

DESCRIPTION

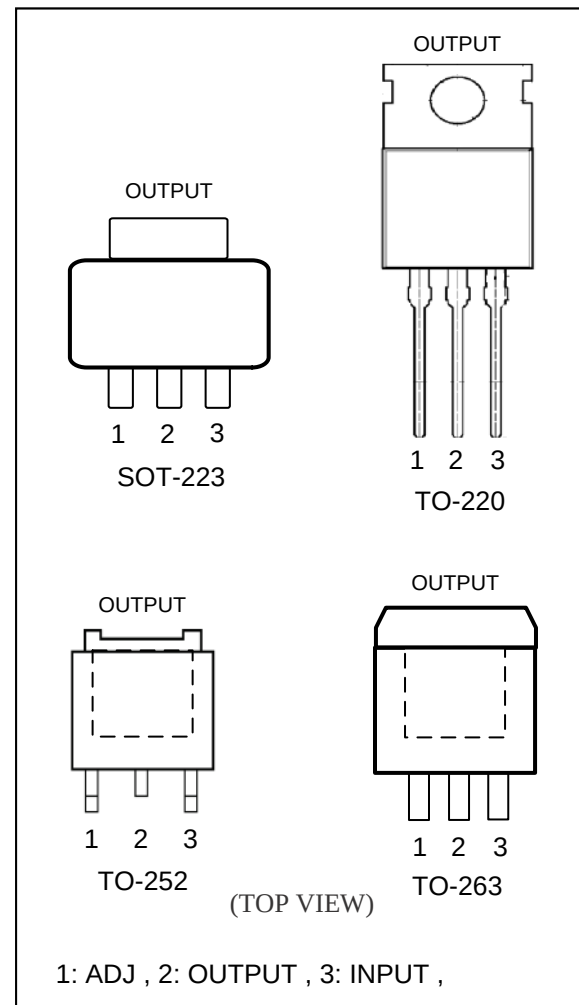
ASPL317L is an adjustable 3-terminal positive voltage regulator, designed to supply 1A of output current with voltage adjustable from 1.3V ~ 35V.

FEATURES

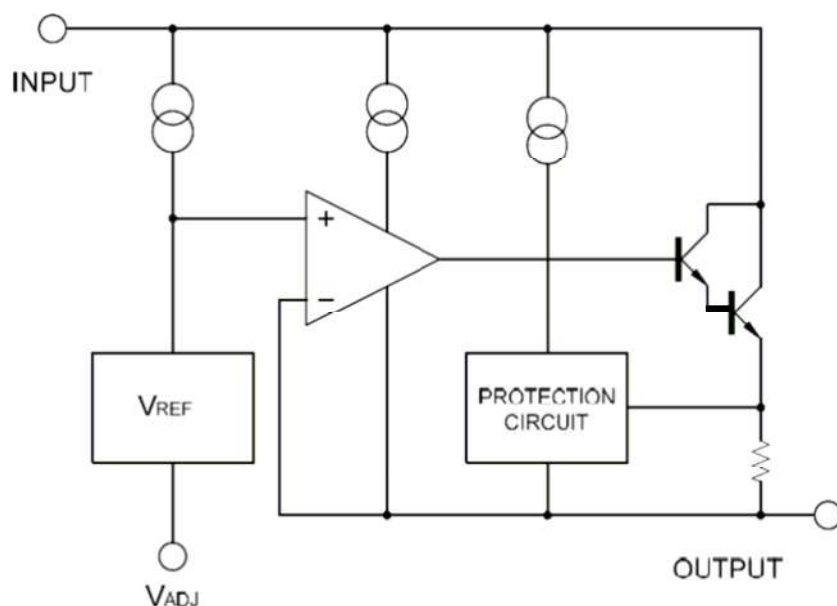
- Typical 1% Output Voltage Tolerance
- Output voltage adjustable from 1.3V ~35V
- Output current in excess of 1A
- Internal short circuit protection
- Internal over temperature protection
- Output transistor safe area compensation

APPLICATIONS

- Electronic Points of Sale
- Medical, Health, and Fitness Applications
- Appliances and White Goods
- TV Set-Top Boxes
- Network Interface Card/Switch
- Telecom Equipment
- Printer and other Peripheral Equipment



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C) *

Characteristic	Symbol	Min.	Max.	Unit
Input - Output Voltage Difference	V _{in} -V _{out}		37	V
Power Dissipation	P _d	Internal limited		
Maximum junction temperature	T _J		150	°C
Operating Temperature	T _{op}	-40	85	°C
Storage temperature	T _s	-40	150	°C
Lead temperature (soldering, 10sec)	T _{LEAD}		260	°C
ESD (human body model)	ESD		4000	V

*: Absolute maximum ratings are stress ratings only and functional device operation is not implied. The device could be damaged beyond Absolute maximum ratings.

