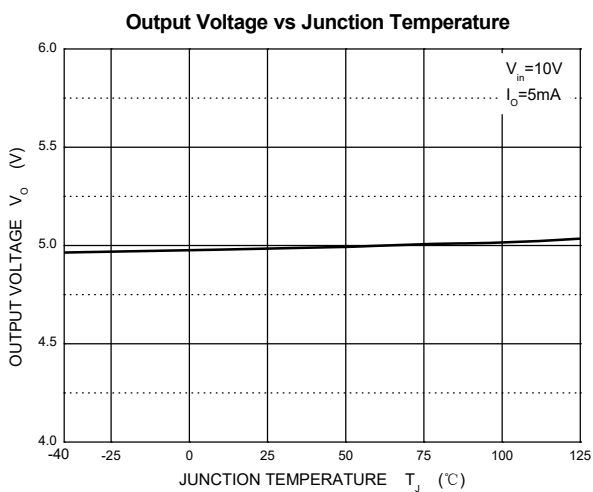
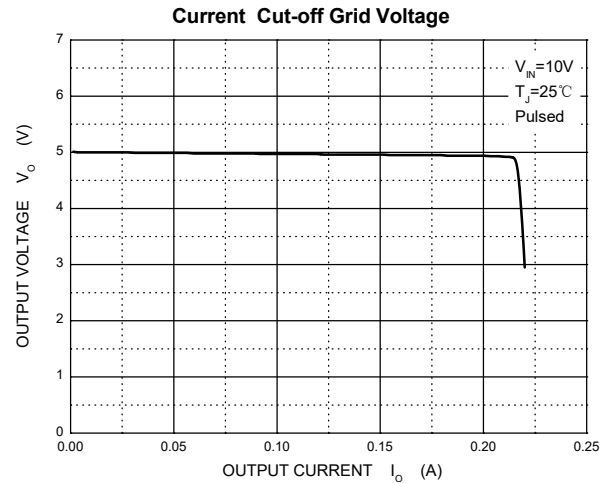
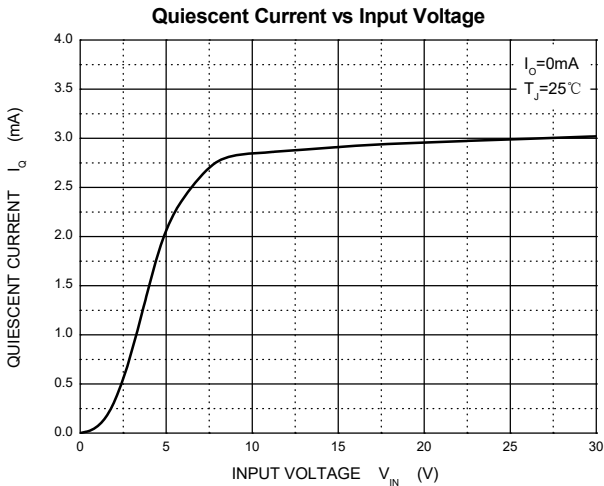
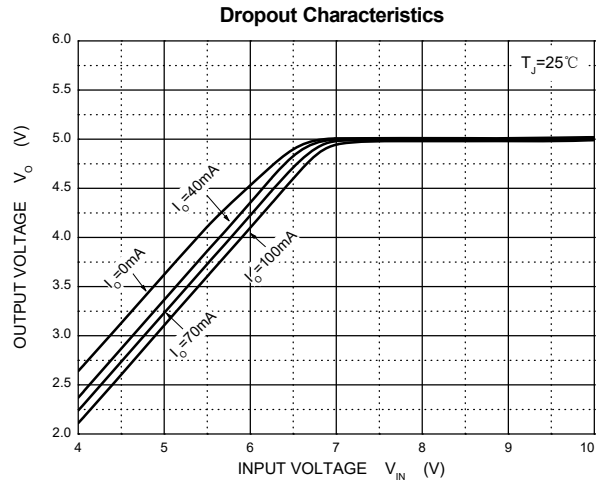
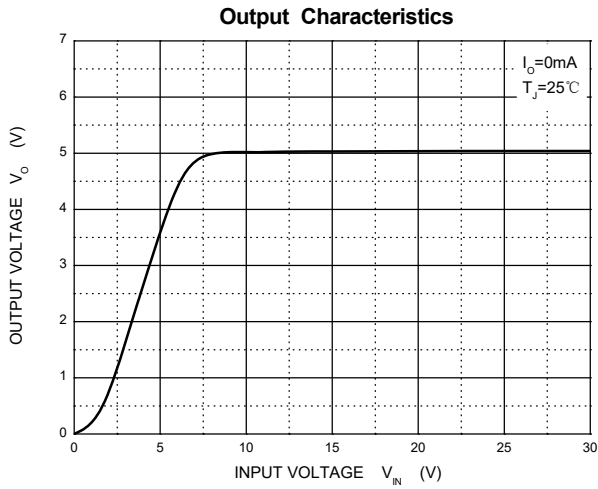
### Electrical Characteristics

