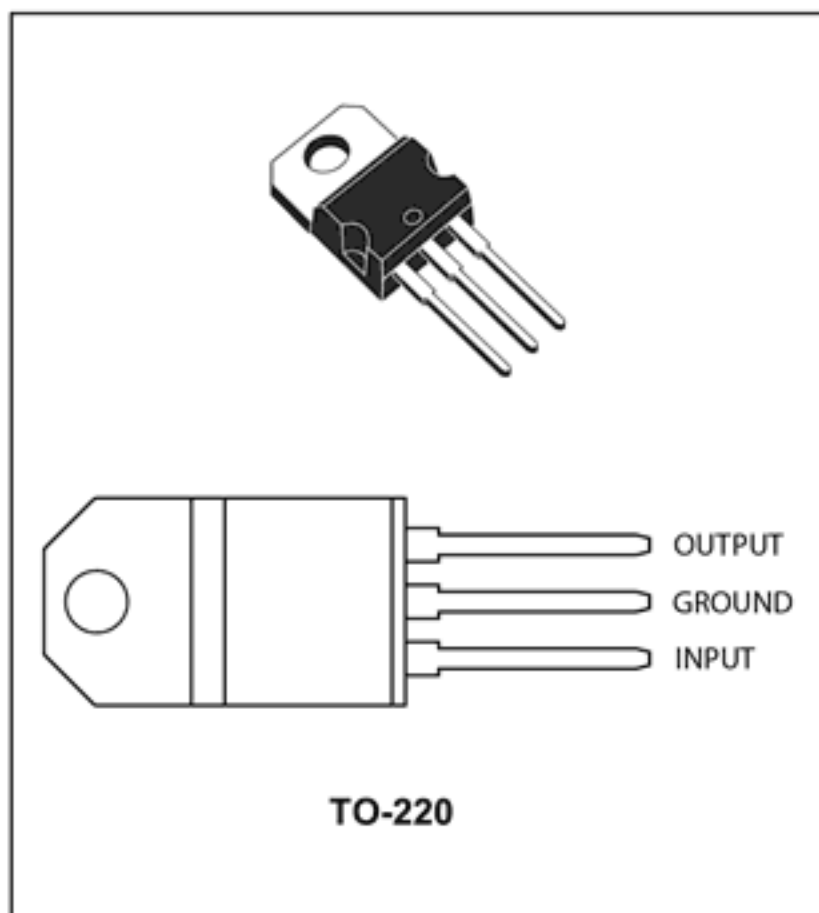


- OUTPUT CURRENT TO 2A
- OUTPUT VOLTAGES OF 5; 7.5; 9; 10; 12; 15; 18; 24V
- THERMAL OVERLOAD PROTECTION
- SHORT CIRCUIT PROTECTION
- OUTPUT TRANSITION SOA PROTECTION

DESCRIPTION

The L78S00 series of three-terminal positive regulators is available in TO-220 and TO-3 packages and with several fixed output voltages, making it useful in a wide range of applications. These regulators can provide local on-card regulation, eliminating the distribution problems associated with single point regulation. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 2A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter ²		Value	Unit
V_I	DC Input Voltage	for $V_O = 5$ to 18 V	35	V
		for $V_O = 24$ V	40	
I_O	Output Current		Internally Limited	
P_{tot}	Power Dissipation		Internally Limited	
T_{stg}	Storage Temperature Range		-65 to 150	°C
T_{op}	Operating Junction Temperature Range	for L78S00	-55 to 150	°C
		for L78S00C	0 to 150	

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these condition is not implied.

ELECTRICAL CHARACTERISTICS OF L78S05 (refer to the test circuits, $T_J = 25^\circ\text{C}$, $V_I = 10$ V, $I_O = 500$ mA, unless otherwise specified).

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_O	Output Voltage		4.8	5	5.2	V
V_O	Output Voltage	$I_O = 1$ A $V_I = 7$ V	4.75	5	5.25	V
ΔV_O	Line Regulation	$V_I = 7$ to 25 V			100	mV
		$V_I = 8$ to 25 V			50	
ΔV_O	Load Regulation	$I_O = 20$ mA to 2 A			100	mV
I_d	Quiescent Current				8	mA
ΔI_d	Quiescent Current Change	$I_O = 20$ mA to 1 A			0.5	mA
		$I_O = 20$ mA $V_I = 7$ to 25 V			1.3	
$\Delta V_O/\Delta T$	Output Voltage Drift	$I_O = 5$ mA $T_J = -55$ to 150°C		-1.1		mV/°C
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		40		μV
SVR	Supply Voltage Rejection	f = 120Hz	60			dB
V_I	Dropout Voltage	$I_O \leq 1$ A	8			V
R_O	Output Resistance	f = 1 KHz		17		mΩ
I_{sc}	Short Circuit Current	$V_I = 27$ V		500		mA
I_{scp}	Short Circuit Peak Current			3		A