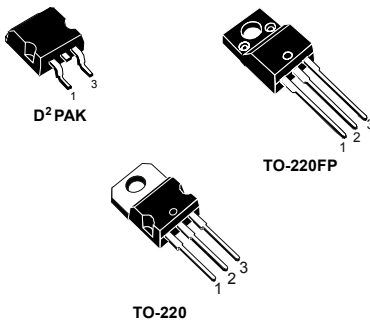


## Negative voltage regulators



### Features

- Output current up to 1.5 A
- Output voltages: -5, -8, -12, and -5 V
- Thermal overload protection
- Short-circuit protection
- Output SOA protection
- Output tolerance 2% (AC version) or 4% (C version) at 25 °C

### Description

The L79 series of three-terminal negative regulators is available in TO-220, TO-220FP and D<sup>2</sup>PAK 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; furthermore, having the same voltage option as the L78 positive standard series, they are particularly suited for split power supplies. If adequate heat sinking is provided, they can deliver over 1.5 A output current.

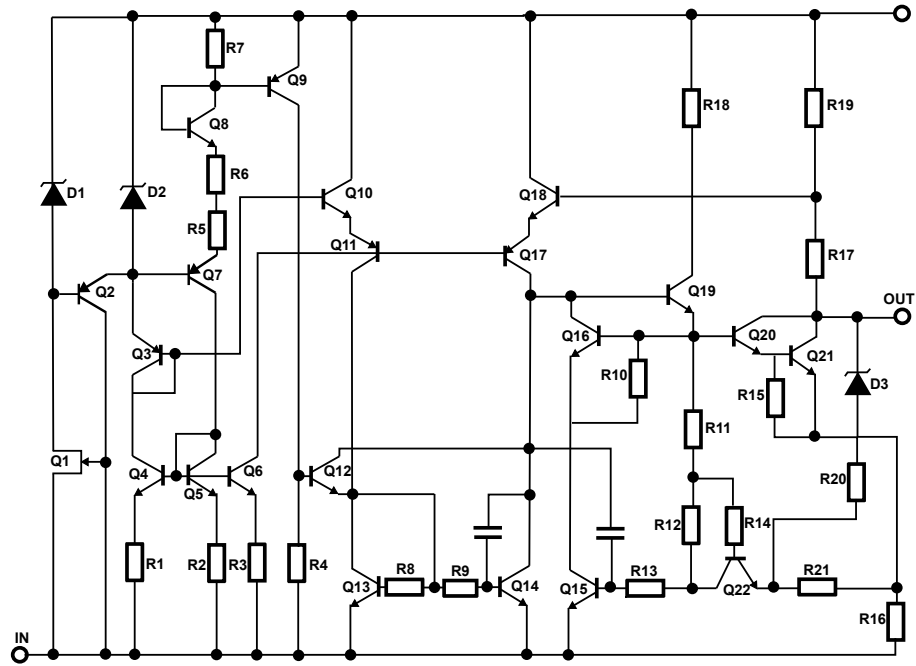
Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.

Maturity status link

L79

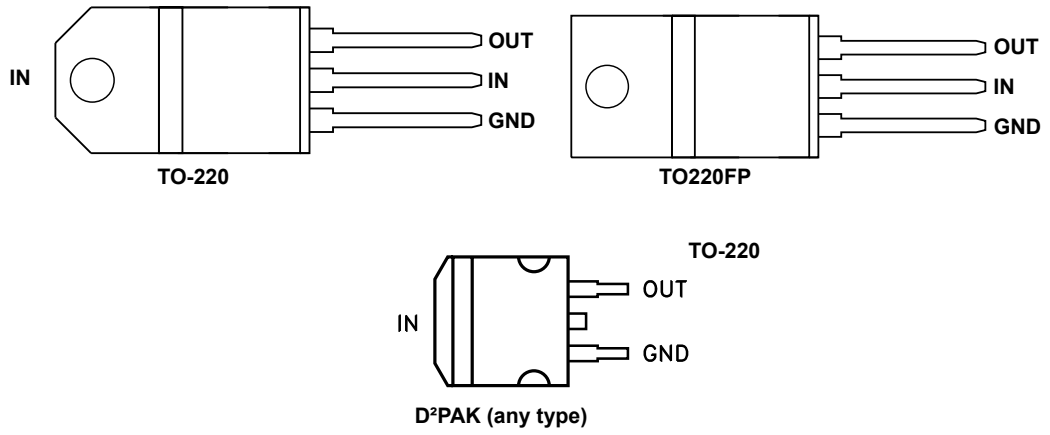
1 Diagram

Figure 1. Schematic diagram



## 2 Pin configuration

Figure 2. Pin connections (top view)



### 3 Maximum ratings

**Table 1. Absolute maximum ratings**

Symbol	Parameter	Value	Unit
$V_I$	DC input voltage	-35	V
$I_O$	Output current	Internally limited	
$P_D$	Power dissipation	Internally limited	
$T_{STG}$	Storage temperature range	-65 to 150	°C
$T_{OP}$	Operating junction temperature range	for L79xxC	0 to 150
		for L79xxAC	0 to 125

Note:

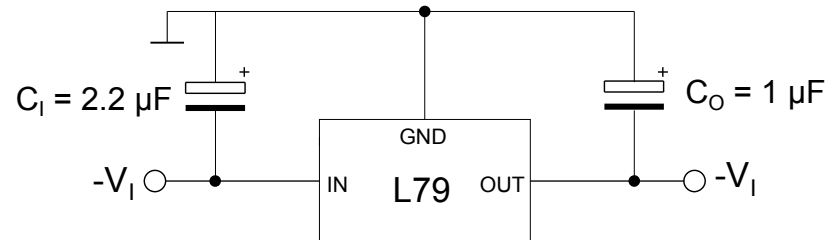
*Note: Absolute maximum ratings are those values beyond which damage to the device may occur. Functional operation under these condition is not implied.*

**Table 2. Thermal data**

Symbol	Parameter	D <sup>2</sup> PAK	TO-220	TO-220FP	Unit
$R_{thJC}$	Thermal resistance junction-case	3	5	5	°C/W
$R_{thJA}$	Thermal resistance junction-ambient	62.5	50	60	°C/W

## 4 Test circuit

Figure 3. Test circuit



## 5 Electrical characteristics

Refer to the test circuits,  $T_J = 0$  to  $125$  °C,  $V_I = -10$  V,  $I_O = 500$  mA,  $C_I = 2.2$   $\mu$ F,  $C_O = 1$   $\mu$ F unless otherwise specified.

