

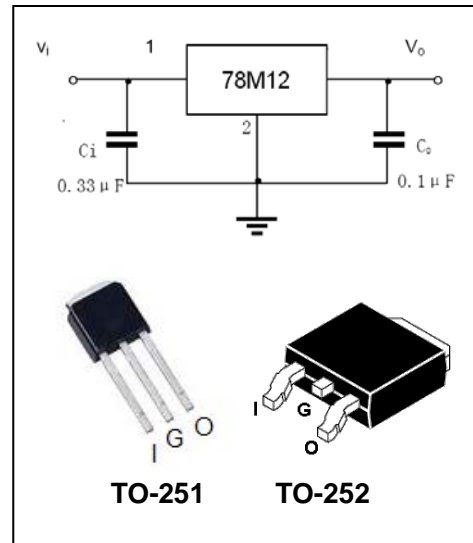
## Three-terminal positive voltage regulator

## BL78M12

### FEATURES

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

HF



### APPLICATIONS

- Three-terminal positive voltage regulator.

### Ordering Information

Part Number	Package	Shipping	Marking Code
BL78M12	TO-251	80 pcs / Tube	78M12
	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	

### 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	$^{\circ}\text{C}/\text{W}$
$T_{\text{OPR}}$	Operating junction temperature	-25 to +125	$^{\circ}\text{C}$
$T_{\text{stg}}$	Storage temperature range	-65 to +150	$^{\circ}\text{C}$

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### ELECTRICAL CHARACTERISTICS

( $V_{IN}=19V, I_O=350mA, C_{IN}=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	$V_O$	$I_O=350mA, V_{IN}=19V$ $5mA \leq I_O \leq 350mA$ $14.5V \leq V_{IN} \leq 27V$	11.5 11.5 11.5	12 12 12	12.5 12.6 12.6	V
Load regulation(Note1)	$\Delta Reg_{load}$	$5mA \leq I_O \leq 500mA$ $5mA \leq I_O \leq 200mA$			240 120	mV
Line regulation(Note1)	$\Delta Reg_{line}$	$14.5V \leq V_{IN} \leq 30V, I_O=200mA$ $16V \leq V_{IN} \leq 30V, I_O=200mA$			100 50	mV
Quiescent Current	$I_Q$	$V_{IN}=19V, I_O=350mA$		4.8	8.0	mA
Quiescent Current Change	$\Delta I_Q$	$5mA \leq I_O \leq 350mA$ $14.5V \leq V_{IN} \leq 30V, I_O=200mA$			0.5 0.8	mA
Output Voltage Drift	$\Delta V / \Delta T$	$I_O=5mA, T_J=0 \text{ to } +125^\circ C$		-0.5		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz$		75		$\mu V/V_O$
Ripple Rejection	RR	$f=120Hz, I_O=300mA,$ $V_I=15V \text{ to } 25V$	55			dB
Dropout Voltage	$V_D$	$T_J=+25^\circ C, I_O=500mA$		2.0		V
Short Circuit Current	$I_{SC}$	$V_I=35V, T_J=25^\circ C$		300		mA
Peak Current	$I_{PK}$	$T_J=25^\circ C$		700		mA

Note:1. Load and line regulation are specified at constant, junction temperature. Change in  $V_O$  due to Heating effects must be taken into account separately. Pulse testing with low duty is used.

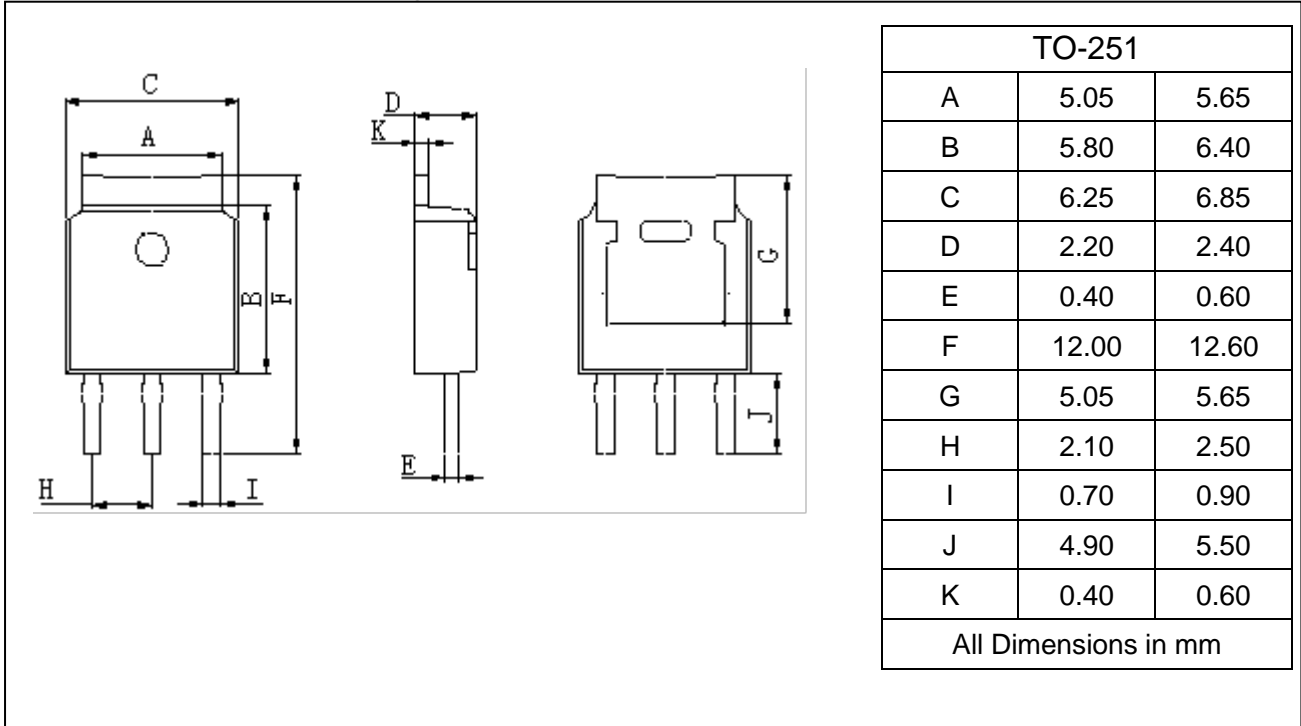
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### PACKAGE OUTLINE

