

Positive voltage regulators

Features

- Output current to 1.5 A
- Output voltages of 5; 5.2; 6; 8; 8.5; 9; 10; 12; 15; 18; 20; 24 V
- Thermal overload protection
- Short circuit protection
- Output transition SOA protection

Description

The L78xx series of three-terminal positive regulators is available in TO-220, TO-220FP, TO-3 and D²PAK packages and 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 1 A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltage and currents.

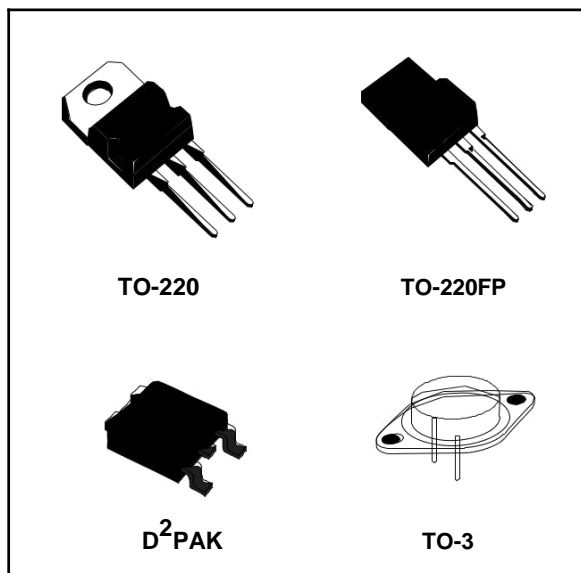
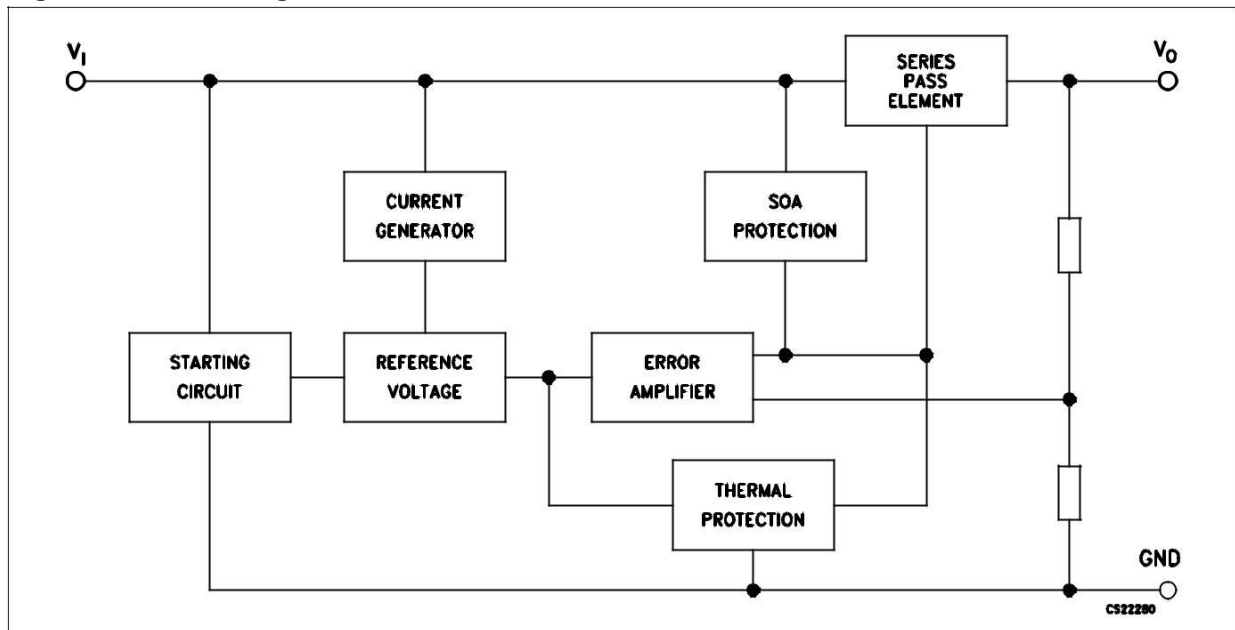


Table 1. Device summary

Order codes	
L7805	L7810C
L7805C	L7812C
L7852C	L7815C
L7806C	L7818C
L7808C	L7820C
L7885C	L7824C
L7809C	

1 Diagram

Figure 1. Block diagram



2 Pin configuration

Figure 2. Pin connections (top view)