**Table 3. Electrical characteristics of L7905AC**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$T_J = 25$ °C	-4.9	-5	-5.1	V
$V_O$	Output voltage	$I_O = -5$ mA to $-1$ A, $P_O \leq 15$ W $V_I = -8$ to $-20$ V	-4.8	-5	-5.2	V
$\Delta V_O$ <sup>(1)</sup>	Line regulation	$V_I = -7$ to $-25$ V, $T_J = 25$ °C			100	mV
		$V_I = -8$ to $-12$ V, $T_J = 25$ °C			50	
$\Delta V_O$ <sup>(1)</sup>	Load regulation	$I_O = 5$ mA to $1.5$ A, $T_J = 25$ °C			100	mV
		$I_O = 250$ to $750$ mA, $T_J = 25$ °C			50	
$I_d$	Quiescent current	$T_J = 25$ °C			3	mA
$\Delta I_d$	Quiescent current change	$I_O = 5$ mA to $1$ A			0.5	mA
		$V_I = -8$ to $-25$ V			1.3	
$\Delta V_O/\Delta V_T$	Output voltage drift	$I_O = 5$ mA		-0.4		mV/°C
eN	Output noise voltage	$B = 10$ Hz to $100$ kHz, $T_J = 25$ °C		100		$\mu$ V
SVR	Supply voltage rejection	$\Delta V_I = 10$ V, $f = 120$ Hz	54	60		dB
$V_d$	Dropout voltage	$I_O = 1$ A, $T_J = 25$ °C, $\Delta V_O = 100$ mV		1.4		V
$I_{sc}$	Short circuit current			1.8		A
$I_{scp}$	Short circuit peak current	$T_J = 25$ °C		1.8		A

1. Load and line regulation are specified at constant junction temperature. Changes in  $V_O$  due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

Refer to the test circuits,  $T_J = 0$  to  $125$  °C,  $V_I = -10$  V,  $I_O = 500$  mA,  $C_I = 2.2$   $\mu$ F,  $C_O = 1$   $\mu$ F unless otherwise specified.

**Table 4. Electrical characteristics of L7905C**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$T_J = 25$ °C	-4.8	-5	-5.2	V
$V_O$	Output voltage	$I_O = -5$ mA to $-1$ A, $P_O \leq 15$ W $V_I = -8$ to $-20$ V	-4.75	-5	-5.25	V
$\Delta V_O$ <sup>(1)</sup>	Line regulation	$V_I = -7$ to $-25$ V, $T_J = 25$ °C			100	mV
		$V_I = -8$ to $-12$ V, $T_J = 25$ °C			50	
$\Delta V_O$ <sup>(1)</sup>	Load regulation	$I_O = 5$ mA to $1.5$ A, $T_J = 25$ °C			100	mV
		$I_O = 250$ to $750$ mA, $T_J = 25$ °C			50	
$I_d$	Quiescent current	$T_J = 25$ °C			3	mA

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$\Delta I_d$	Quiescent current change	$I_O = 5 \text{ mA to } 1 \text{ A}$			0.5	mA
		$V_I = -8 \text{ to } -25 \text{ V}$			1.3	
$\Delta V_O/\Delta T$	Output voltage drift	$I_O = 5 \text{ mA}$		-0.4		mV/°C
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ kHz}, T_J = 25 \text{ °C}$		100		μV
SVR	Supply voltage rejection	$\Delta V_I = 10 \text{ V}, f = 120 \text{ Hz}$	54	60		dB
$V_d$	Dropout voltage	$I_O = 1 \text{ A}, T_J = 25 \text{ °C}, \Delta V_O = 100 \text{ mV}$		1.4		V
$I_{sc}$	Short circuit current			1.8		A

1. Load and line regulation are specified at constant junction temperature. Changes in  $V_O$  due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

Refer to the test circuits,  $T_J = 0 \text{ to } 125 \text{ °C}$ ,  $V_I = -14 \text{ V}$ ,  $I_O = 500 \text{ mA}$ ,  $C_I = 2.2 \text{ μF}$ ,  $C_O = 1 \text{ μF}$  unless otherwise specified.

**Table 5. Electrical characteristics of L7908C**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$T_J = 25 \text{ °C}$	-7.7	-8	-8.3	V
$V_O$	Output voltage	$I_O = -5 \text{ mA to } -1 \text{ A}, P_O \leq 15 \text{ W}$ $V_I = -11.5 \text{ to } -23 \text{ V}$	-7.6	-8	-8.4	V
$\Delta V_O^{(1)}$	Line regulation	$V_I = -10.5 \text{ to } -25 \text{ V}, T_J = 25 \text{ °C}$			160	mV
		$V_I = -11 \text{ to } -17 \text{ V}, T_J = 25 \text{ °C}$			80	
$\Delta V_O^{(1)}$	Load regulation	$I_O = 5 \text{ mA to } 1.5 \text{ A}, T_J = 25 \text{ °C}$			160	mV
		$I_O = 250 \text{ to } 750 \text{ mA}, T_J = 25 \text{ °C}$			80	
$I_d$	Quiescent current	$T_J = 25 \text{ °C}$			3	mA
$\Delta I_d$	Quiescent current change	$I_O = 5 \text{ mA to } 1 \text{ A}$			0.5	mA
		$V_I = -11.5 \text{ to } -25 \text{ V}$			1	
$\Delta V_O/\Delta T$	Output voltage drift	$I_O = 5 \text{ mA}$		-0.6		mV/°C
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ kHz}, T_J = 25 \text{ °C}$		175		μV
SVR	Supply voltage rejection	$\Delta V_I = 10 \text{ V}, f = 120 \text{ Hz}$	54	60		dB
$V_d$	Dropout voltage	$I_O = 1 \text{ A}, T_J = 25 \text{ °C}, \Delta V_O = 100 \text{ mV}$		1.1		V
$I_{sc}$	Short circuit current			1.5		A

1. Load and line regulation are specified at constant junction temperature. Changes in  $V_O$  due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

Refer to the test circuits,  $T_J = 0$  to  $125$  °C,  $V_I = -19$  V,  $I_O = 500$  mA,  $C_I = 2.2$   $\mu$ F,  $C_O = 1$   $\mu$ F unless otherwise specified.

**Table 6. Electrical characteristics of L7912AC**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$T_J = 25$ °C	-11.75	-12	-12.25	V
$V_O$	Output voltage	$I_O = -5$ mA to $-1$ A, $P_O \leq 15$ W $V_I = -15.5$ to $-27$ V	-11.5	-12	-12.5	V
$\Delta V_O$ <sup>(1)</sup>	Line regulation	$V_I = -14.5$ to $-30$ V, $T_J = 25$ °C			240	mV
		$V_I = -16$ to $-22$ V, $T_J = 25$ °C			120	
$\Delta V_O$ <sup>(1)</sup>	Load regulation	$I_O = 5$ mA to $1.5$ A, $T_J = 25$ °C			240	mV
		$I_O = 250$ to $750$ mA, $T_J = 25$ °C			120	
$I_d$	Quiescent current	$T_J = 25$ °C			3	mA
$\Delta I_d$	Quiescent current change	$I_O = 5$ mA to $1$ A			0.5	mA
		$V_I = -15$ to $-30$ V			1	
$\Delta V_O/\Delta T$	Output voltage drift	$I_O = 5$ mA		-0.8		mV/°C
eN	Output noise voltage	$B = 10$ Hz to $100$ kHz, $T_J = 25$ °C		200		$\mu$ V
SVR	Supply voltage rejection	$\Delta V_I = 10$ V, $f = 120$ Hz	54	60		dB
$V_d$	Dropout voltage	$I_O = 1$ A, $T_J = 25$ °C, $\Delta V_O = 100$ mV		1.1		V
$I_{sc}$	Short circuit current			1.0		A
$I_{scp}$	Short circuit peak current	$T_J = 25$ °C, $V_I = -10$ V		1.8		A

1. Load and line regulation are specified at constant junction temperature. Changes in  $V_O$  due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

Refer to the test circuits,  $T_J = 0$  to  $125$  °C,  $V_I = -19$  V,  $I_O = 500$  mA,  $C_I = 2.2$   $\mu$ F,  $C_O = 1$   $\mu$ F unless otherwise specified.

