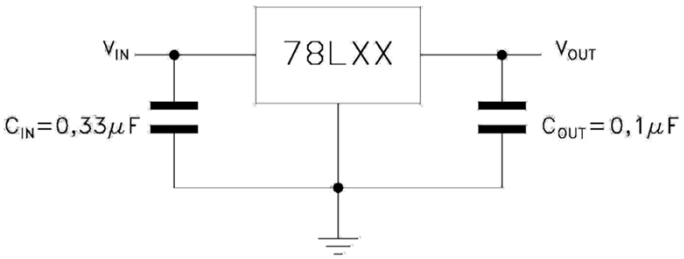
鼎德丰
DING DE FENG

Positive-Vol tage Regulators
78L08

FEATURES

- 3-Terminal Positive-Vol tage Regulators
- Output Current up to 150 mA
- Internal Thermal-Overload Protection
- Internal Short-Circuit Current Limiting
- No External Components
- Output voltages of 8.0V
- Available in plastic TO-92 ,SOT-89 and SOT-23 packages

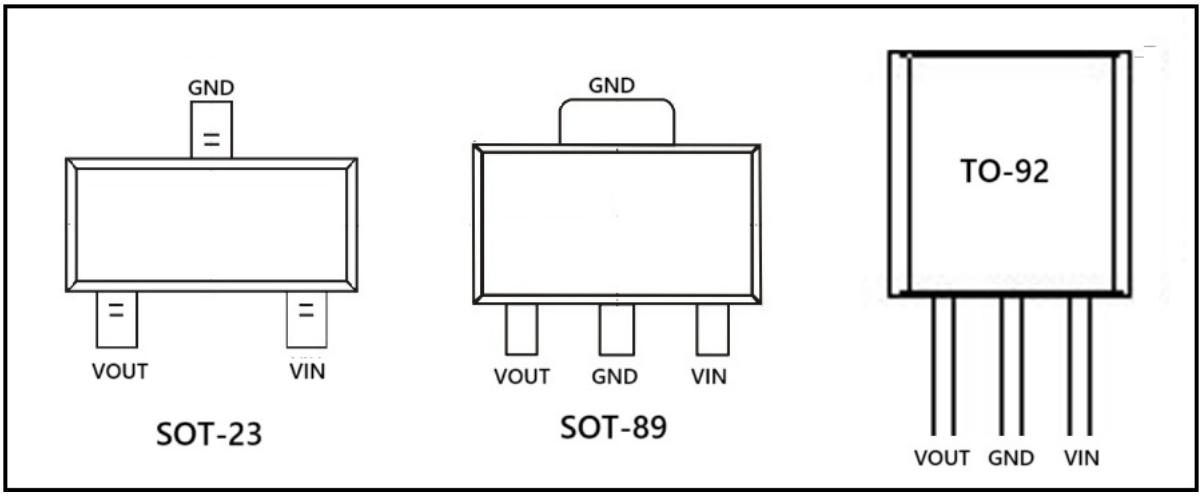


Equivalent Circuit or Test Circuit

DESCRIPTION

This series of fixed-voltage monolithic integrated circuit voltage regulators is designed for a wide range of applications. These applications include on-cardregulation for elimination of noise and distribution problems associated with single-point regulation. In addition, they can be used with power-pass elements to make high-current voltage regulators. Each of these regulators can deliver up to 150mA of output current. The internal limiting and termal shutdown features of these regulators make them essentially immune to overload. When used as a replacement for a Zener diode-resistor combination , an effective improvement in output impedance can be obtained together with lower-bias current.

AVAILABLE PACKAGES AND PIN CONFIGURATION



THERMAL INFORMATION

Thermal Metric	Symbol	TO-92	SOT-89	SOT-23	Unit
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	160	200	330	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	40	50	84	°C/W

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Input voltage	V_I	30	V
Output current	I_O	150	mA
Power Dissipation	P_D	Internally Limited (*)	W
Storage Temperature	T_{STG}	-65~ 150	°C
OperatingTemperature (Operating free-air, case, or virtual junction temperature range)	T_{OP}	-40~+125	°C

(*) Refer to Thermal Information for details.

RECOMMENDED OPERATING CONDITION

Parameter	Min	Max	Unit
Input voltage	10.5	23	V
Output current		100	mA
OperatingTemperature	-25	125	℃

ELECTRICAL CHARACTERISTICS

78L08 (VI=14V, IO=40mA, CI = 0.33 μF, CO = 0.1 μF, unless otherwise noted)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Uint
Output voltage	V_O		25℃	7.7	8	8.3	V
		I_O=1mA to 40mA V_I=10.5V to 25V	0 to 125 ℃	7.6	8	8.4	
		I_O=1mA to 70mA		7.6	8	8.4	
Input regulation	△Vo	V_I=10.5V to 23V	25℃			175	mV
		V_I=11V to 23V				125	
Ripple rejection	RR	V_I=13Vto23V,f=120Hz	25℃	37			dB
Output regulation	△Vo	I_O=1mA to 100mA	25℃			80	mV
		I_O=1mA to 40mA				40	
Output noise voltage	V_N	f=10Hz-100Hz	25℃		54		μV
Dropout voltage	V_D		25℃		1.7		V
Bias current	I_Q		25℃			6	mA
			125℃			5.5	
Bias current change	$\triangle I_Q$	V_I=11V to 23V	0 to 125 ℃			1.5	
		I_O=1mA to 40mA				0.1	

*Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible.Thermal effects must be taken into account separately.

**This specification applies only for dc power dissipation permitted by absolute maximum ratings.