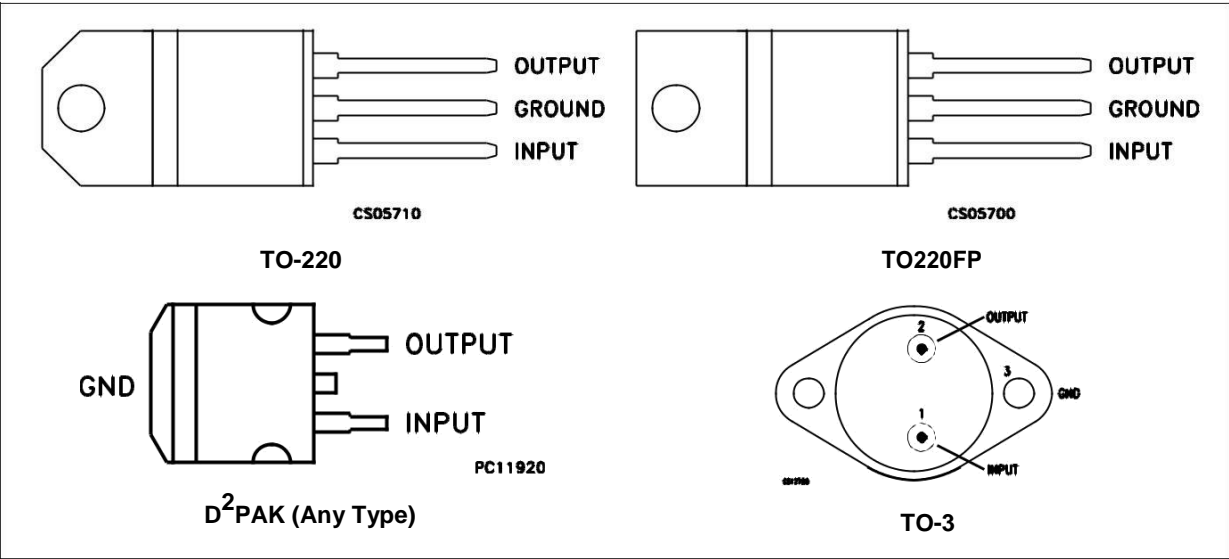


Figure 3. Schematic diagram

