



BCT78L05 3-Terminal

0.2A Positive Voltage Regulator

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3-Terminal 0.2A Positive Voltage Regulator

FEATURES

- Output Current up to 200mA
- Fixed Output Voltage of 5V
- Thermal Overload Shutdown Protection
- Short Circuit Current Limiting

DESCRIPTION

The BCT78L05 family is monolithic fixed voltage regulator integrated circuit. They are suitable for applications that required supply current up to 200mA.

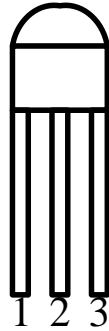
ORDERING INFORMATION

Order Number	V _{OUT} (V)	Package Type	Temperature Range	Marking	QTY/Reel
BCT78L05EJR-TR	5	SOT89-3	-40°C to +85°C	78L05 XXXXX	3000
BCT78L05EHR-TP	5	TO92	-40°C to +85°C	78L05 XXXXX	-
BCT78L05EUR-TR	5	SOT23-3	-40°C to +85°C	00XX	3000

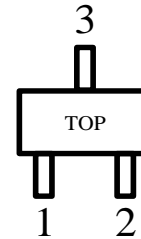
Note: "X" in Marking will be appeared as the batch code.

PIN CONFIGURATIONS

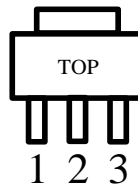
TO92



SOT23-3



SOT89-3



PIN FUNCTIONS

Pin		Name	I/O	DESCRIPTION
TO92/SOT89-3	SOT23-3			
1	1	V_{OUT}	O	Output voltage pin for the regulation.
2	3	GND	G	Ground Pin for fixed output.
3	2	V_{IN}	I	Input voltage pin for the regulator.

ABSOLUTE MAXIMUM RATINGS

(Operating temperature range applies unless otherwise specified.)

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage	$V_{OUT}=5\sim 9V$	V_{IN}	15	V
Output Current		I_{OUT}	200	mA
Power Dissipation	TO-92	P_D	625	mW
	SOT-89		350	
Ambient Operating Temperature		T_{OPR}	-40 ~ +85	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

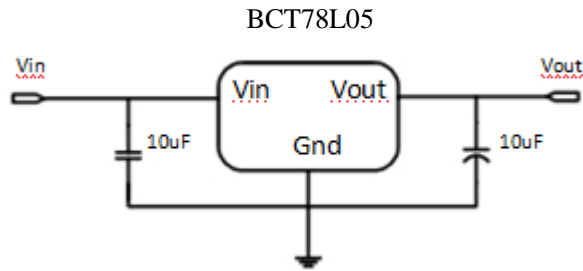
ELECTRICAL CHARACTERISTICS

(0°C < T_J < 125°C, $C_1=0.33\mu F$, $C_O=0.1\mu F$, unless otherwise specified)

For BCT78L05M ($V_{IN}=10V, I_{OUT}=40mA$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$T_J=25^\circ C$	4.80	5.0	5.20	V
		$7V \leq V_{IN} \leq 20V, I_{OUT}=1mA \sim 40mA$	4.75		5.25	V
		$7V \leq V_{IN} \leq 20V$ $I_{OUT}=1mA-200mA$	4.75		5.25	V
Load Regulation	ΔV_{OUT}	$T_J=25^\circ C, I_{OUT}=1mA \sim 100mA$		15	60	mV
		$T_J=25^\circ C, I_{OUT}=1mA \sim 40mA$		8	30	mV
Line Regulation	ΔV_{OUT}	$7V \leq V_{IN} \leq 20V, T_J=25^\circ C$		8	150	mV
		$8V \leq V_{IN} \leq 20V, T_J=25^\circ C$		6	100	mV
Quiescent Current	I_Q			2.0	5.0	mA
Quiescent Current Change	ΔI_Q	$8V \leq V_{IN} \leq 20V$			1.5	mA
		$1mA \leq I_{OUT} \leq 40mA$			0.1	mA
Output Noise Voltage	e_N	$10Hz \leq f \leq 100kHz$		40		μV
Temperature Coefficient of V_{OUT}	$\Delta V_O/\Delta T$	$I_{OUT}=5mA$		-0.65		mV/°C
Ripple Rejection	RR	$8V \leq V_{IN} \leq 20V, f=120Hz, T_J=25^\circ C$		60		dB
Dropout Voltage	V_D	$T_J=25^\circ C$		1.3		V

TYPICAL APPLICATION CIRCUIT



BLOCK DIAGRAM

