

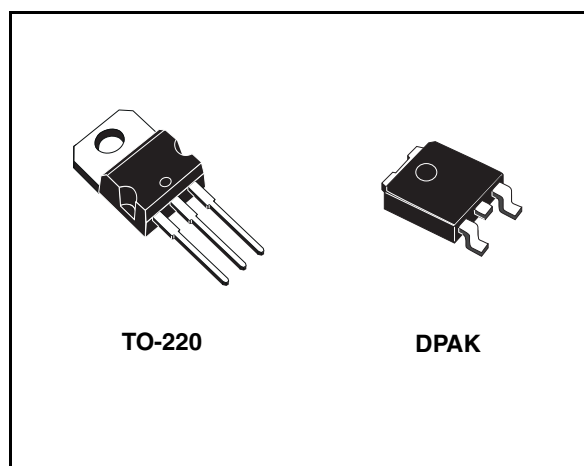
## Very low drop 1A regulator

### Feature summary

- Low dropout voltage (450mV typ. at 1A)
- Very low quiescent current
- Thermal shutdown
- Short circuit protection
- Reverse polarity protection

### Description

The L4941 is a three terminal 5V positive regulators available in TO-220 and DPAK packages, making it useful in a wide range of industrial and consumer applications. Thanks to its very low input/output voltage drop, these devices are particularly suitable for battery powered equipments, reducing consumption and



prolonging battery life. It employs internal current limiting, antisaturation circuit, thermal shut-down and safe area protection.

### Order code

Part number	Package
L4941BV	TO-220
L4941BDT-TR	DPAK

### 3 Maximum ratings

**Table 1. Absolute maximum ratings**

Symbol	Parameter	Value	Unit
$V_I$	Forward input voltage	30	V
$V_{IR}$	Reverse input voltage ( $R_O=100\Omega$ )	-15	V
$I_O$	Output current	Internally Limited	mA
$P_D$	Power dissipation	Internally Limited	mW
$T_{stg}$	Storage temperature range	-40 to +150	°C
$T_{op}$	Operating junction temperature range	-40 to +150	°C

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

**Table 2. Thermal Data**

Symbol	Parameter	TO-220	DPAK	Unit
$R_{thJC}$	Thermal resistance junction-case	3	8	°C/W
$R_{thJA}$	Thermal resistance junction-ambient	50	100	°C/W

## 5 Electrical characteristics

**Table 3. Electrical characteristics** (refer to test circuit,  $V_I=7V$ ,  $C_1 = 0.1\mu F$ ,  $C_O = 22\mu F$ ,  $T_J = 25^\circ C$ , unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$I_O = 5mA$ to 1A, $V_I = 6$ to 14V	4.8	5	5.2	V
$V_I$	Input voltage	$I_O = 5$ mA			16	V
$\Delta V_O$	Line regulation	$V_I = 6$ to 16V, $I_O = 5$ mA		5	20	mV
$\Delta V_O$	Load regulation	$I_O = 5mA$ to 1A		8	20	mV
		$I_O = 0.5A$ to 1A		5	15	mV
$I_q$	Quiescent current	$I_O = 5$ mA, $V_I = 6V$		4	8	mA
		$I_O = 1A$ , $V_I = 6V$		20	40	mA
$\Delta I_q$	Quiescent current change	$I_O = 5$ mA, $V_I = 6$ to 14V			3	mA
		$I_O = 1A$ , $V_I = 6$ to 14V			-10	mA
$V_d$	Dropout voltage	$I_O = 0.5A$		250	450	mV
		$I_O = 1A$		450	700	mV
$\Delta V_O/\Delta T$	Output voltage drift			0.6		mV/°C
SVR	Supply voltage rejection	$f = 120Hz$ , $I_O = 1A$	58	68		dB
$I_{sc}$	Short circuit current	$V_I = 14V$		1.6	2.0	A
		$V_I = 6V$		1.8	2.2	
$Z_O$	Output impedance	$f = 1KHz$ , $I_O = 0.5A$		30		mΩ
$e_N$	Output noise voltage	$B = 100Hz$ to 100KHz		30		$\mu V/V_O$

**TO-220 MECHANICAL DATA**

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151