78L05 ( $V_{IN} = 10V$ ,  $I_{OUT} = 40mA$ ,  $C_{IN} = 0.33\mu F$ ,  $C_{OUT} = 0.1\mu F$ ,  $T_J = 25^\circ C$ , unless otherwise specified)

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Input voltage	$V_{IN}$	-	-	-	30	V
Output voltage	$V_{OUT}$	$T_J = 25^\circ C$	4.85	5.00	5.15	V
		$V_{IN} = 7$ to 20V, $I_{OUT} = 1$ to 40mA	4.75	5.00	5.25	
		$I_{OUT} = 1$ to 70mA	4.75	5.00	5.25	
Output current	$I_{OUT}$	$T_J = 25^\circ C$	100	-	-	mA
Quiescent current	$I_Q$	$I_{OUT} = 0mA$	-	3.8	6.0	mA
Quiescent current change	$\Delta I_Q$	$V_{IN} = 8$ to 20V	-	-	1.5	mA
		$I_{OUT} = 1$ to 40mA	-	-	0.1	mA
Dropout voltage	$V_{DO}$	$T_J = 25^\circ C$	-	1.7	-	V
Line regulation	$\Delta V_{LINE}$	$V_{IN} = 7$ to 20V, $T_J = 25^\circ C$	-	32	150	mV
		$V_{IN} = 8$ to 20V, $T_J = 25^\circ C$	-	26	100	
Load regulation	$\Delta V_{LOAD}$	$I_{OUT} = 1$ to 100mA, $T_J = 25^\circ C$	-	15	60	mV
		$I_{OUT} = 1$ to 40mA, $T_J = 25^\circ C$	-	8	30	
Output noise voltage	$V_N$	$f = 10$ to 100kHz, $T_J = 25^\circ C$	-	42	-	$\mu V/V_{OUT}$
Ripple rejection	RR	$V_{IN} = 8$ to 20V, $f = 120Hz$	41	49	-	dB

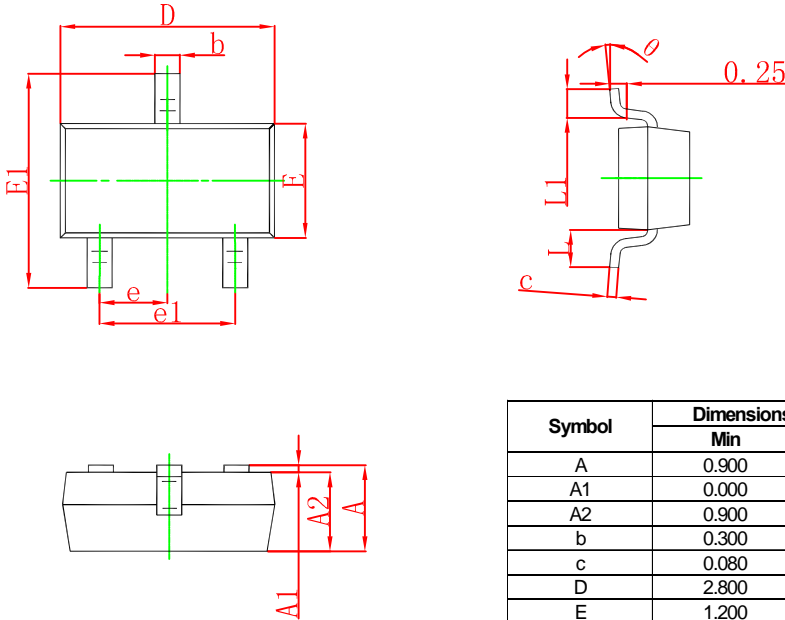


### Typical Characteristics



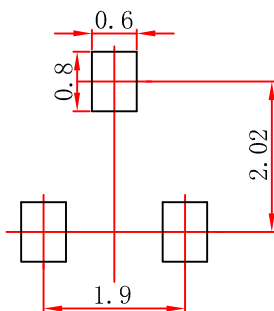


### SOT-23 Package Outline Dimensions



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.



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