**Table 7. Electrical characteristics of L7912C**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$T_J = 25$ °C	-11.5	-12	-12.5	V
$V_O$	Output voltage	$I_O = -5$ mA to $-1$ A, $P_O \leq 15$ W $V_I = -15.5$ to $-27$ V	-11.4	-12	-12.6	V
$\Delta V_O$ <sup>(1)</sup>	Line regulation	$V_I = -14.5$ to $-30$ V, $T_J = 25$ °C			240	mV
		$V_I = -16$ to $-22$ V, $T_J = 25$ °C			120	
$\Delta V_O$ <sup>(1)</sup>	Load regulation	$I_O = 5$ mA to $1.5$ A, $T_J = 25$ °C			240	mV
		$I_O = 250$ to $750$ mA, $T_J = 25$ °C			120	
$I_d$	Quiescent current	$T_J = 25$ °C			3	mA



Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$\Delta I_d$	Quiescent current change	$I_O = 5 \text{ mA to } 1 \text{ A}$			0.5	mA
		$V_I = -15 \text{ to } -30 \text{ V}$			1	
$\Delta V_O/\Delta T$	Output voltage drift	$I_O = 5 \text{ mA}$		-0.8		mV/°C
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ kHz}, T_J = 25 \text{ °C}$		200		μV
SVR	Supply voltage rejection	$\Delta V_I = 10 \text{ V}, f = 120 \text{ Hz}$	54	60		dB
$V_d$	Dropout voltage	$I_O = 1 \text{ A}, T_J = 25 \text{ °C}, \Delta V_O = 100 \text{ mV}$		1.1		V
$I_{sc}$	Short circuit current			1.0		A

1. Load and line regulation are specified at constant junction temperature. Changes in  $V_O$  due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

Refer to the test circuits,  $T_J = 0 \text{ to } 125 \text{ °C}$ ,  $V_I = -23 \text{ V}$ ,  $I_O = 500 \text{ mA}$ ,  $C_I = 2.2 \text{ μF}$ ,  $C_O = 1 \text{ μF}$  unless otherwise specified.

**Table 8. Electrical characteristics of L7915AC**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$T_J = 25 \text{ °C}$	-14.7	-15	-15.3	V
$V_O$	Output voltage	$I_O = -5 \text{ mA to } -1 \text{ A}, P_O \leq 15 \text{ W}$ $V_I = -18.5 \text{ to } -30 \text{ V}$	-14.4	-15	-15.6	V
$\Delta V_O^{(1)}$	Line regulation	$V_I = -17.5 \text{ to } -30 \text{ V}, T_J = 25 \text{ °C}$			300	mV
		$V_I = -20 \text{ to } -26 \text{ V}, T_J = 25 \text{ °C}$			150	
$\Delta V_O^{(1)}$	Load regulation	$I_O = 5 \text{ mA to } 1.5 \text{ A}, T_J = 25 \text{ °C}$			300	mV
		$I_O = 250 \text{ to } 750 \text{ mA}, T_J = 25 \text{ °C}$			150	
$I_d$	Quiescent current	$T_J = 25 \text{ °C}$			3	mA
$\Delta I_d$	Quiescent current change	$I_O = 5 \text{ mA to } 1 \text{ A}$			0.5	mA
		$V_I = -18.5 \text{ to } -30 \text{ V}$			1	
$\Delta V_O/\Delta T$	Output voltage drift	$I_O = 5 \text{ mA}$		-0.9		mV/°C
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ kHz}, T_J = 25 \text{ °C}$		250		μV
SVR	Supply voltage rejection	$\Delta V_I = 10 \text{ V}, f = 120 \text{ Hz}$	54	60		dB
$V_d$	Dropout voltage	$I_O = 1 \text{ A}, T_J = 25 \text{ °C},$ $\Delta V_O = 100 \text{ mV}$		1.1		V
$I_{sc}$	Short circuit current			0.7		A
$I_{scp}$	Short circuit peak current	$T_J = 25 \text{ °C}, V_I = -10 \text{ V}$		1.8		A

1. Load and line regulation are specified at constant junction temperature. Changes in  $V_O$  due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

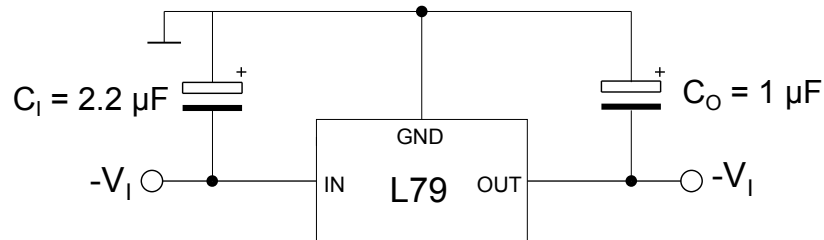
Refer to the test circuits,  $T_J = 0$  to  $125$  °C,  $V_I = -23$  V,  $I_O = 500$  mA,  $C_I = 2.2$   $\mu$ F,  $C_O = 1$   $\mu$ F unless otherwise specified.

**Table 9. Electrical characteristics of L7915C**

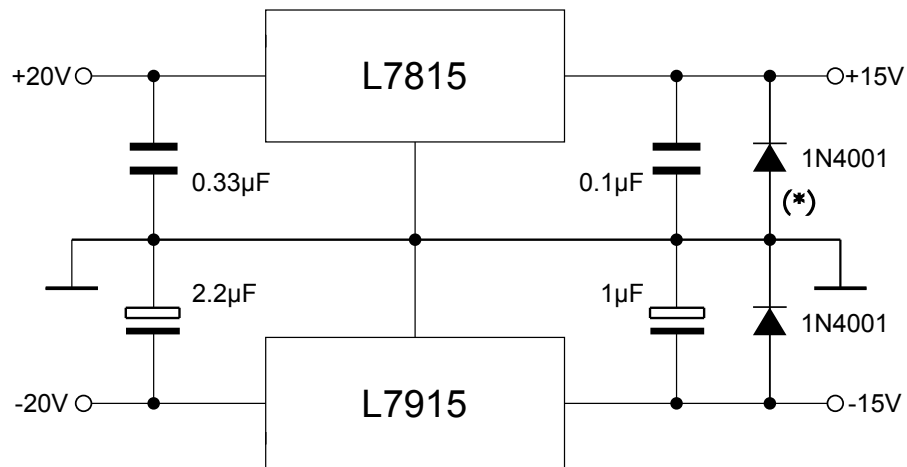
Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_O$	Output voltage	$T_J = 25$ °C	-14.4	-15	-15.6	V
$V_O$	Output voltage	$I_O = -5$ mA to $-1$ A, $P_O \leq 15$ W $V_I = -18.5$ to $-30$ V	-14.3	-15	-15.7	V
$\Delta V_O$ <sup>(1)</sup>	Line regulation	$V_I = -17.5$ to $-30$ V, $T_J = 25$ °C			300	mV
		$V_I = -20$ to $-26$ V, $T_J = 25$ °C			150	
$\Delta V_O$ <sup>(1)</sup>	Load regulation	$I_O = 5$ mA to $1.5$ A, $T_J = 25$ °C			300	mV
		$I_O = 250$ to $750$ mA, $T_J = 25$ °C			150	
$I_d$	Quiescent current	$T_J = 25$ °C			3	mA
$\Delta I_d$	Quiescent current change	$I_O = 5$ mA to $1$ A			0.5	mA
		$V_I = -18.5$ to $-30$ V			1	
$\Delta V_O/\Delta T$	Output voltage drift	$I_O = 5$ mA		-0.9		mV/°C
eN	Output noise voltage	$B = 10$ Hz to $100$ kHz, $T_J = 25$ °C		250		$\mu$ V
SVR	Supply voltage rejection	$\Delta V_I = 10$ V, $f = 120$ Hz	54	60		dB
$V_d$	Dropout voltage	$I_O = 1$ A, $T_J = 25$ °C, $\Delta V_O = 100$ mV		1.1		V
$I_{sc}$	Short circuit current			0.7		A