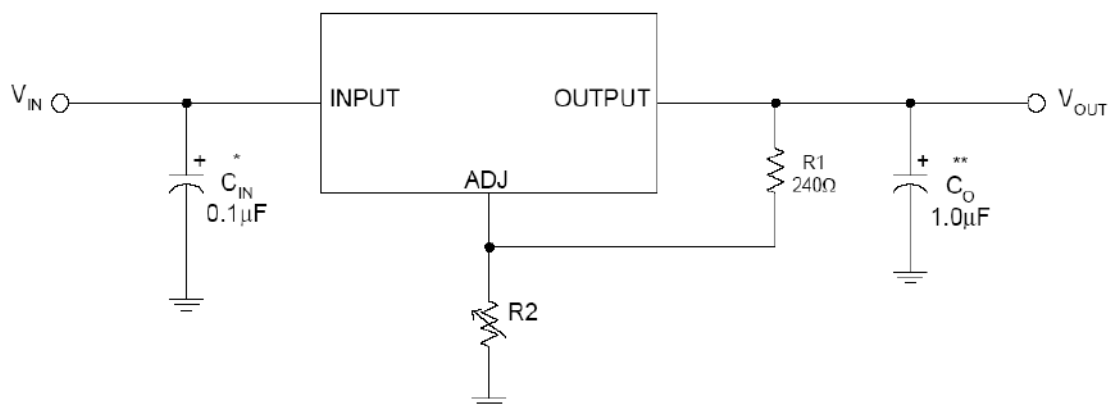
ELECTRICAL CHARACTERISTICS

(VIN-VOUT=5V, IOUT=10mA, Ta=25°C, unless otherwise specified.) *

Characteristics	Test conditions	Symbol	Min.	Typ.	Max.	Unit
Reference voltage	$10\text{mA} \leq I_{\text{OUT}} \leq 1\text{A}$ $3\text{V} \leq (V_{\text{IN}} - V_{\text{OUT}}) \leq 37\text{V}$ $\text{PD} \leq 20\text{W}$	V_{REF}	1.20	1.25	1.30	V
Line regulation	$3\text{V} \leq V_{\text{IN}} - V_{\text{OUT}} \leq 37\text{V}$	S_V		0.01	0.04	%/V
Load regulation	$0\text{mA} \leq I_{\text{OUT}} \leq 1\text{A}$	S_i		0.2	0.4	%
Adjust pin current		I_{adj}		50	100	μA
Adjust pin current change	$10\text{mA} \leq I_{\text{OUT}} \leq 1\text{A}$ $3\text{V} \leq (V_{\text{IN}} - V_{\text{OUT}}) \leq 37\text{V}$ $\text{PD} \leq 20\text{W}$	ΔI_{adj}		0.2	5.0	μA
Minimum load current	$V_{\text{IN}} - V_{\text{OUT}} = 37\text{V}$	I_{Lmin}		3.5	10.0	mA
Ripple rejection	$f = 120\text{Hz}$, $C_{\text{OUT}} = 1\mu\text{F}$ tantalum, $(V_{\text{IN}} - V_{\text{OUT}}) = 3\text{V}$, $I_{\text{OUT}} = 1\text{A}$	RR	60	75		dB
Temperature stability	$T_{\text{MIN}} \leq T_J \leq T_{\text{MAX}}$			0.7		%
RMS output noise (% of V_{OUT})	$T_a = 25^\circ\text{C}$, $10\text{Hz} \leq f \leq 10\text{kHz}$	en		0.003		%
Thermal resistance, Junction to case	SOT-223 TO-252 TO-220 TO-263	θ_{JC}		23 12 5 5		$^\circ\text{C}/\text{W}$
Thermal resistance, Junction to Ambient	SOT-223 TO-252 TO-220 TO-263	θ_{JA}		165 112 54 64		$^\circ\text{C}/\text{W}$
Thermal shutdown hysteresis		Thys		25		$^\circ\text{C}$

*: Maximum Power Dissipation is Package Type and Case Temperature dependent.

APPLICATION CIRCUIT



* = C_{IN} is required if the regulator is located near power supply filter.