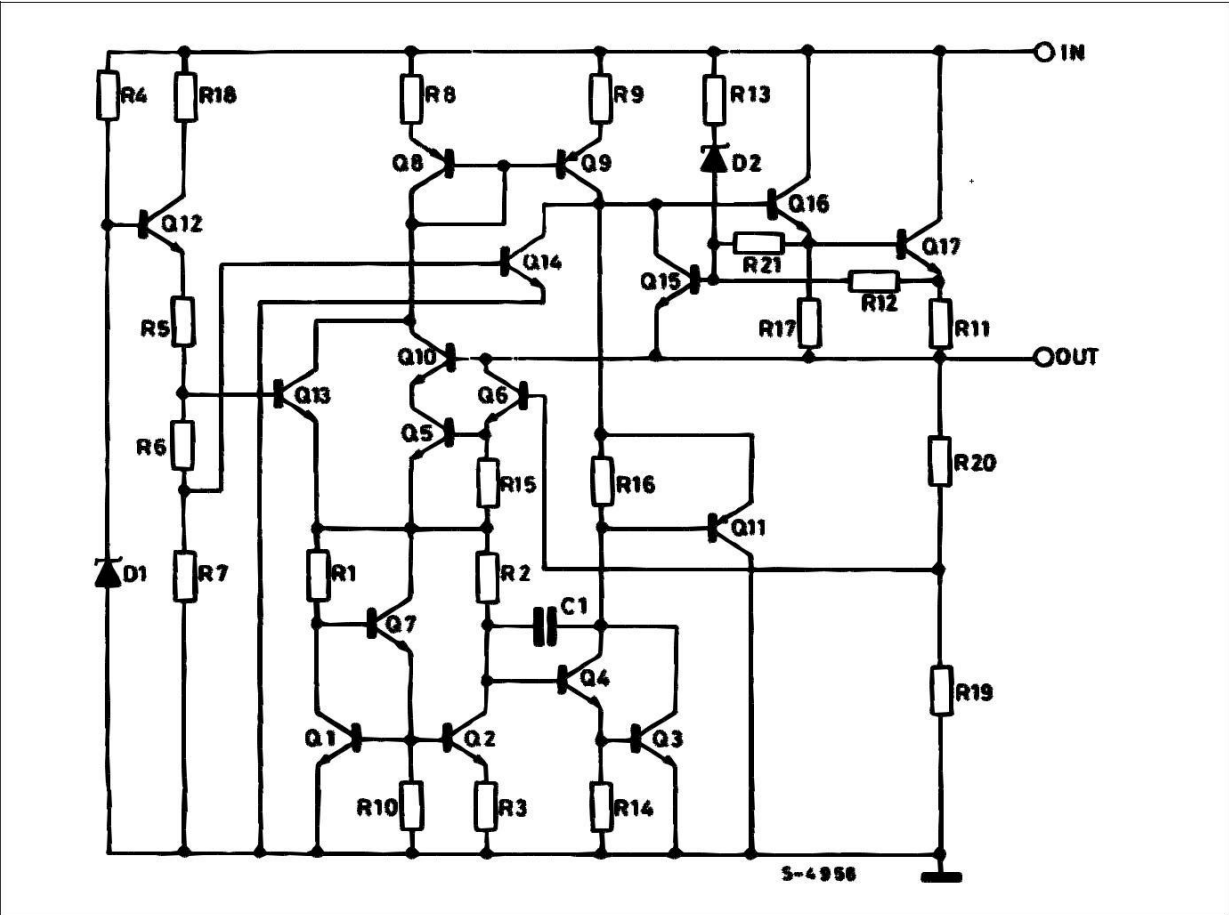
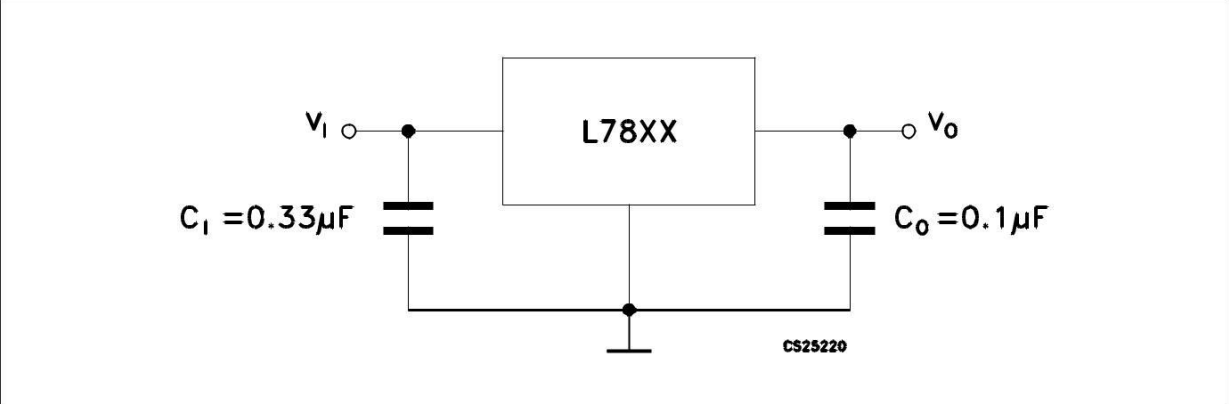


