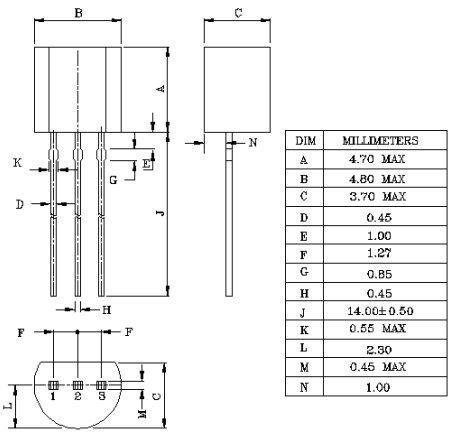
KIA78DS05BP/BPV/BF/CPV

BIPOLAR LINEAR INTEGRATED CIRCUIT

LOW DROPOUT VOLTAGE REGULATOR.

The KIA78DS05 series consists of positive fixed output voltage regulator IC capable of sourcing current up to 30mA. Due to the features of low dropout voltage and low standby current, these devices are useful for battery powered equipment. This series includes current limiting, thermal shutdown, over voltage protection, input fault protection and excessive transient protection circuits internally.

- Low Standby Current of 500μA Typical.
- Maximum Output Current Up to 30mA.
- Low Dropout Votage of Less than 0.3V.
- Multi-protection : Reverse Connection of Power Supply, 60V Load Dump, Thermal Shut Down and Current Limiting.



DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

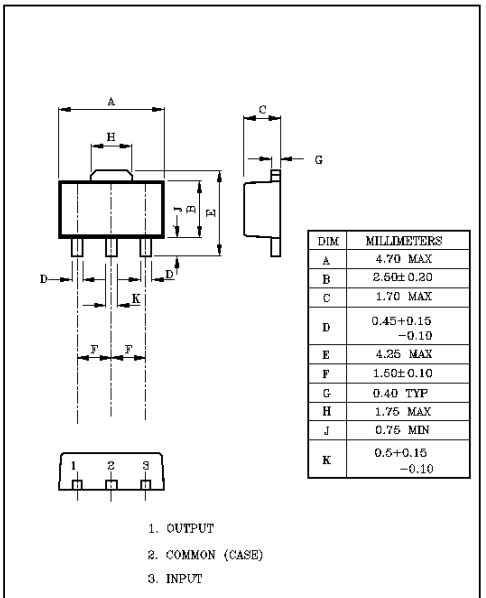
TO-92

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Operating Input Voltage		V_{IN}	29	V
Input Voltage of Surge		V_{IN}	60	V
Power Dissipation	KIA78DS05 BP/BPV/CPV	P_D	600	mW
	KIA78DS05BF		500	
Operating Temperature		T_{opr}	-40~85	℃
Junction Temperature		T_j	150	℃
Storage Temperature		T_{stg}	-55~150	℃
Soldering Temperature		T_{SOL}	260 (10sec)	℃

MARKING

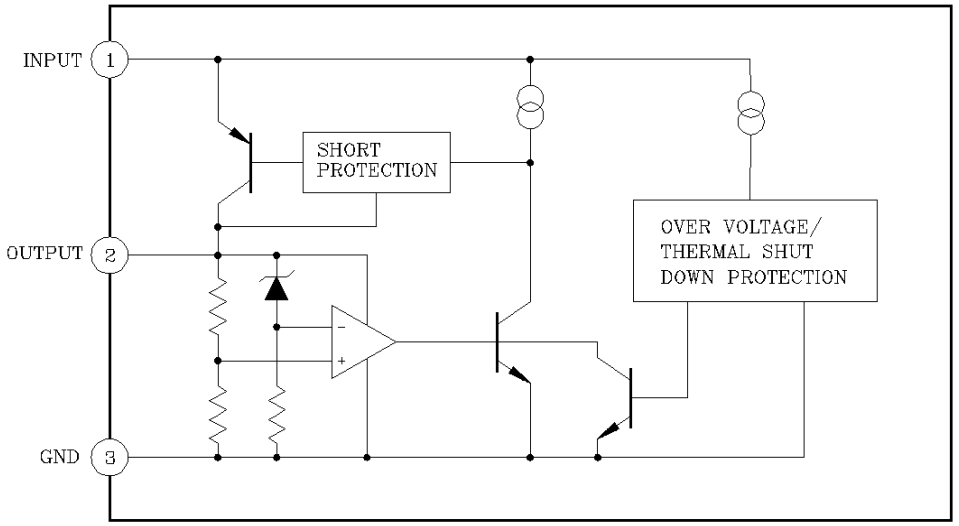
Type No.	Marking
KIA78DS05BF	8M



DIM	MILLIMETERS
A	4.70 MAX
B	2.50±0.20
C	1.70 MAX
D	0.45+0.15 −0.10
E	4.25 MAX
F	1.50±0.10
G	0.40 TYP
H	1.75 MAX
J	0.75 MIN
K	0.5+0.15 −0.10

SOT-89

BLOCK DIAGRAM

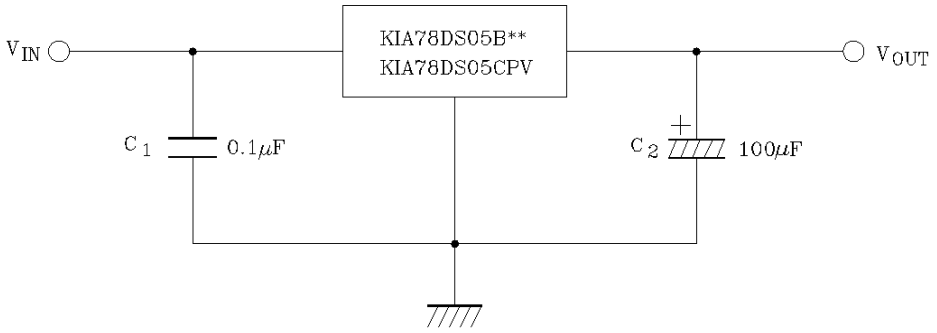


ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, V_{IN}=14V, I_{OUT}=5mA, C_{IN}=0.1μF, C_{OUT}=3.3μF, Tj=25℃)