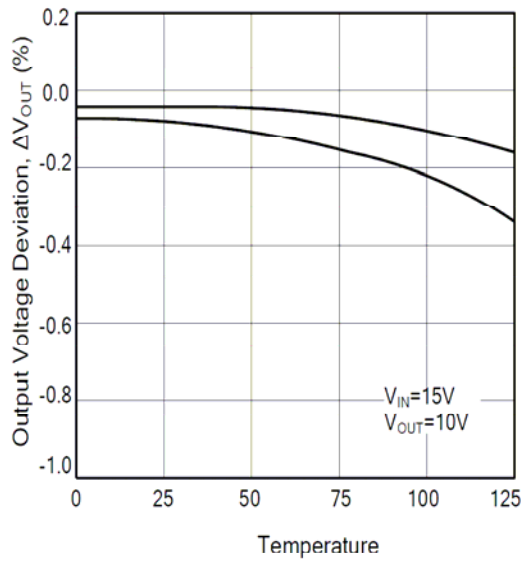
**= C_O is needed for stability and it improves transient response.

$$V_{OUT} = V_{REF} \times (1 + R2/R1) + I_{ADJ} \times R2$$

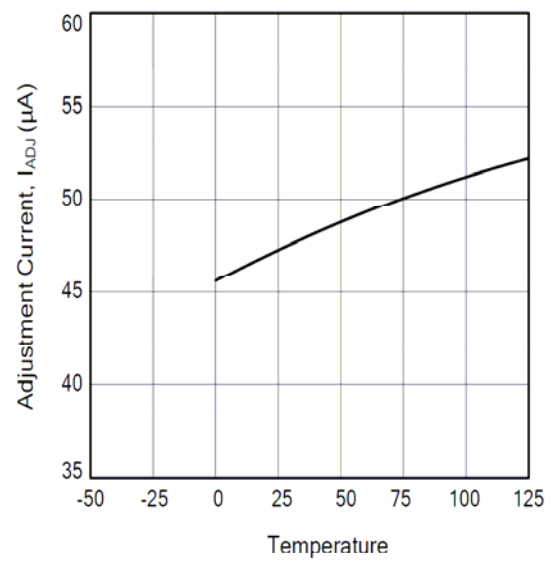
Since I_{ADJ} is controlled to less than $100\mu A$, the error associated with this term is negligible in most applications.