Figure 4. Application circuits



4 Test circuits

Figure 5. DC Parameter

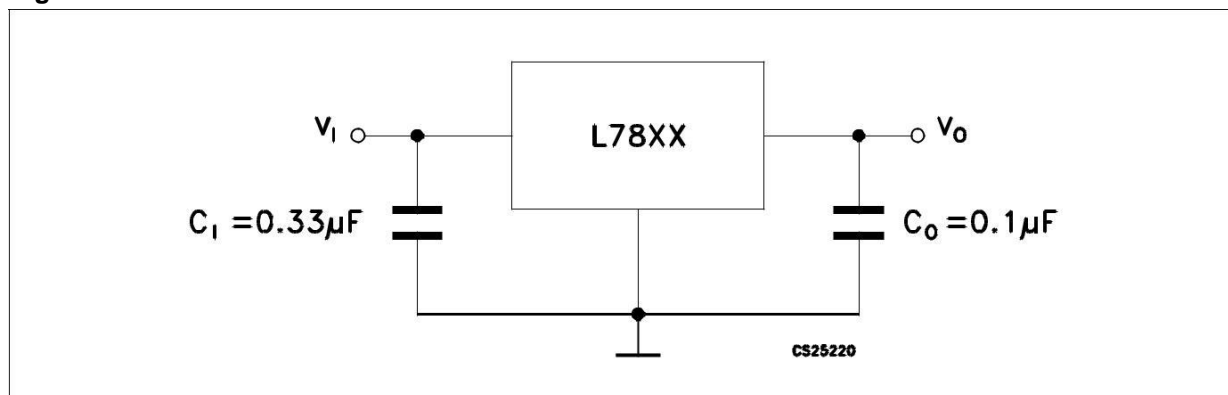
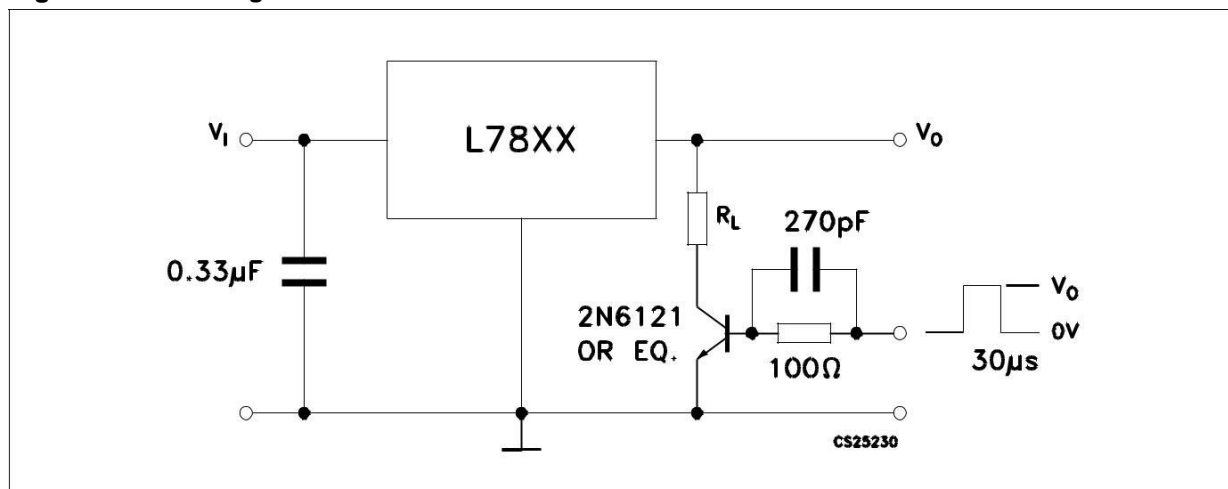
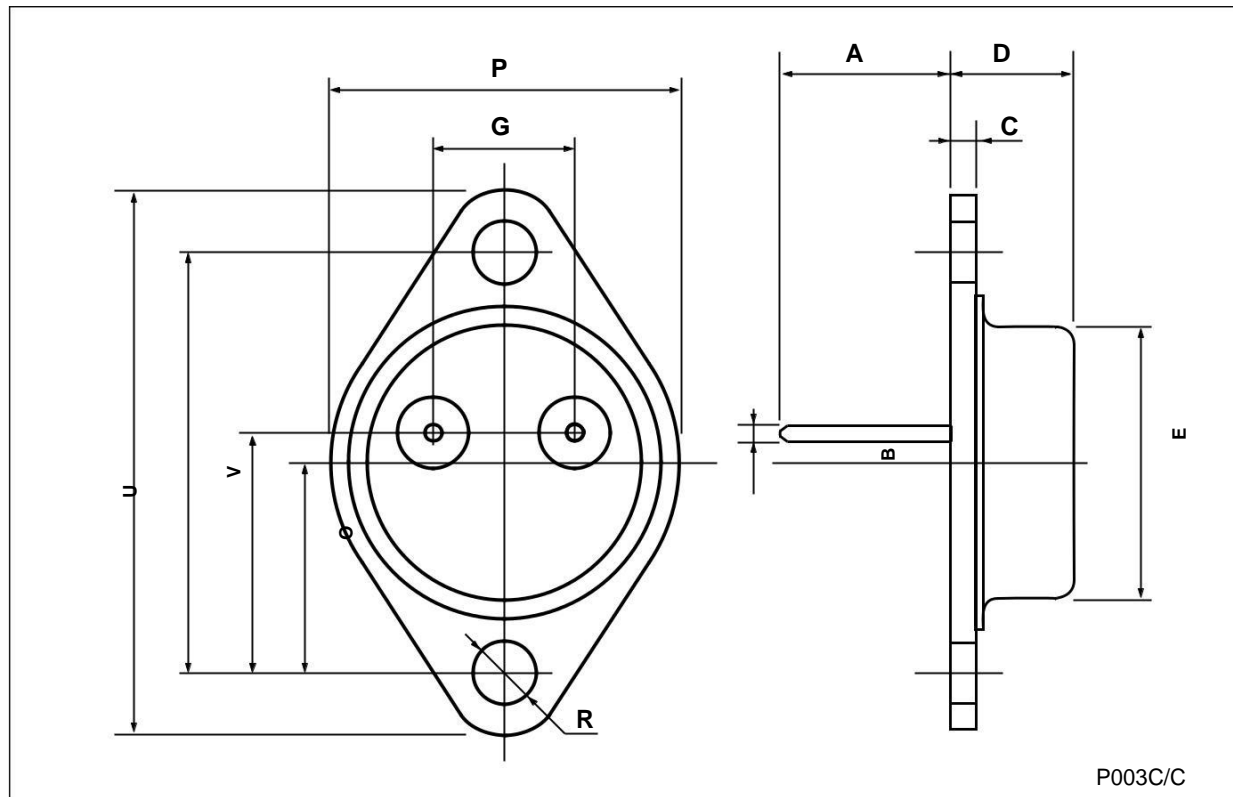


