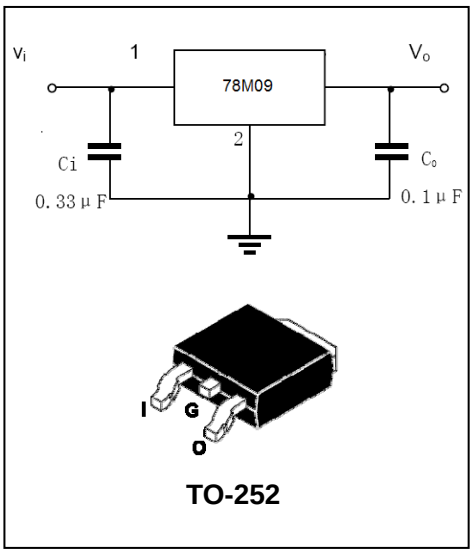
Three-terminal positive voltage regulator BL78M09

FEATURES

- Output current in excess of 0.5A.
- No extemal components.
- Internal thermal overload protection.
- Intermal short circuit current-limiting.
- Output transistor safe-area compensation.

Lead-free



TO-252

APPLICATIONS

- Three-terminal positive voltage regulator.

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
V_I	Input voltage	35	V
P_D	Power Dissipation	1.25	W
$R_{\theta JA}$	Thermal Resistance Junction-Air	92	℃/W
T_{OPR}	Operating junction temperature	0 to 125	℃
T_{stg}	Storage temperature range	-65 to +150	℃

Three-terminal positive voltage regulator BL78M09

ELECTRICAL CHARACTERISTICS

(V_{IN}=14V,I_O=350mA,C_{IN}=0.33μF,C_O=0.1μf,unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	V_O	I_O=350mA,V_{IN}=16V 5mA≤I_O≤350mA 11.5V≤V_{IN}≤24V	8.65 8.55 8.55	9 9 9	9.35 9.45 9.45	V
Load regulation(Note1)	△Reg_{load}	5mA≤I_O≤500mA 5mA≤I_O≤200mA		20 10	180 90	mV
Line regulation(Note1)	△Reg_{line}	11.5V≤V_{IN}≤26V,I_O=200mA 12V≤V_{IN}≤26V, I_O=200mA		6 2	100 50	mV
Quiescent Current	I_Q	V_{IN}=16V,I_O=350mA		4.6	6.0	mA
Quiescent Current Change	△I_Q	5mA≤I_O≤350mA 11.5V≤V_{IN}≤26V,I_O=200mA			0.5 0.8	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz		60		μV/V_O
Ripple Rejection	RR	f=120Hz,I_O=300mA, V_I=13V to 23V		56	80	dB
Dropout Voltage	V_D	T_A=+25℃,I_O=350mA		2.0		V
Short Circuit Current	I_{SC}	V_I=16V,T_J=25℃		250		mA
Peak Current	I_{PK}	T_J=25℃		700		mA