CHARACTERISTICS CURVES

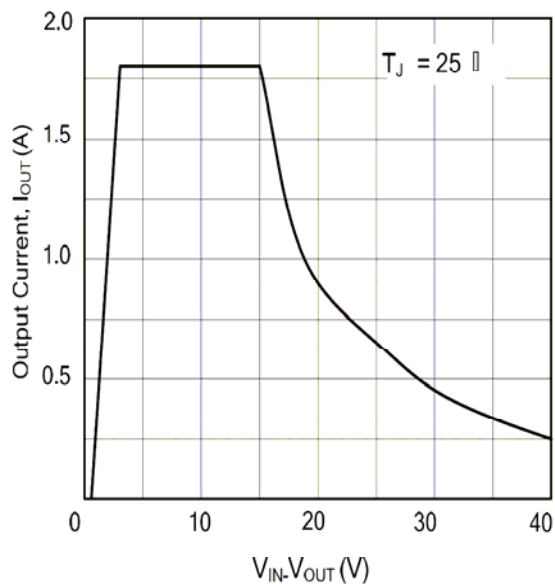
Load Regulation vs. temperature



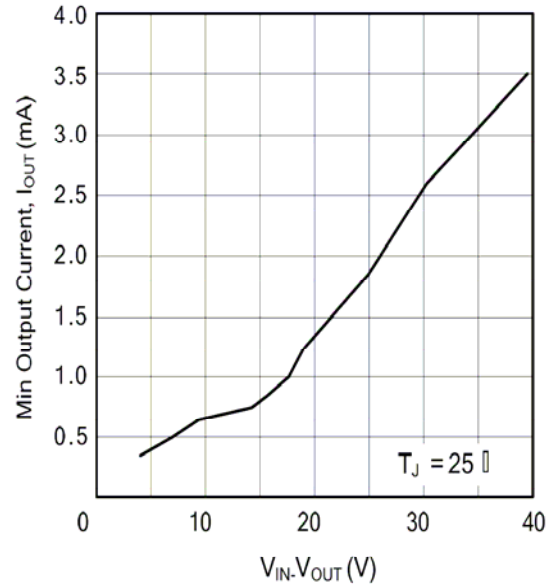
Adjustment Current vs. Temperature



Current Limit



Minimum Operating Current

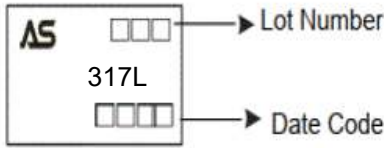


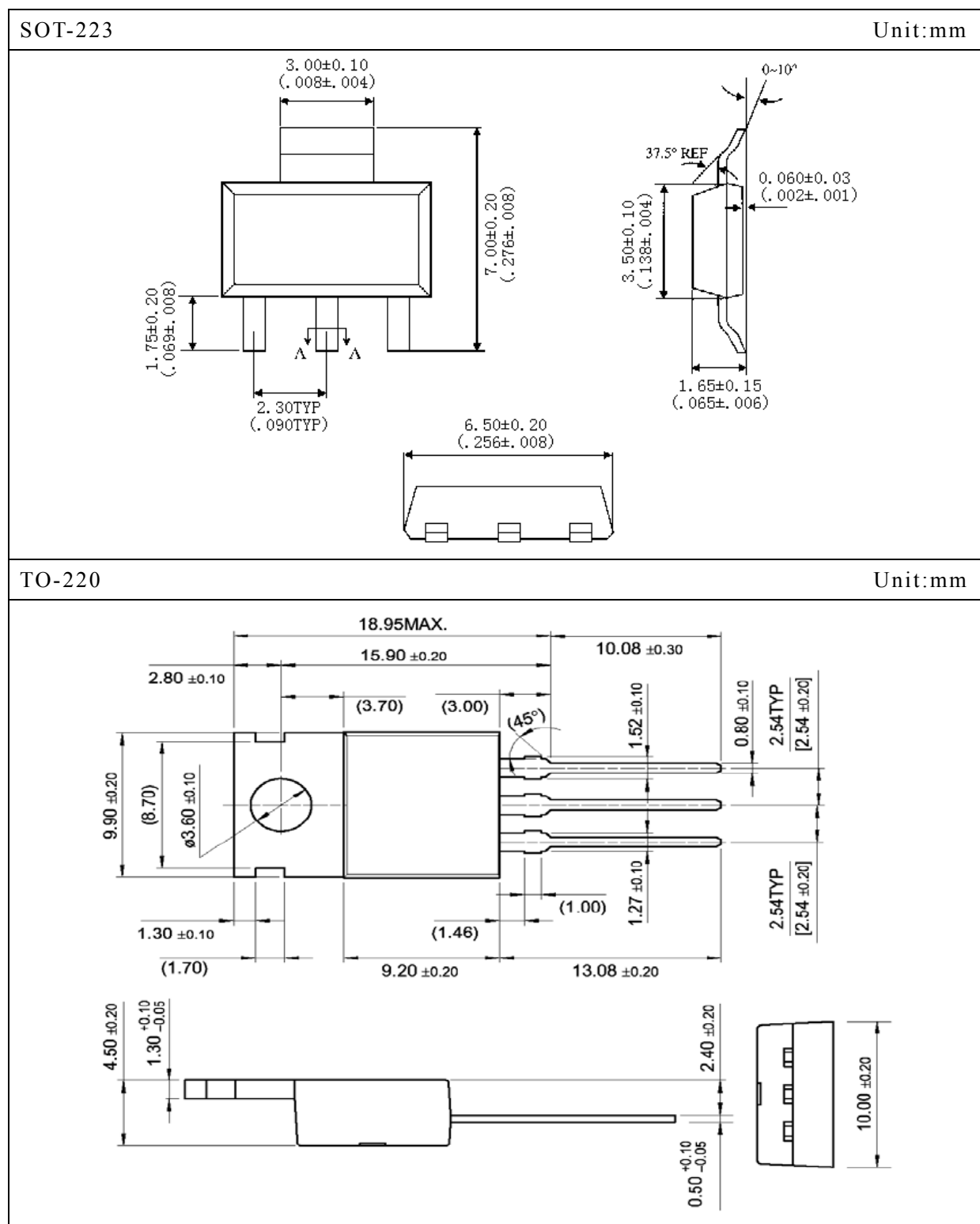
Ordering Information

Ordering Number	Package	Packing	Quantity
ASPL317LDT-R	SOT-223	Tape&Reel	2500/Reel
ASPL317LP-T	TO-220	Tube	50/Tube
ASPL317LKQ-R	TO-252	Tape&Reel	2500/Reel
ASPL317LG-R	TO-263	Tape&Reel	800/Reel