1. Load and line regulation are specified at constant junction temperature. Changes in  $V_O$  due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

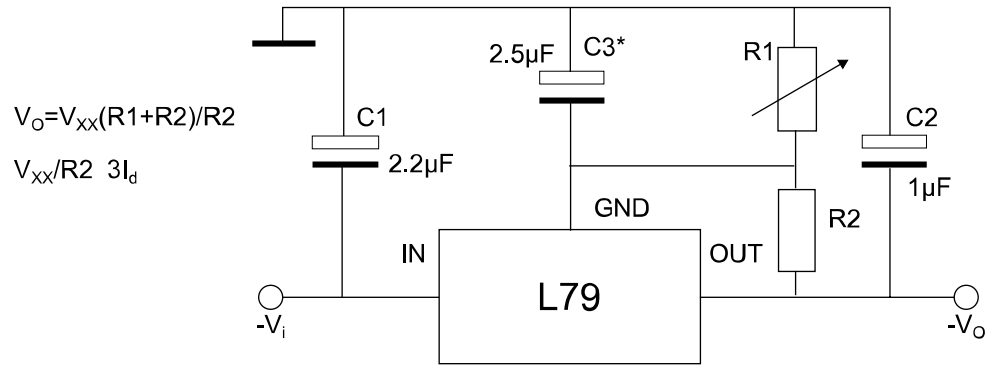
## 6 Application information

**Figure 4. Fixed output regulator**


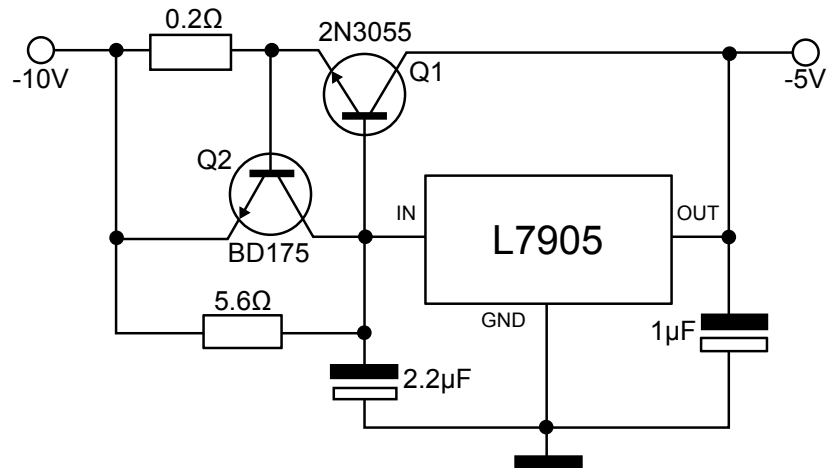
**Note:**  $C_I$  is required for stability. For value given, capacitor must be solid tantalum. If aluminium electrolytic are used, at least ten times value should be selected.  $C_O$  is required if regulator is located an appreciable distance from power supply filter. To improve transient response. If large capacitors are used, a high current diode from input to output (1N4001 or similar) should be introduced to protect the device from momentary input short circuit.

**Figure 5. Split power supply ( $\pm 15\text{ V} - 1\text{ A}$ )**


\* Against potential latch-up problems

**Figure 6. Circuit for increasing output voltage**


\* C3 Optional for improved transient response and ripple rejection.

**Figure 7. High current negative regulator (-5 V / 4 A with 5 A current limiting)**


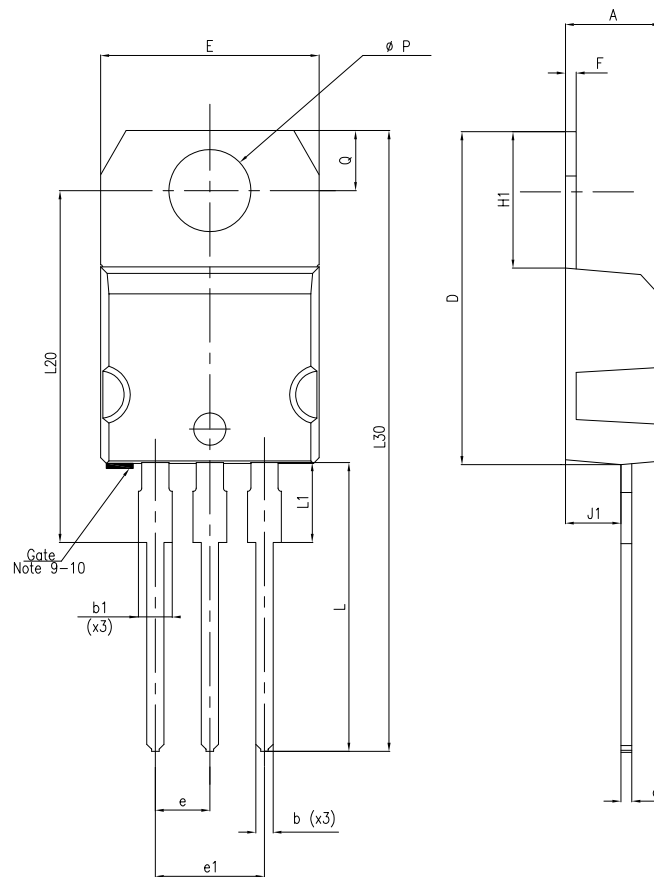
## 7 Package information

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: [www.st.com](http://www.st.com).

ECOPACK® is an ST trademark.

