

# TA78DL05P ~ TA78DL15P

NEAR INTEGRATED CIRCUIT  
SILICON MONOLITHIC

○ 5V, 9V, 12V, 15V

## LOW DROPOUT VOLTAGE REGULATOR

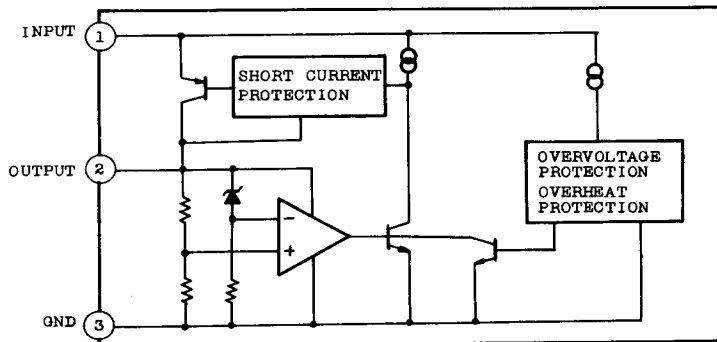
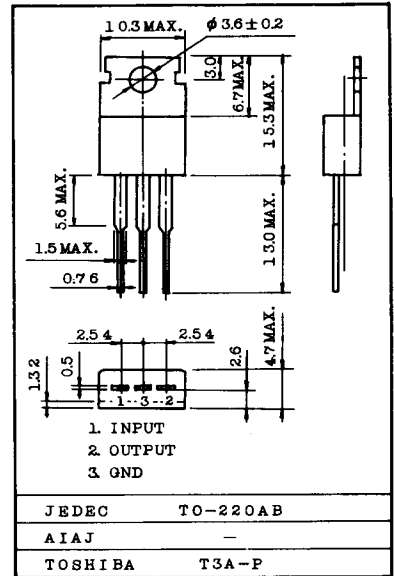
The TA78DL series are three-terminal regulators with maximum output current 250mA, packed in transistor size TO-220AB, consuming low standby current, best suited as backup power supply for memory, etc. and power supply for medium size circuits. This series is further provided with various protective functions.

- Low standby current consumption : 500 $\mu$ A (standard)
- Maximum output current : 250mA (max.)
- Less I/O voltage difference : 0.6V max.
- Multiple protections
  - : Power reverse connection/60V load damp/  
thermal protection/short-circuit protection
- Packaged in TO-220AB

### RATING MAXIMUM (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 Consumption	P <sub>D</sub>	20	W
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 Temperature · Time	T <sub>sol</sub>	260 (10sec)	°C

Unit: mm



TA78DL05P

ELECTRICAL CHARACTERISTICS ( $V_{IN}=14V$ ,  $I_{OUT}=10mA$ ,  $T_j=25^\circ C$ )

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 Regulation	$\Delta V_{OUT}(1)$	-	$V_{IN} = 9 \sim 16V$	-	2	10	mV
			$V_{IN} = 6 \sim 26V$	-	4	30	
Load Regulation	$\Delta V_{OUT}(2)$	-	$I_{OUT} = 10 \sim 200mA$	-	14	50	mV
Quiescent Current	$I_{CC}$	-	$I_{OUT} \leq 10mA$ , $V_{IN} = 6 \sim 26V$	-	0.5	1	mA
Dropout Voltage	$V_{DROP}$	-	$I_{OUT} = 50mA$	-	0.15	0.3	V
			$I_{OUT} = 200mA$	-	0.4	0.6	
Max. Operating Input Voltage	$V_{IN}$	-		29	33	-	V

TA78DL09P

ELECTRICAL CHARACTERISTICS ( $V_{IN}=16V$ ,  $I_{OUT}=10mA$ ,  $T_j=25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	$V_{OUT}$	-	$V_{IN}=9.35\sim 26V$ , $T_a=-40\sim 85^\circ C$	8.1	9	9.9	V
Voltage Regulation	$\Delta V_{OUT}(1)$	-	$V_{IN}=13\sim 20V$	-	3	18	mV
			$V_{IN}=10\sim 26V$	-	7	50	
Load Regulation	$\Delta V_{OUT}(2)$	-	$I_{OUT} = 10\sim 200mA$	-	25	90	mV
Quiescent Current	$I_{CC}$	-	$I_{OUT} \leq 10mA$ , $V_{IN}=10\sim 26V$	-	0.65	-	mA
Dropout Voltage	$V_{DROP}$	-	$I_{OUT}=50mA$	-	0.15	0.3	V
			$I_{OUT}=200mA$	-	0.4	0.6	
Max. Operating Input Voltage	$V_{IN}$	-		29	33	-	V

TA78DL12P

ELECTRICAL CHARACTERISTICS ( $V_{IN}=18V$ ,  $I_{OUT}=10mA$ ,  $T_j=25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX	UNIT
Output Voltage	$V_{OUT}$	-	$V_{IN}=12.35\sim 26V$ , $T_a=-40\sim 85^\circ C$	10.8	12	13.2	V
Voltage Regulation	$\Delta V_{OUT}(1)$	-	$V_{IN}=16\sim 23V$	-	5	24	mV
			$V_{IN}=13\sim 26V$	-	10	70	
Load Regulation	$\Delta V_{OUT}(2)$	-	$I_{OUT}=10 \sim 200mA$	-	33	120	mV
Quiescent Current	$I_{CC}$	-	$I_{OUT} \leq 10mA$ , $V_{IN}=13\sim 26V$	-	0.8	-	mA
Dropout Voltage	$V_{DROP}$	-	$I_{OUT} = 50mA$	-	0.15	0.3	V
			$I_{OUT} = 200mA$	-	0.4	0.6	
Max. Operating Input Voltage	$V_{IN}$	-		29	33	-	V

# TA78DL05P ~ TA78DL15P

ELECTRICAL CHARACTERISTICS ( $V_{IN}=20V$ ,  $I_{OUT}=10mA$ ,  $T_j=25^{\circ}C$ )

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	-	$V_{IN}=15.35\sim 26V, T_a=-40\sim 85^{\circ}C$	13.5	15	16.5	V
Voltage Regulation	$\Delta V_{OUT}(1)$	-	$V_{IN}=19\sim 26V$	-	6	30	mV
			$V_{IN}=16\sim 26V$	-	12	80	
Load Regulation	$\Delta V_{OUT}(2)$	-	$I_{OUT}=10\sim 200mA$	-	40	150	mV
Quiescent Current	$I_{CC}$	-	$I_{OUT}\leq 10mA, V_{IN}=16\sim 26V$	-	0.9	-	mA
Dropout Voltage	$V_{DROP}$	-	$I_{OUT}=50mA$	-	0.15	0.3	V
			$I_{OUT}=200mA$	-	0.4	0.6	
Max. Operating Input Voltage	$V_{IN}$	-		29	33	-	V