Figure 6. Load regulation



TO-3 mechanical data

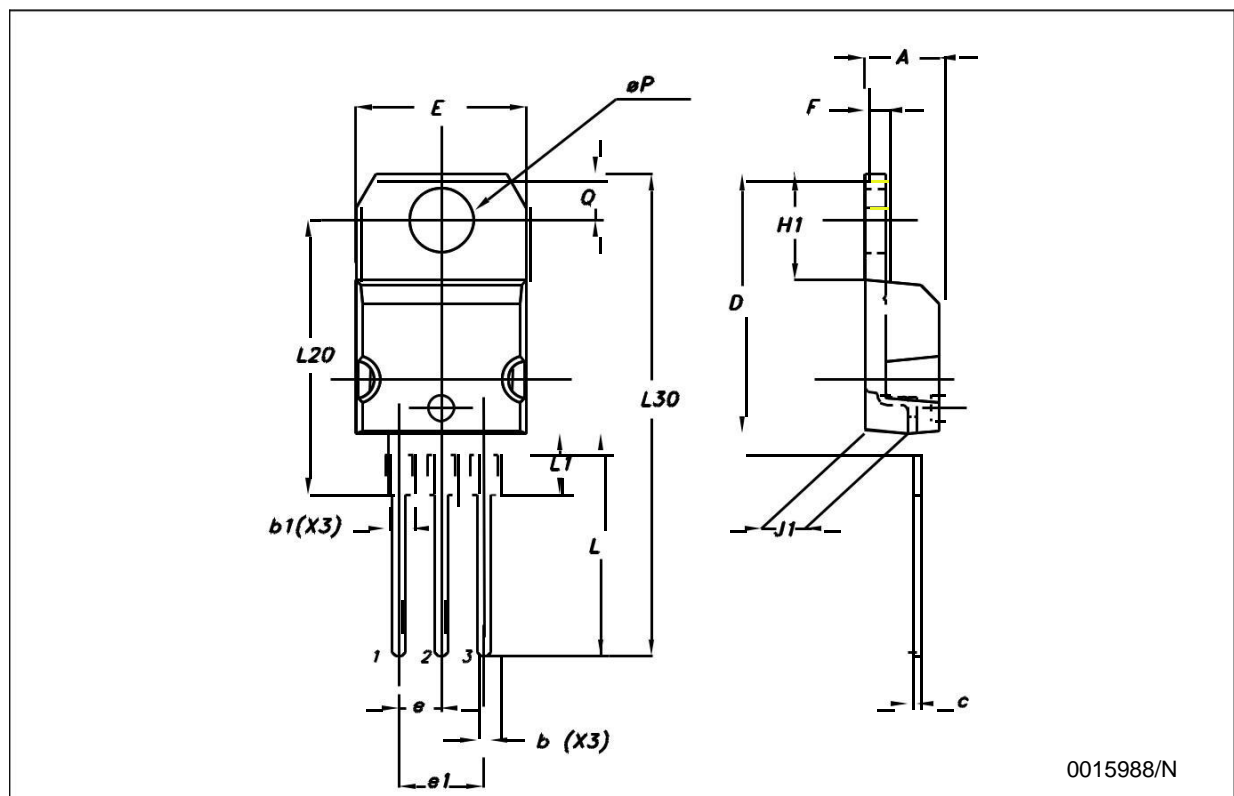
Dim.	mm.			inch.		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		11.85			0.466	
B	0.96	1.05	1.10	0.037	0.041	0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.5			1.555
V		30.10			1.185	



P003C/C

TO-220 (A type) mechanical data

Dim.	mm.			inch.		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
b	0.61		0.88	0.024		0.035
b1	1.15		1.70	0.045		0.067
c	0.49		0.70	0.019		0.028
D	15.25		15.75	0.600		0.620
E	10.0		10.40	0.394		0.409
e	2.4		2.7	0.094		0.106
e1	4.95		5.15	0.195		0.203
F	1.23		1.32	0.048		0.052
H1	6.2		6.6	0.244		0.260
J1	2.40		2.72	0.094		0.107
L	13.0		14.0	0.512		0.551
L1	3.5		3.93	0.138		0.155
L20		16.4			0.646	
L30		28.9			1.138	
ϕP	3.75		3.85	0.148		0.152
Q	2.65		2.95	0.104		0.116