### 7.1 TO-220 (single gauge) package information

**Figure 8. TO-220 (single gauge) package outline**



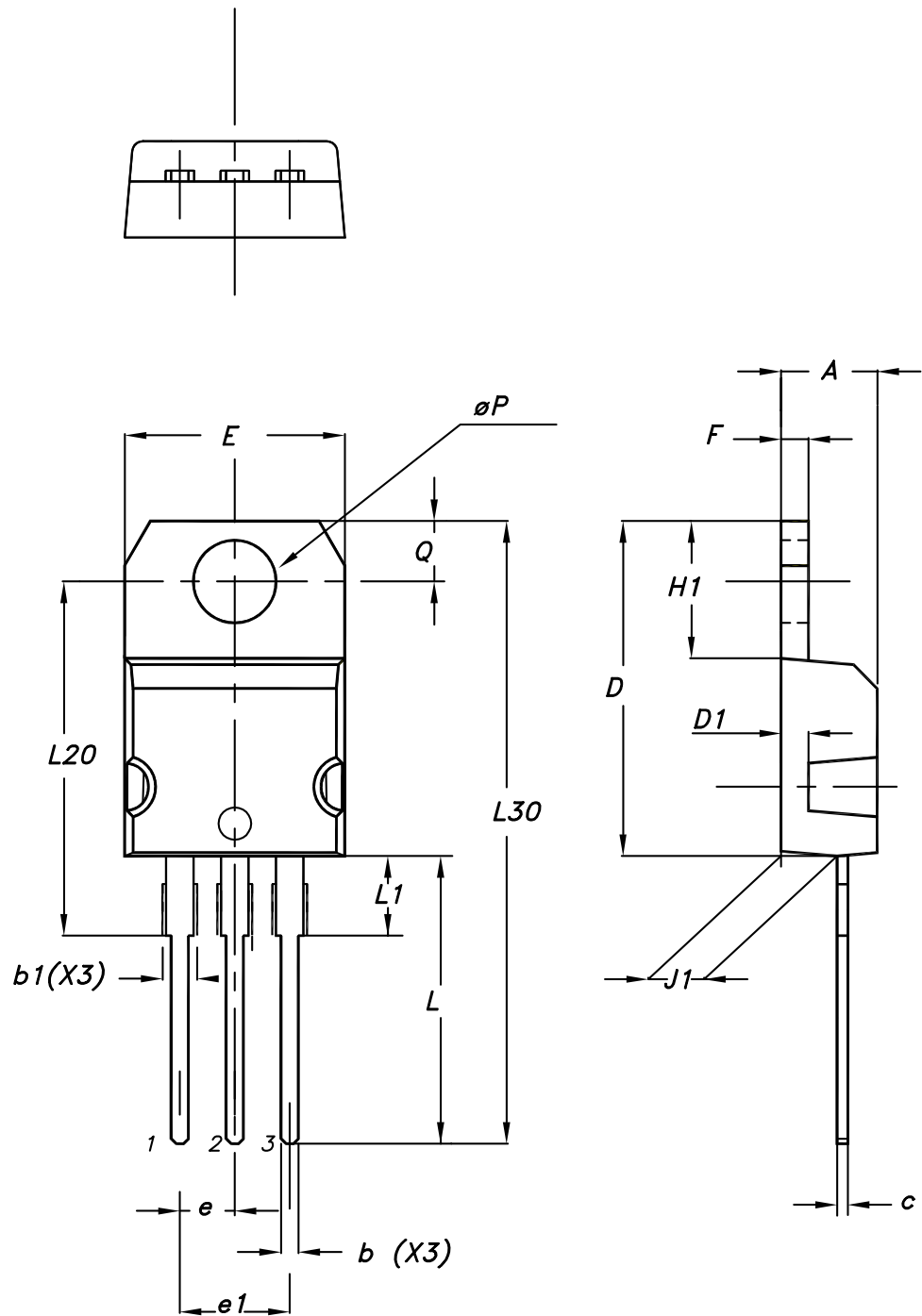
8174627 Rev 6

**Table 10. TO-220 (single gauge) package mechanical data**

Dim.	mm		
	Min.	Typ.	Max.
A	4.40		4.60
b	0.61		0.88
b1	1.14		1.70
c	0.48		0.70
D	15.25		15.75
E	10.00		10.40
e	2.40		2.70
e1	4.95		5.15
F	0.51		0.60
H1	6.20		6.60
J1	2.40		2.72
L	13.00		14.00
L1	3.50		3.93
L20		16.40	
L30		28.90	
ΦP	3.75		3.85
Q	2.65		2.95

## 7.2 TO-220 (dual gauge) package information

Figure 9. TO-220 type A package outline



0015988\_typeA\_Rev\_22

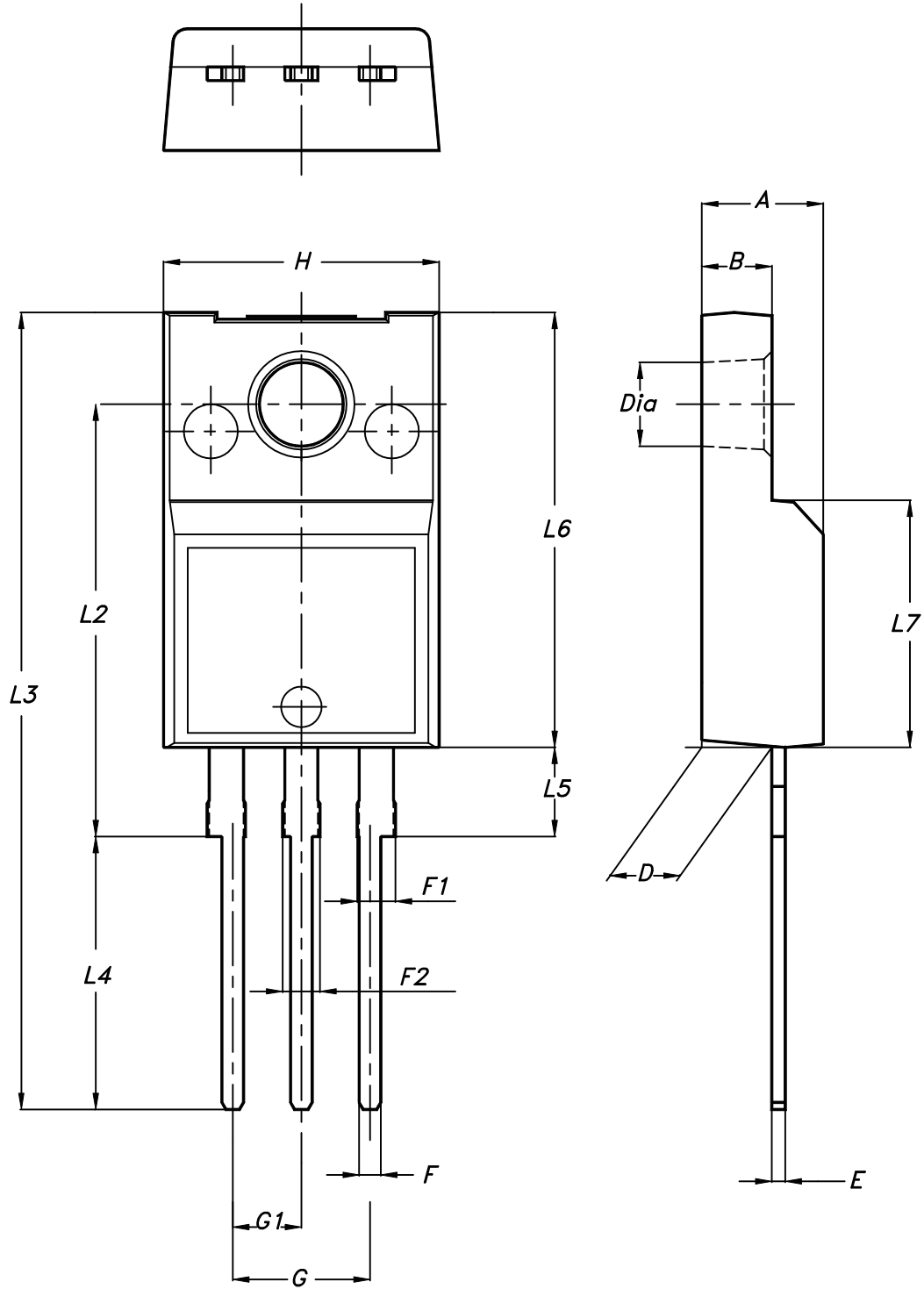
**Table 11. TO-220 type A package mechanical data**