Plastic surface mounted package

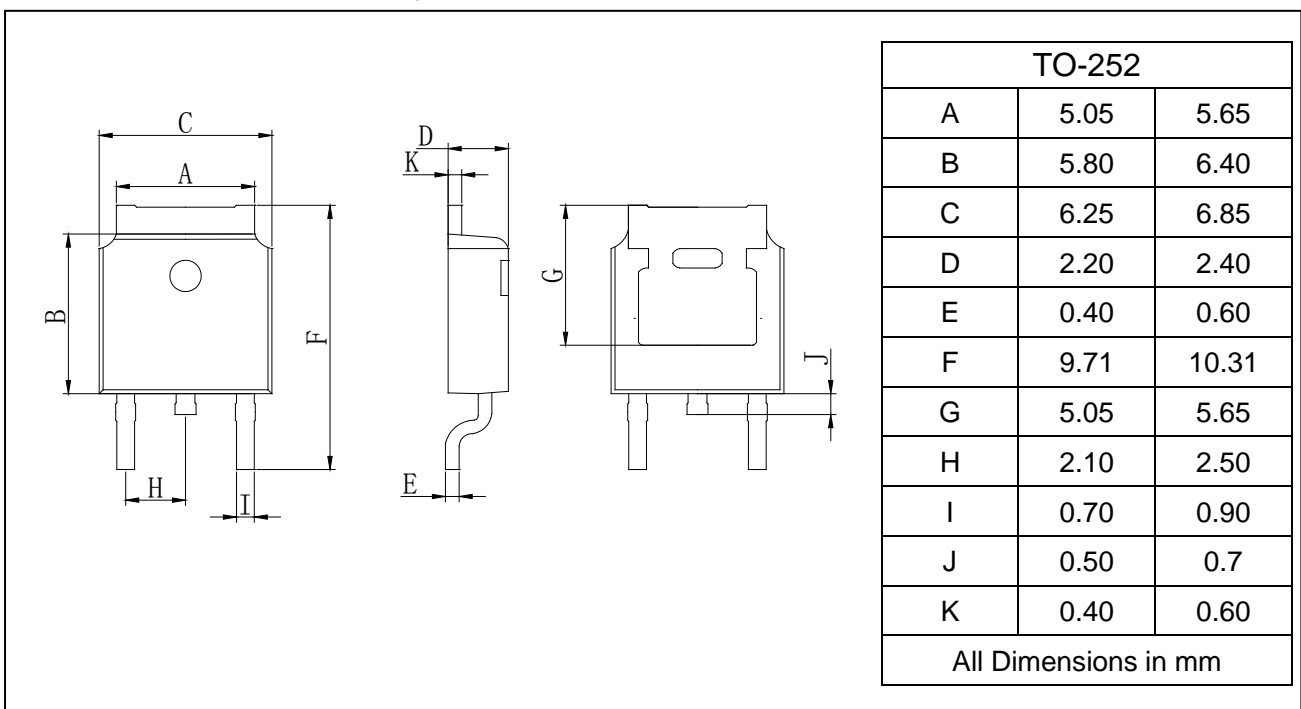
TO-251



### PACKAGE OUTLINE

Plastic surface mounted package

TO-252



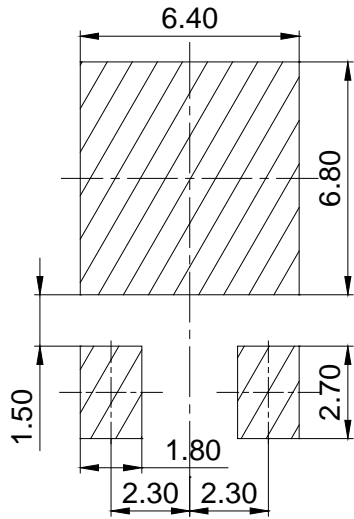
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### SOLDERING FOOTPRINT



Unit: mm