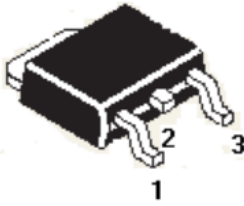


## SURFACE MOUNT POSITIVE VOLTAGE REGULATOR



1. Input
2. Ground
3. Output

**CL7809DT**  
**TO-252 (DPAK)**  
**Plastic Package**

### FEATURES

Maximum output current ( $I_{OM}$ ) = 1.5A

Output Voltage ( $V_o$ ) = 9V

Continuous total dissipation ( $P_D$ ) = 1.25W ( $T_a=25^\circ\text{C}$ )

**ABSOLUTE MAXIMUM RATINGS** (Operating temperature range applies unless otherwise specified)

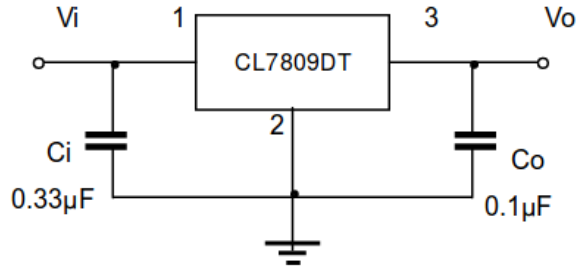
Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_{OPR}$	-25 to 125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to 150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE** ( $V_i=16\text{V}$ ,  $I_o=500\text{mA}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_o$	25 $^\circ\text{C}$	8.65	9	9.35	V
		11.5V $\leq V_i \leq 24\text{V}$ , $I_o = 5\text{mA}-1\text{A}$ , $P \leq 10\text{W}$ -25 to 125 $^\circ\text{C}$	8.55	9	9.45	V
Load Regulation	$\Delta V_o$	$I_o = 5\text{mA}-1.5\text{A}$ 25 $^\circ\text{C}$		12	180	mV
		$I_o = 250\text{mA}-750\text{mA}$ 25 $^\circ\text{C}$		4	90	mV
Line Regulation	$\Delta V_o$	11.5V $\leq V_i \leq 27\text{V}$ 25 $^\circ\text{C}$		7	180	mV
		13V $\leq V_i \leq 19\text{V}$ 25 $^\circ\text{C}$		2	90	mV
Quiescent Current	$I_q$	25 $^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	$\Delta I_q$	11.5V $\leq V_i \leq 27\text{V}$ -25 to 125 $^\circ\text{C}$			1	mA
		5mA $\leq I_o \leq 1\text{A}$ -25 to 125 $^\circ\text{C}$			0.5	mA
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$ -25 to 125 $^\circ\text{C}$		-1		mV/ $^\circ\text{C}$
Output Noise Voltage	$V_N$	10Hz $\leq f \leq 100\text{kHz}$ 25 $^\circ\text{C}$		60		$\mu\text{V}/V_o$
Ripple Rejection	RR	12V $\leq V_i \leq 22\text{V}$ , $f=120\text{Hz}$ -25 to 125 $^\circ\text{C}$	55	70		dB
Dropout Voltage	$V_d$	$I_o = 1\text{A}$ 25 $^\circ\text{C}$		2		V
Output Resistance	$R_o$	$f=1\text{kHz}$ 25 $^\circ\text{C}$		18		m $\Omega$
Short Circuit Current	$I_{sc}$	25 $^\circ\text{C}$		400		mA
Peak Current	$I_{pk}$	25 $^\circ\text{C}$		2.2		A

Pulse Test

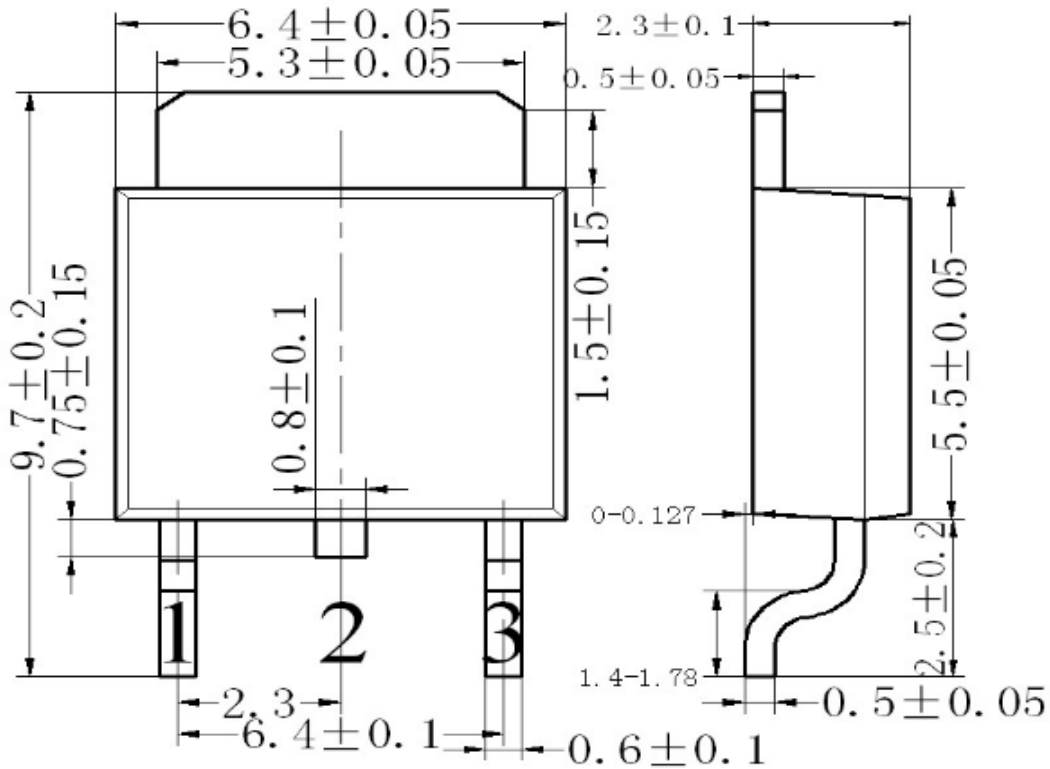
### Typical Application



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

### TO-252 (DPAK) Package Outline and Dimensions

Unit:mm



1. Input
2. Ground
3. Output



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## Customer Notes:

### Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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