Dim.	mm		
	Min.	Typ.	Max.
A	4.40		4.60
b	0.61		0.88
b1	1.14		1.55
c	0.48		0.70
D	15.25		15.75
D1		1.27	
E	10.00		10.40
e	2.40		2.70
e1	4.95		5.15
F	1.23		1.32
H1	6.20		6.60
J1	2.40		2.72
L	13.00		14.00
L1	3.50		3.93
L20		16.40	
L30		28.90	
øP	3.75		3.85
Q	2.65		2.95



### 7.3 TO-220FP package information

Figure 10. TO-220FP package outline



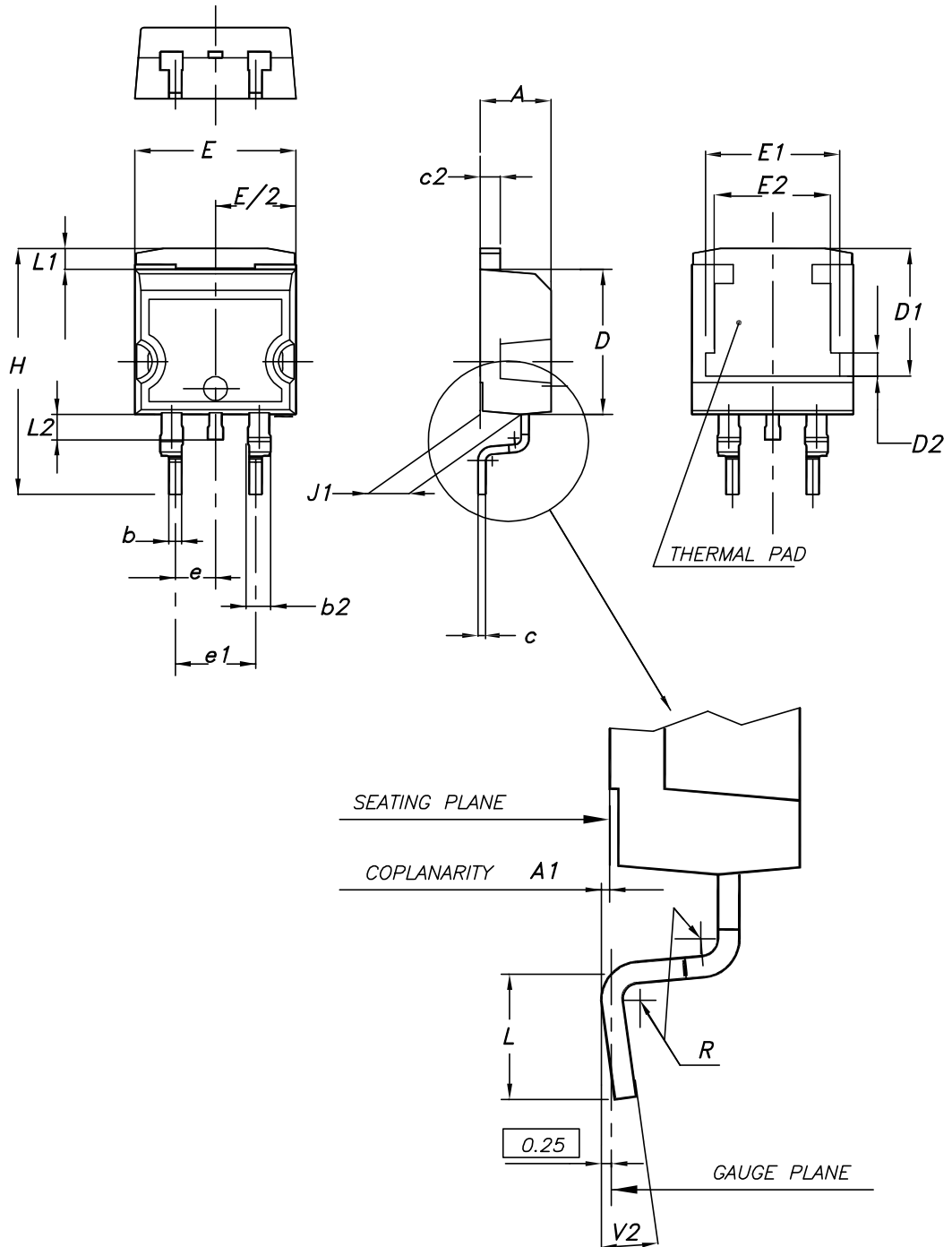
7012510\_Rev\_12\_B

**Table 12. TO-220FP package mechanical data**

Dim.	mm		
	Min.	Typ.	Max.
A	4.4		4.6
B	2.5		2.7
D	2.5		2.75
E	0.45		0.7
F	0.75		1
F1	1.15		1.70
F2	1.15		1.70
G	4.95		5.2
G1	2.4		2.7
H	10		10.4
L2		16	
L3	28.6		30.6
L4	9.8		10.6
L5	2.9		3.6
L6	15.9		16.4
L7	9		9.3
Dia	3		3.2