TO-220FP mechanical data

Dim.	mm.			inch.		
	Min.	Typ	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	2.5		2.7	0.098		0.106
D	2.5		2.75	0.098		0.108
E	0.45		0.70	0.017		0.027
F	0.75		1	0.030		0.039
F1	1.15		1.50	0.045		0.059
F2	1.15		1.50	0.045		0.059
G	4.95		5.2	0.194		0.204
G1	2.4		2.7	0.094		0.106
H	10.0		10.40	0.393		0.409
L2		16			0.630	
L3	28.6		30.6	1.126		1.204
L4	9.8		10.6	0.385		0.417
L5	2.9		3.6	0.114		0.142
L6	15.9		16.4	0.626		0.645
L7	9		9.3	0.354		0.366
DIA.	3		3.2	0.118		0.126

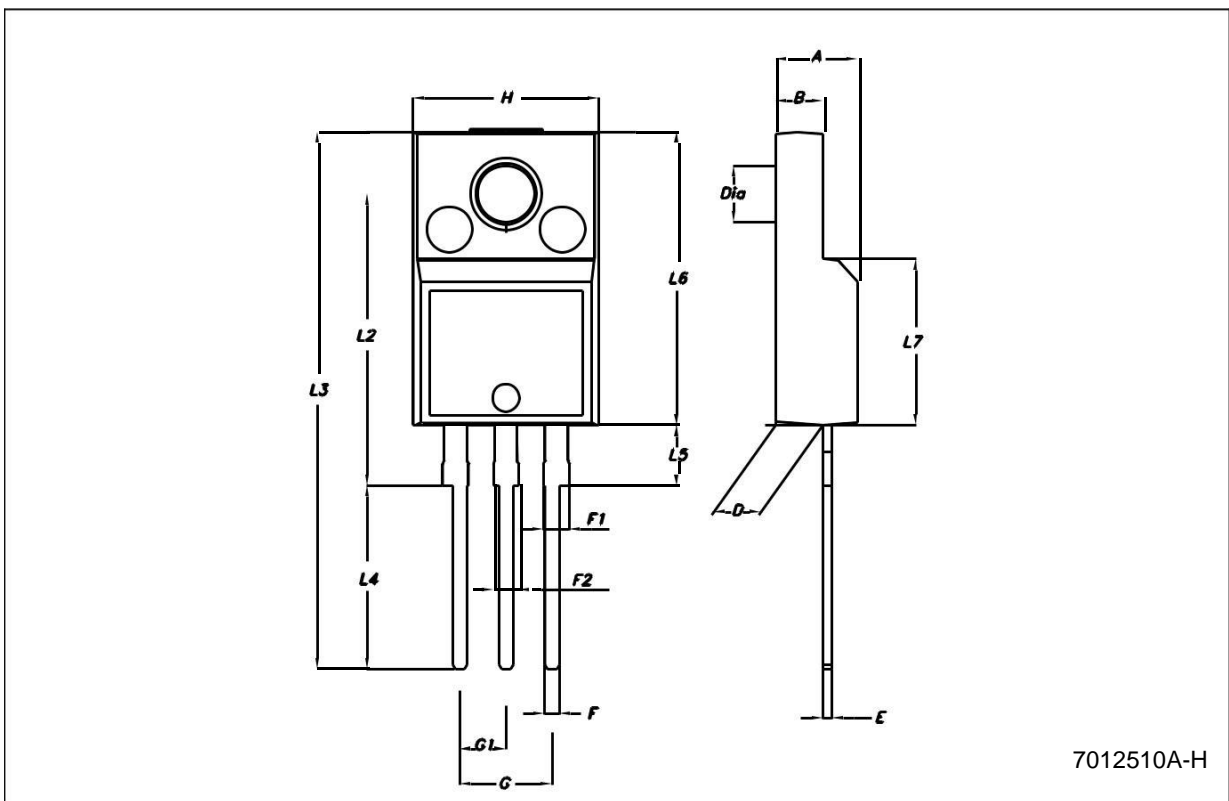


Figure 38. Drawing dimension D²PAK (type STD-ST)

