

# TA78DS05P, TA78DS10P

BIPOLAR LINEAR INTEGRATED CIRCUIT  
SILICON MONOLITHIC

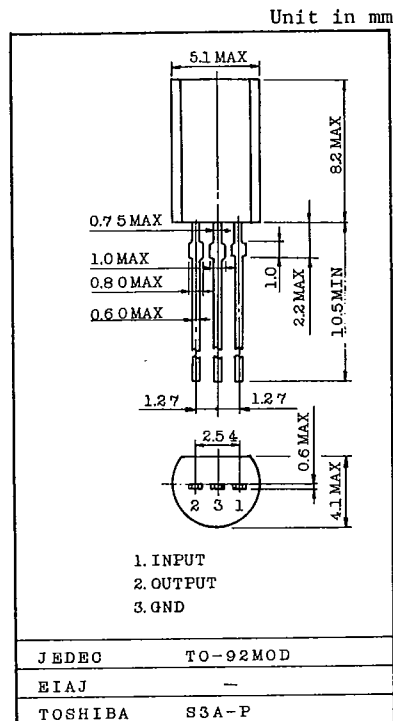
T-58-11-13

### 5V, 10V LOW DROPOUT VOLTAGE REGULATOR

The TA78DS05P and TA78DS10P are three terminal regulator of 30mA max output current.

For the low standby current, the TA78DS05P and TA78DS10P are designed for use in low dropout voltage regulator and buckup voltage regulator in memory.

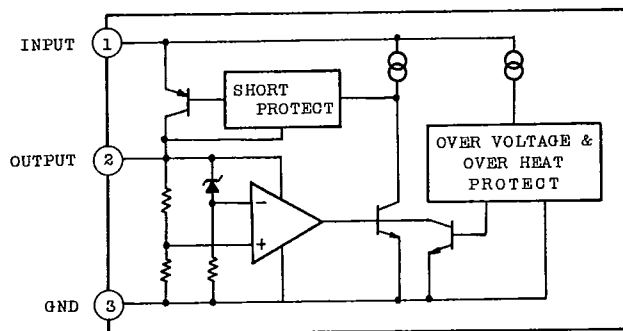
- Low standby current : 500µA (Typ)
  - Max output current : 30mA (Max)
  - Low Input - Output voltage : 0.3V (Max)
  - Multi Protection :
    - Power Supply reverse connection
    - 60V Road Dump
    - Thermal protection
    - Short protection
- Package : TO-92 MOD



### MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Operating Input Voltage	V <sub>IN</sub>	29	V
Input Voltage	V <sub>IN</sub>	60	V
Power Dissipation	P <sub>D</sub>	800	mW
Operating Temperature	T <sub>opr</sub>	-40 ~ 85	°C
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ 150	°C
Lead Temp. · Time	T <sub>sol</sub>	260 (10sec)	°C

### BLOCK DIAGRAM



TA78DS05P,  
TA78DS10P

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ELECTRICAL CHARACTERISTICS  $V_{IN}=14V$ ,  $I_{OUT}=5mA$ ,  $T_j=25^\circ C$ 

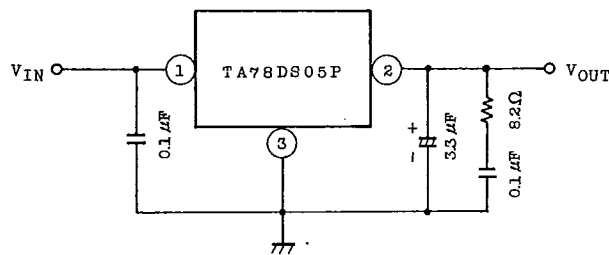
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	-	$V_{IN}=5.35 \sim 26V$ , $T_a=-40 \sim 85^\circ C$	4.5	5	5.5	V
Voltage Change	$\Delta V_{OUT}(1)$	-	$V_{IN}=9 \sim 16V$	-	2	10	mV
			$V_{IN}=6 \sim 26V$	-	4	30	
Load Change	$\Delta V_{OUT}(2)$	-	$I_{OUT}=5 \sim 30mA$	-	14	50	
Supply Current	$I_{CC}$	-	$I_{OUT} \leq 5mA$ , $V_{IN}=6 \sim 26V$	-	0.5	1	mA
Input-Output Voltage	$V_{DROP}$	-	$I_{OUT}=5mA$	-	0.1	0.2	V
			$I_{OUT}=10mA$	-	0.2	0.3	
Max. Operating Input Voltage	$V_{IN}$	-		29	33	-	

TA78DS10P

ELECTRICAL CHARACTERISTICS ( $V_{IN}=14V$ ,  $I_{OUT}=5mA$ ,  $T_j=25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	-	$V_{IN}=10.35 \sim 26V$ , $T_a=-40 \sim 85^\circ C$	9	10	11	V
Voltage Change	$\Delta V_{OUT}(1)$	-	$V_{IN}=14 \sim 21V$	-	4	20	mV
			$V_{IN}=11 \sim 26V$	-	8	60	
Load Change	$\Delta V_{OUT}(2)$	-	$I_{OUT}=5 \sim 30mA$	-	28	100	
Supply Current	$I_{CC}$	-	$I_{OUT} \leq 5mA$ , $V_{IN}=11 \sim 26V$	-	0.7	-	mA
Input-Output Voltage	$V_{DROP}$	-	$I_{OUT}=5mA$	-	0.1	0.2	V
			$I_{OUT}=10mA$	-	0.2	0.3	
Max. Operating Input Voltage	$V_{IN}$	-		29	33	-	

## APPLICATION CIRCUIT



TA78DS05P,  
TA78DS10P

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