### 7.4 D<sup>2</sup>PAK (TO-263) type A package information

Figure 11. D<sup>2</sup>PAK (TO-263) type A package outline

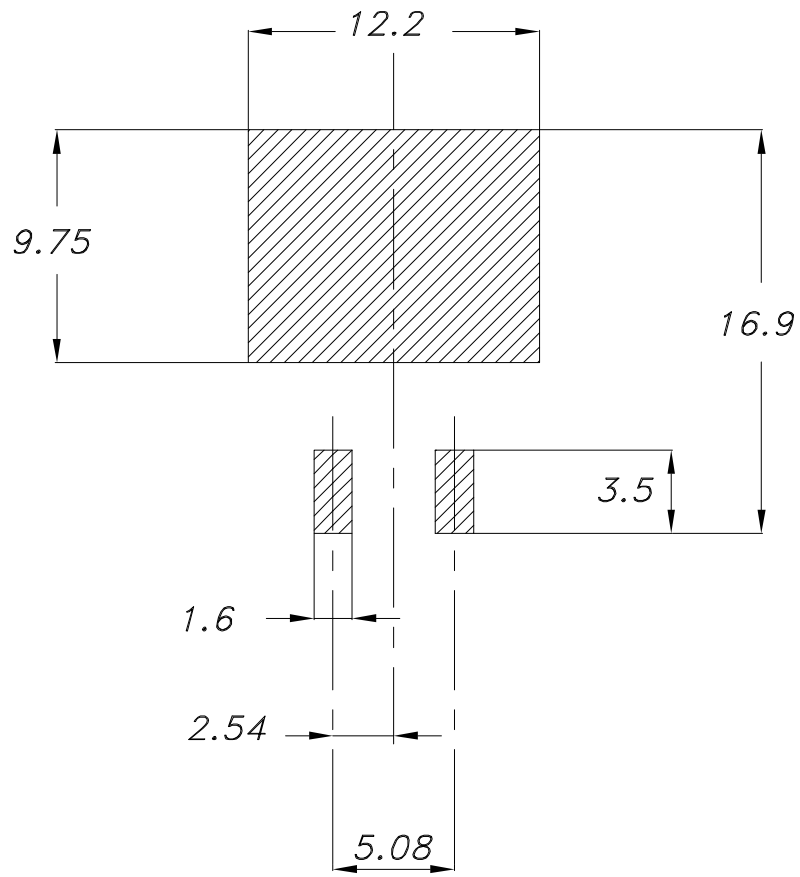


0079457\_25

**Table 13. D<sup>2</sup>PAK (TO-263) type A package mechanical data**

Dim.	mm		
	Min.	Typ.	Max.
A	4.40		4.60
A1	0.03		0.23
b	0.70		0.93
b2	1.14		1.70
c	0.45		0.60
c2	1.23		1.36
D	8.95		9.35
D1	7.50	7.75	8.00
D2	1.10	1.30	1.50
E	10.00		10.40
E1	8.30	8.50	8.70
E2	6.85	7.05	7.25
e		2.54	
e1	4.88		5.28
H	15.00		15.85
J1	2.49		2.69
L	2.29		2.79
L1	1.27		1.40
L2	1.30		1.75
R		0.40	
V2	0°		8°

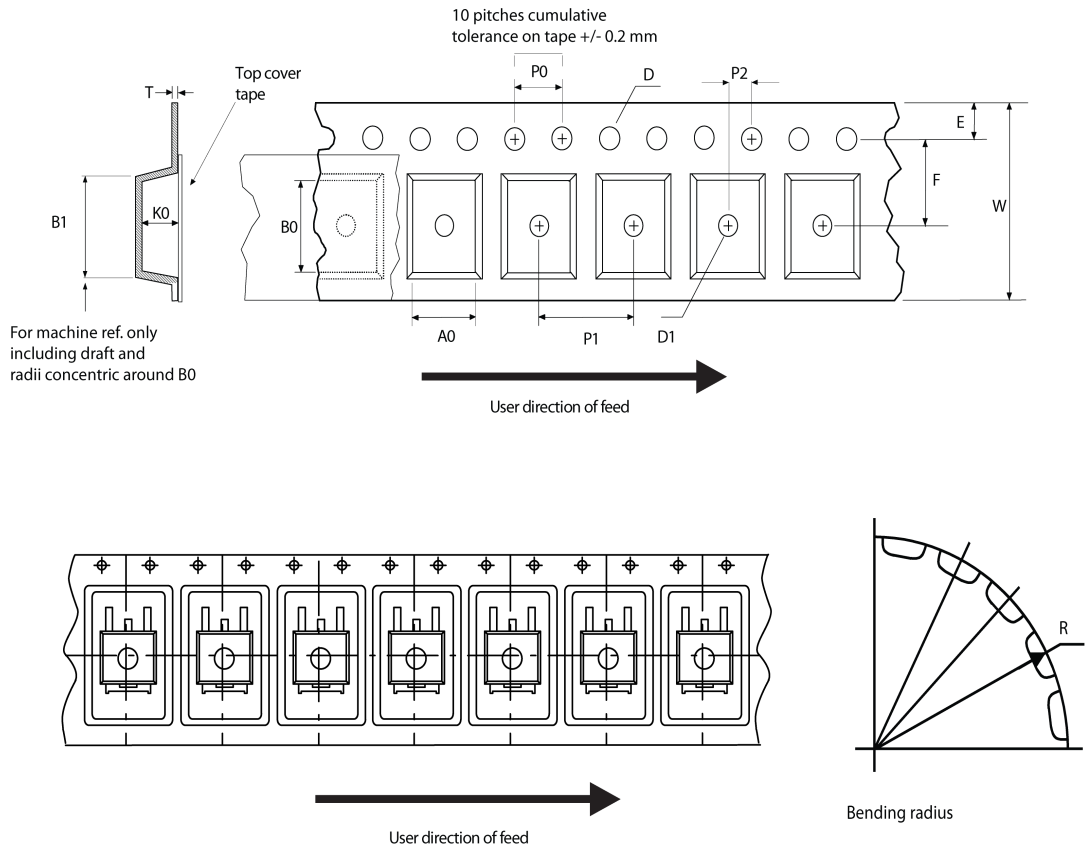
Figure 12. D<sup>2</sup>PAK (TO-263) recommended footprint (dimensions are in mm)



Footprint

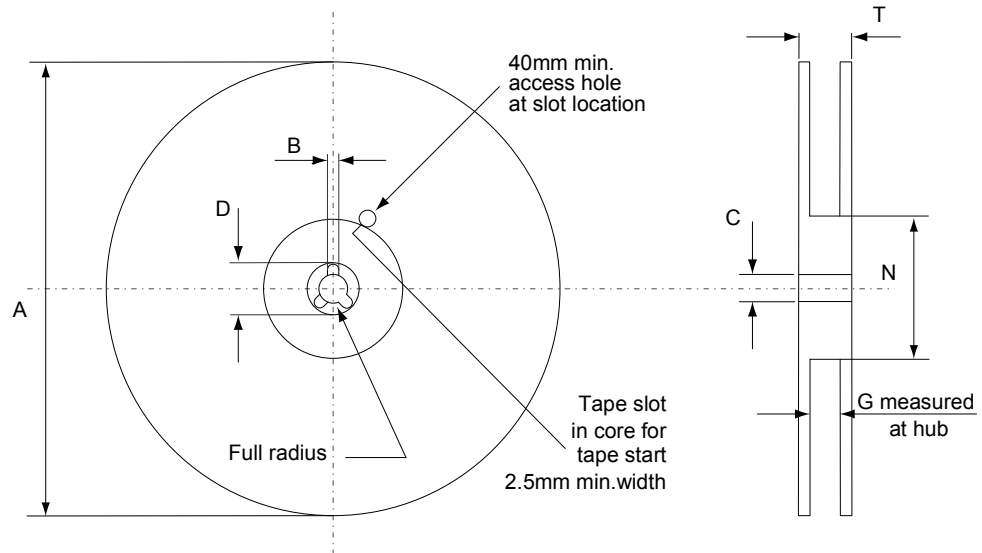
## 7.5 D<sup>2</sup>PAK packing information

Figure 13. D<sup>2</sup>PAK tape outline



AM08852v1

Figure 14. D<sup>2</sup>PAK reel outline



AM06038v1

Table 14. D<sup>2</sup>PAK tape and reel mechanical data

Tape			Reel			
Dim.	mm		Dim.	mm		
	Min.	Max.		Min.	Max.	
A0	10.5	10.7	A		330	
B0	15.7	15.9	B	1.5		
D	1.5	1.6	C	12.8	13.2	
D1	1.59	1.61	D	20.2		
E	1.65	1.85	G	24.4	26.4	
F	11.4	11.6	N	100		
K0	4.8	5.0	T		30.4	
P0	3.9	4.1	Base quantity Bulk quantity			
P1	11.9	12.1				1000
P2	1.9	2.1				1000
R	50					
T	0.25	0.35				
W	23.7	24.3				