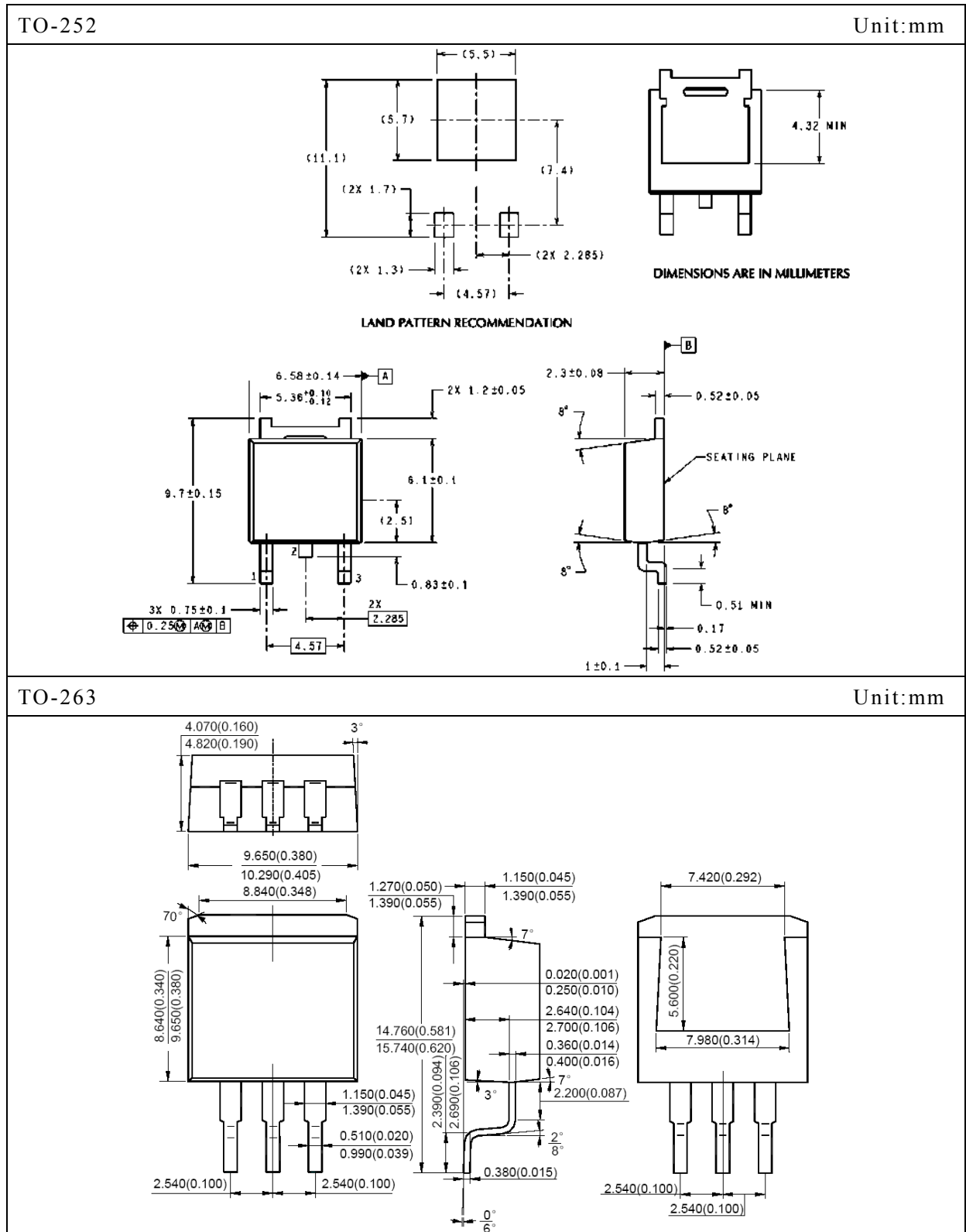
Note: "DT" = SOT-223, "P" = TO-220, "KQ" = TO-252, "G" = TO-263.

Note: "R" = Tape&Reel, "T" = Tube. (Stands for packing)

PACKAGE	MARKING
SOT-223 TO-220 TO-252 TO-263	 The diagram shows a rectangular marking area. On the left is the 'AS' logo. In the center is '317L'. To the right of '317L' are two rows of four small squares each. An arrow points from the top row of squares to the text 'Lot Number'. Another arrow points from the bottom row of squares to the text 'Date Code'.

OUTLINE DRAWING


High Current 3-Terminal Adjustable Regulator



IMPORTANT NOTICE

ShenZhen Ascend Semiconductor incorporated MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

ShenZhen Ascend Semiconductor Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. ShenZhen Ascend Semiconductor Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does ShenZhen Ascend Semiconductor Incorporated convey any license under its patent or trademark rights,

nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume .

all risks of such use and will agree to hold Ascendsemi Incorporated and all the companies whose products are represented on ShenZhen Ascend Semiconductor Incorporated website, harmless against all damages.

ShenZhen Ascend Semiconductor Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use ShenZhen Ascend Semiconductor Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold ShenZhen Ascend Semiconductor Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

www.ascendsemi.com