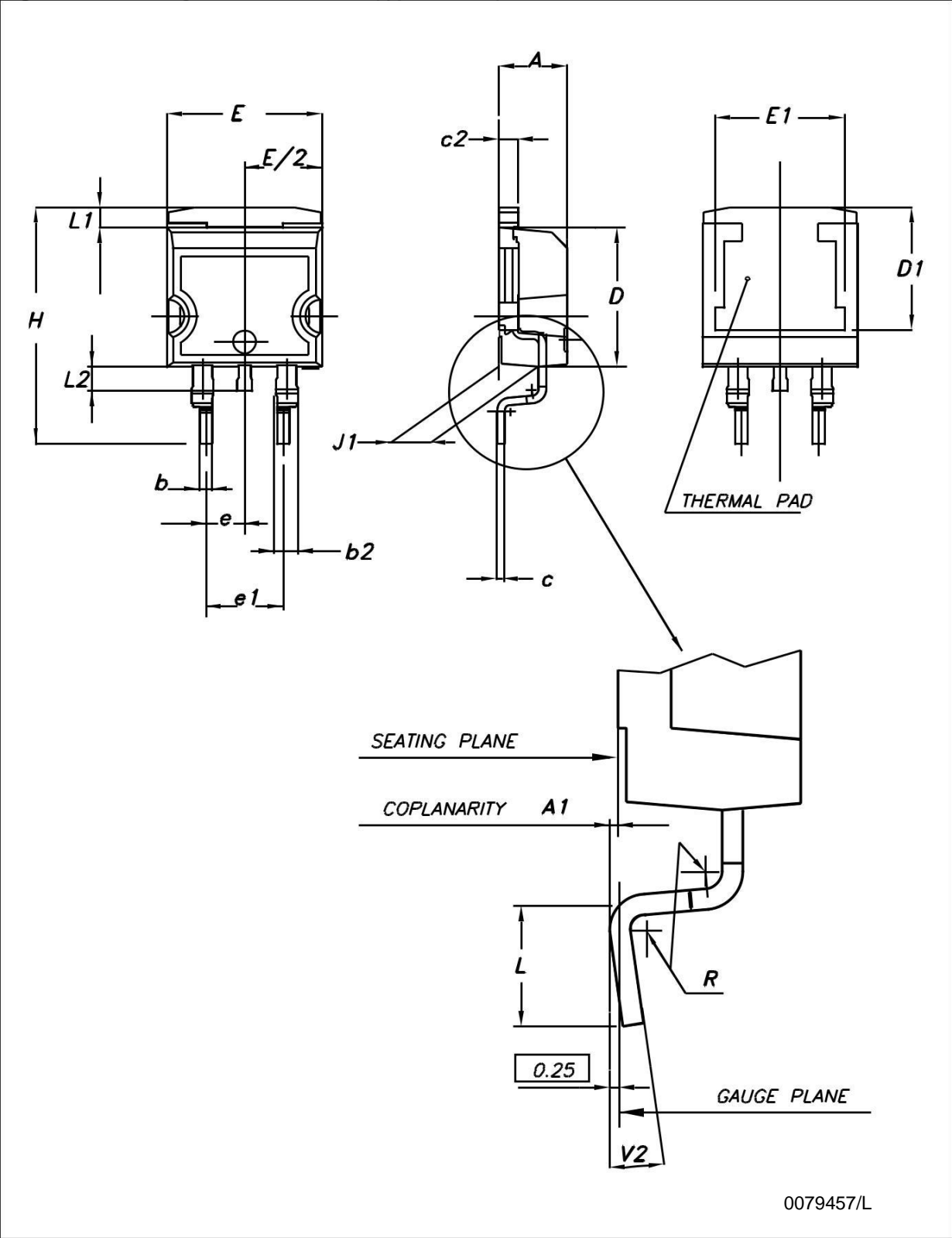


Figure 39. Drawing dimension D²PAK (type WOOSEOK-SUBCON.)