## 8 Device summary

Table 15. Order codes

TO-220 (single gauge)	TO-220 (dual gauge)	D <sup>2</sup> PAK	TO-220FP	Output voltages
L7905ACV	L7905ACV-DG	L7905ACD2T-TR		-5 V
L7905CV	L7905CV-DG	L7905CD2T-TR	L7905CP	-5 V
L7908CV	L7908CV-DG			-8 V
L7912ACV	L7912ACV-DG			-12 V
L7912CV	L7912CV-DG	L7912CD2T-TR	L7912CP	-12 V
L7915ACV	L7915ACV-DG			-15 V
L7915CV	L7915CV-DG		L7915CP	-15 V



## Revision history

**Table 16. Document revision history**

Date	Revision	Changes
22-Jun-2004	9	Order codes updated Table 3.
31-Aug-2005	10	Add new order codes (TO-220 E Type) on Table 3.
19-Jan-2007	11	D <sup>2</sup> PAK mechanical data updated and add footprint data.
06-Jun-2007	12	Order codes updated.
25-Oct-2007	13	Modified: Figure 3, Figure 4, Figure 6 and Figure 7.
05-Dec-2007	14	Modified: Table 1.
18-Feb-2008	15	Modified: Table 1 on page 1.
15-Jul-2008	16	Modified: Table 1 on page 1.
19-Jan-2010	17	Modified: Table 11 on page 14, added: Figure 8 on page 16, Figure 9 on page 17, Figure 10 and Figure 11 on page 18.
26-May-2010	18	Modified: VI parameter Table 2 on page 5.
12-Nov-2010	19	Modified: R <sub>thJC</sub> value for TO-220 Table 3 on page 5.
18-Nov-2011	20	Added: order codes L7905CV-DG, L7912CV-DG and L7915CV-DG Table 1 on page 1.
15-May-2012	21	Added: order codes L7908CV-DG Table 1 on page 1.
04-Jun-2014	22	Part numbers L79xxC and L79xxAC changed to L79. Updated the features and the description in cover page. Updated Table 1: Device summary, Section 3: Maximum ratings, Section 4: Test circuit, Section 5: Electrical characteristics, Section 6: Application information, Section 7: Package mechanical data. Added Section 8: Packaging mechanical data. Minor text changes.
27-Sep-2017	23	In Table 4: "Electrical characteristics of L7905AC": - updated I <sub>sc</sub> and I <sub>scp</sub> Typ. Values In Table 5: "Electrical characteristics of L7905C": - updated I <sub>sc</sub> Typ. Values In Table 7: "Electrical characteristics of L7912AC": - updated I <sub>sc</sub> Typ. Value - updated I <sub>scp</sub> Test conditions and Typ. Value In Table_8_Electrical_characteristics_of_L - updated I <sub>sc</sub> Typ. Value In Table 9: "Electrical characteristics of L7915AC": - updated I <sub>sc</sub> Typ. Value - updated I <sub>scp</sub> Test conditions and Typ. Value In Table 10: "Electrical characteristics of L7915C" - updated I <sub>sc</sub> Typ. Value Updated Section 7: "Package information"
15-Jan-2019	24	Updated: <a href="#">Section 5 Electrical characteristics</a> .

## Contents

<b>1</b>	<b>Diagram</b> .....	<b>2</b>
<b>2</b>	<b>Pin configuration</b> .....	<b>3</b>
<b>3</b>	<b>Maximum ratings</b> .....	<b>4</b>
<b>4</b>	<b>Test circuit</b> .....	<b>5</b>
<b>5</b>	<b>Electrical characteristics</b> .....	<b>6</b>
<b>6</b>	<b>Application information</b> .....	<b>11</b>
<b>7</b>	<b>Package information</b> .....	<b>13</b>
7.1	TO-220 (single gauge) package information .....	13
7.2	TO-220 (dual gauge) package information .....	14
7.3	TO-220FP package information .....	16
7.4	D <sup>2</sup> PAK (TO-263) type A package information .....	18
7.5	D <sup>2</sup> PAK packing information .....	21
<b>8</b>	<b>Ordering information</b> .....	<b>24</b>
	<b>Revision history</b> .....	<b>25</b>
	<b>Contents</b> .....	<b>26</b>
	<b>List of tables</b> .....	<b>27</b>
	<b>List of figures</b> .....	<b>28</b>

## List of tables

<b>Table 1.</b>	Absolute maximum ratings . . . . .	4
<b>Table 2.</b>	Thermal data . . . . .	4
<b>Table 3.</b>	Electrical characteristics of L7905AC . . . . .	6
<b>Table 4.</b>	Electrical characteristics of L7905C . . . . .	6
<b>Table 5.</b>	Electrical characteristics of L7908C . . . . .	7
<b>Table 6.</b>	Electrical characteristics of L7912AC . . . . .	8
<b>Table 7.</b>	Electrical characteristics of L7912C . . . . .	8
<b>Table 8.</b>	Electrical characteristics of L7915AC . . . . .	9
<b>Table 9.</b>	Electrical characteristics of L7915C . . . . .	10
<b>Table 10.</b>	TO-220 (single gauge) package mechanical data . . . . .	14
<b>Table 11.</b>	TO-220 type A package mechanical data . . . . .	16
<b>Table 12.</b>	TO-220FP package mechanical data . . . . .	18
<b>Table 13.</b>	D <sup>2</sup> PAK (TO-263) type A package mechanical data . . . . .	20
<b>Table 14.</b>	D <sup>2</sup> PAK tape and reel mechanical data . . . . .	23
<b>Table 15.</b>	Order codes . . . . .	24
<b>Table 16.</b>	Document revision history . . . . .	25

## List of figures

<b>Figure 1.</b>	Schematic diagram . . . . .	2
<b>Figure 2.</b>	Pin connections (top view) . . . . .	3
<b>Figure 3.</b>	Test circuit . . . . .	5
<b>Figure 4.</b>	Fixed output regulator . . . . .	11
<b>Figure 5.</b>	Split power supply ( $\pm 15\text{ V} - 1\text{ A}$ ) . . . . .	11
<b>Figure 6.</b>	Circuit for increasing output voltage . . . . .	12
<b>Figure 7.</b>	High current negative regulator ( $-5\text{ V} / 4\text{ A}$ with $5\text{ A}$ current limiting) . . . . .	12
<b>Figure 8.</b>	TO-220 (single gauge) package outline . . . . .	13
<b>Figure 9.</b>	TO-220 type A package outline . . . . .	15
<b>Figure 10.</b>	TO-220FP package outline . . . . .	17
<b>Figure 11.</b>	D <sup>2</sup> PAK (TO-263) type A package outline . . . . .	19
<b>Figure 12.</b>	D <sup>2</sup> PAK (TO-263) recommended footprint (dimensions are in mm) . . . . .	21
<b>Figure 13.</b>	D <sup>2</sup> PAK tape outline . . . . .	22
<b>Figure 14.</b>	D <sup>2</sup> PAK reel outline . . . . .	23

**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2019 STMicroelectronics – All rights reserved



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.