Three-terminal positive voltage regulator BL78M09

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

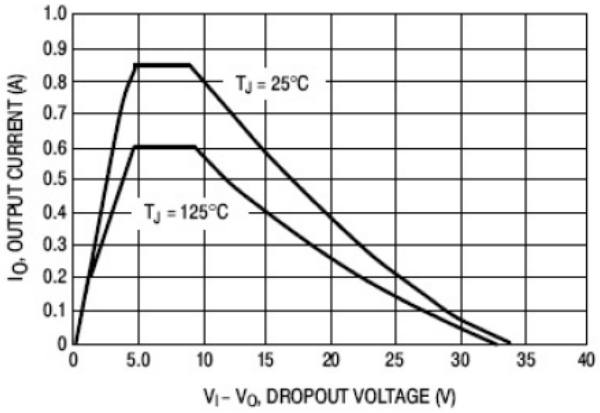


Figure 1.Peak Output Current versus Dropout Voltage

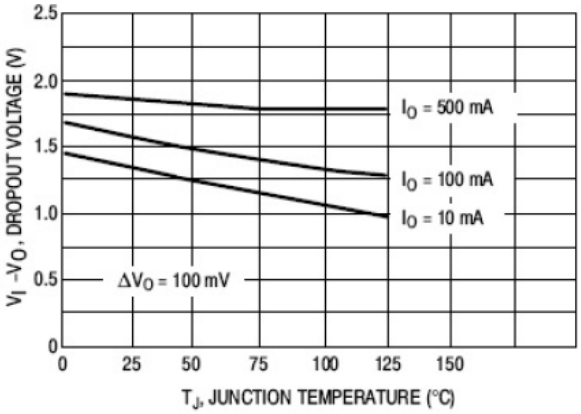


Figure 2. Dropout Voltage versus Junction Temperature

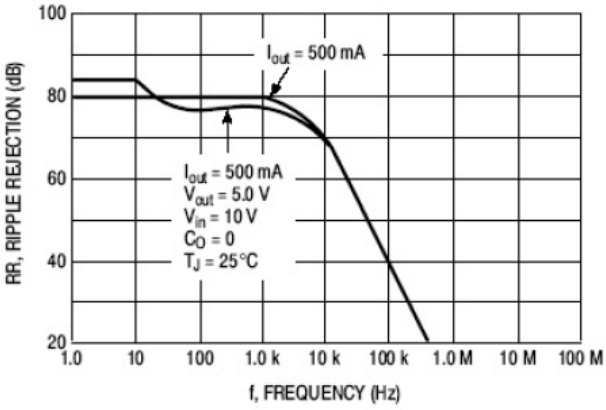


Figure 3. Ripple Rejection versus Frequency

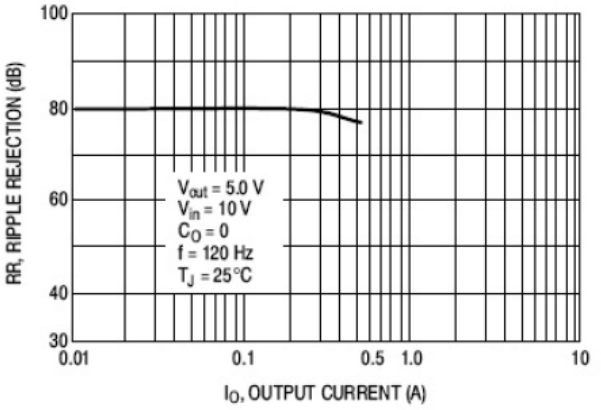


Figure 4. Ripple Rejection versus Output Current

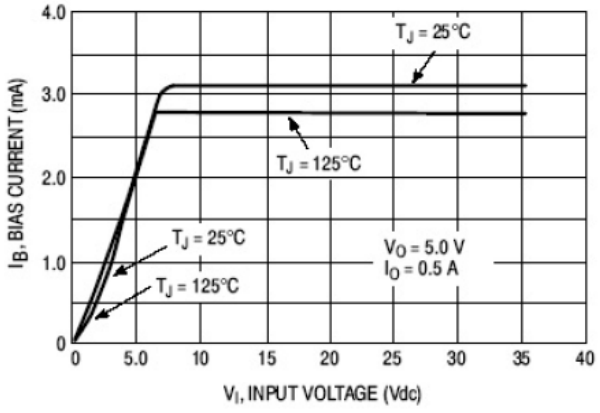


Figure 5. Bias Current versus Input Voltage

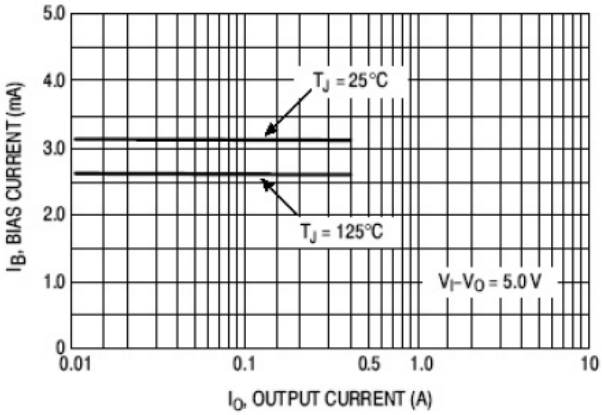


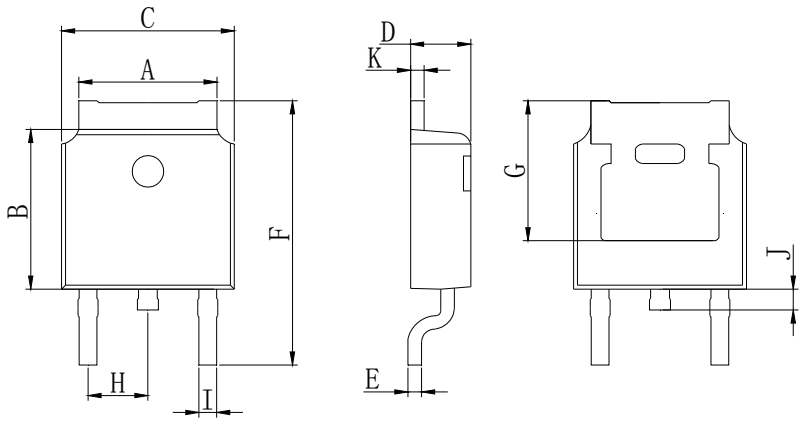
Figure 6. Bias Current versus Output Current

Three-terminal positive voltage regulator BL78M09

PACKAGE OUTLINE

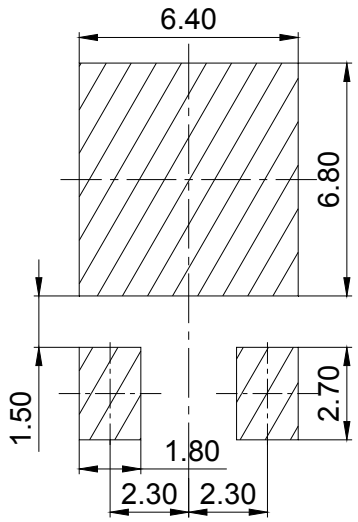
Plastic surface mounted package

TO-252



TO-252		
A	4.95	5.59
B	5.40	6.63
C	6.05	7.10
D	2.20	2.40
E	0.40	0.61
F	8.80	10.60
G	5.35 Typ.	
H	1.98	2.59
I	0.50	0.90
J	0.50	1.20
K	0.45	0.89
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit:mm

Three-terminal positive voltage regulator BL78M09

PACKAGE INFORMATION

Device	Package	Shipping
BL78M09	TO-252	80PCS/Tube
		2500PCS/Tape&Reel