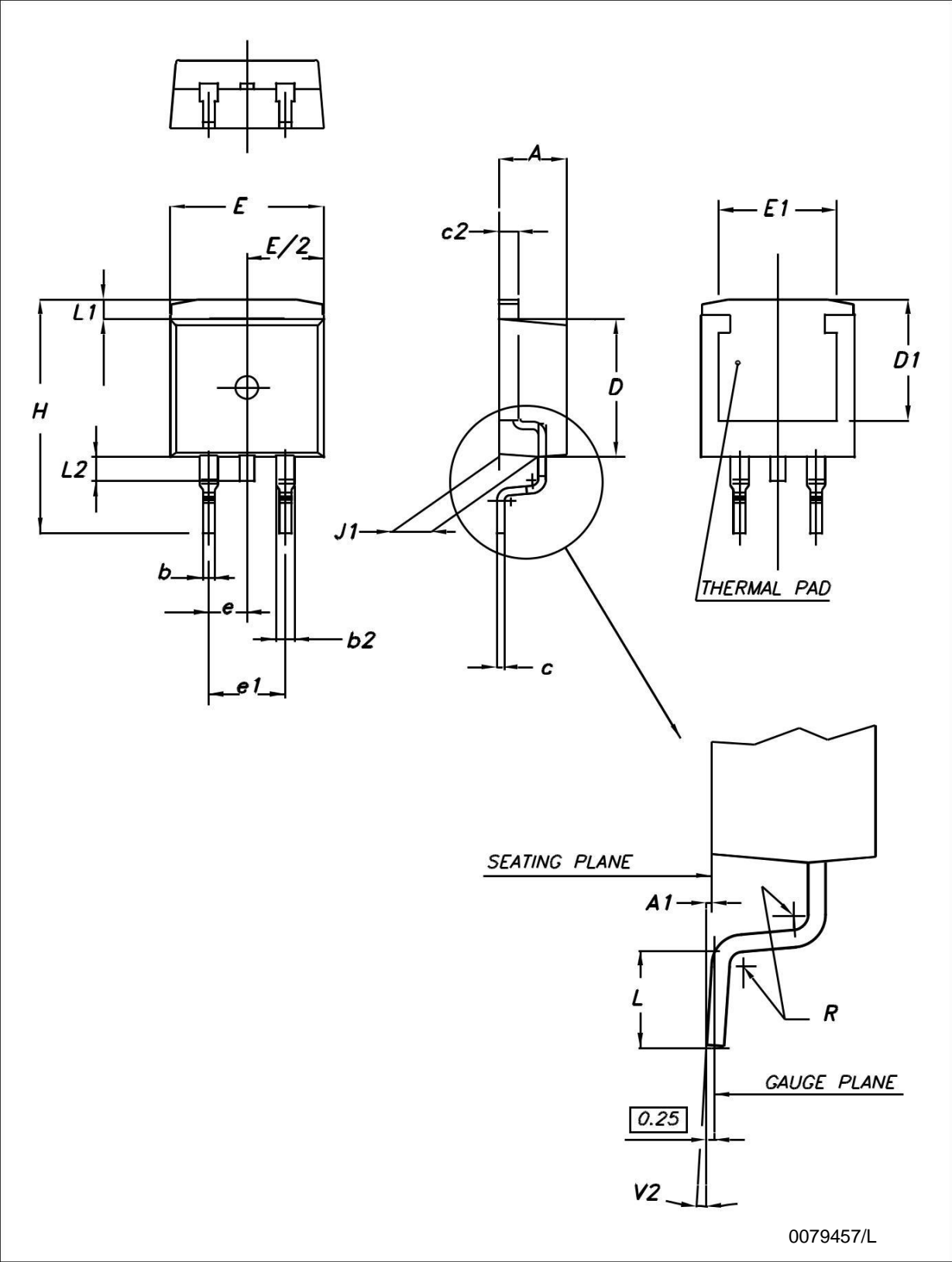


Figure 40. D²PAK footprint recommended data

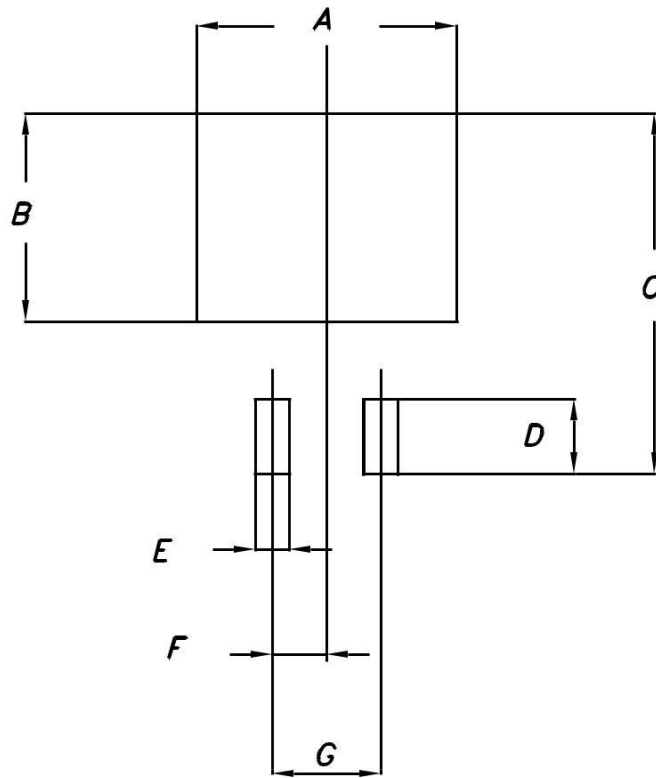


Table 25. Footprint data

VALUES		
	mm.	inch.
A	12.20	0.480
B	9.75	0.384
C	16.90	0.665
D	3.50	0.138
E	1.60	0.063
F	2.54	0.100
G	5.08	0.200

Tape & reel D²PAK-P²PAK-D²PAK/A-P²PAK/A mechanical data

Dim.	mm.			inch.		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			180			7.086
C	12.8	13.0	13.2	0.504	0.512	0.519
D	20.2			0.795		
N	60			2.362		
T			14.4			0.567
Ao	10.50	10.6	10.70	0.413	0.417	0.421
Bo	15.70	15.80	15.90	0.618	0.622	0.626
Ko	4.80	4.90	5.00	0.189	0.193	0.197
Po	3.9	4.0	4.1	0.153	0.157	0.161
P	11.9	12.0	12.1	0.468	0.472	0.476