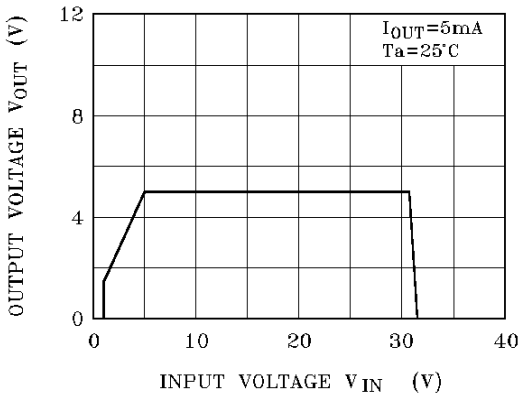
CHARACTERISTIC	SYMBOL	TEST CONDITION	KIA78DS05B**			KIA78DS05CPV			UNIT
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Output Voltage	V_{OUT}	5.35V≦V_{IN}≦26V	4.75	5.0	5.25	4.8	5.0	5.2	V
		5.35V≦V_{IN}≦26V -40℃≦Ta≦85℃	4.5	5.0	5.5	4.75	5.0	5.25	
Line Regulation	Reg-Line	9.0V≦V_{IN}≦16V	-	1	10	-	1	10	mV
		6.0V≦V_{IN}≦26V	-	4	30	-	4	30	
Load Regulation	Reg-Load	5.0mA≦I_{OUT}≦30mA	-	1	50	-	1	50	mV
Quiescent Current	I_B	I_{OUT}=0	-	0.5	1	-	0.5	1	mA
		6V≦V_{IN}≦26V, I_{OUT}=5mA	-	0.6	1	-	0.6	1	
Dropout Voltage	V_D	I_{OUT}=5mA	-	0.1	0.2	-	0.1	0.2	V
		I_{OUT}=10mA	-	0.2	0.3	-	0.2	0.3	
Max. Operating Voltage	V_{IN}		29	33	-	29	33	-	V

APPLICATION CIRCUIT

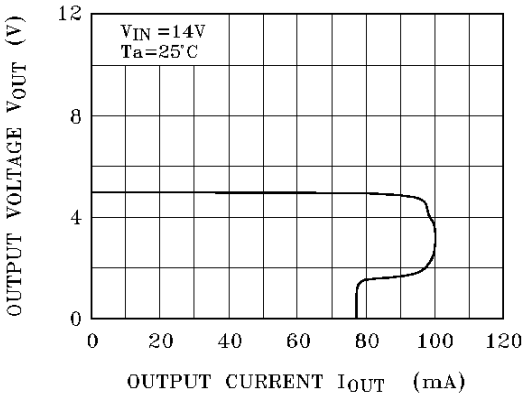


Capacitor C2 must be guaranteed to operate of the temperature range that the regulator should be operated correctly, 100μF is a suitable value to suppress the oscillation phenomenon at the output terminal.

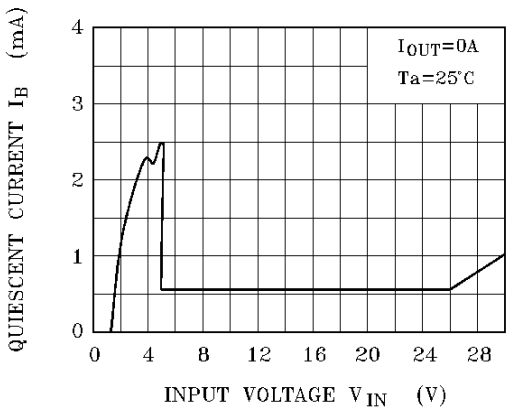
V_{OUT} – V_{IN}



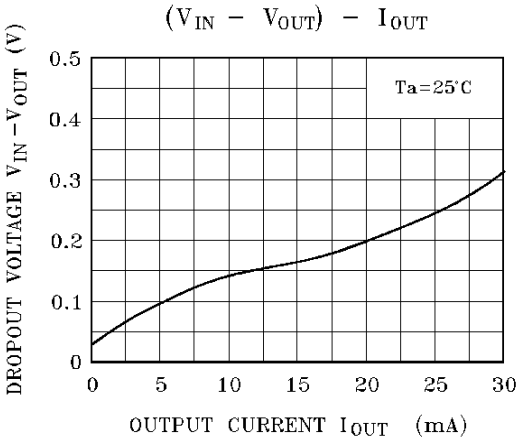
V_{OUT} – I_{OUT}



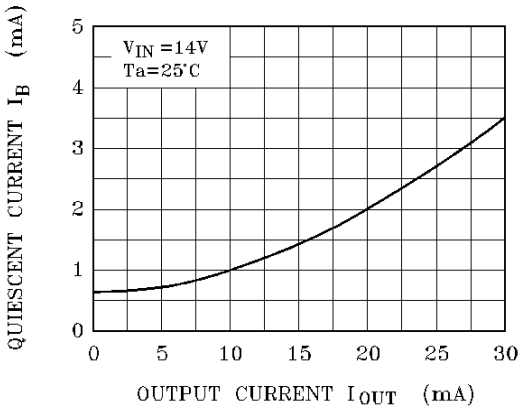
I_B – V_{IN}



(V_{IN} – V_{OUT}) – I_{OUT}



I_B – I_{OUT}



P_D – Ta

