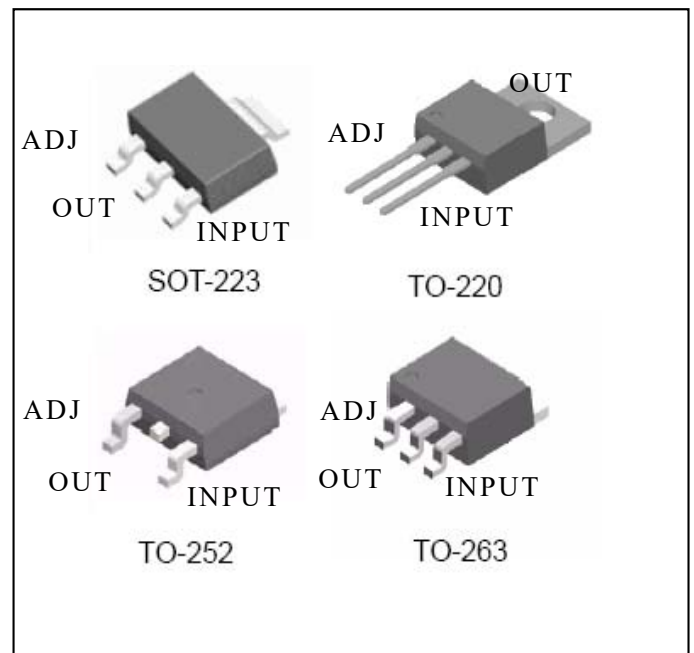


DESCRIPTION

ASPL 317L is an adjustable 3-terminal positive voltage regulator, designed to supply 1A of output current with voltage adjustable from 1.3V ~ 35V.

FEATURES

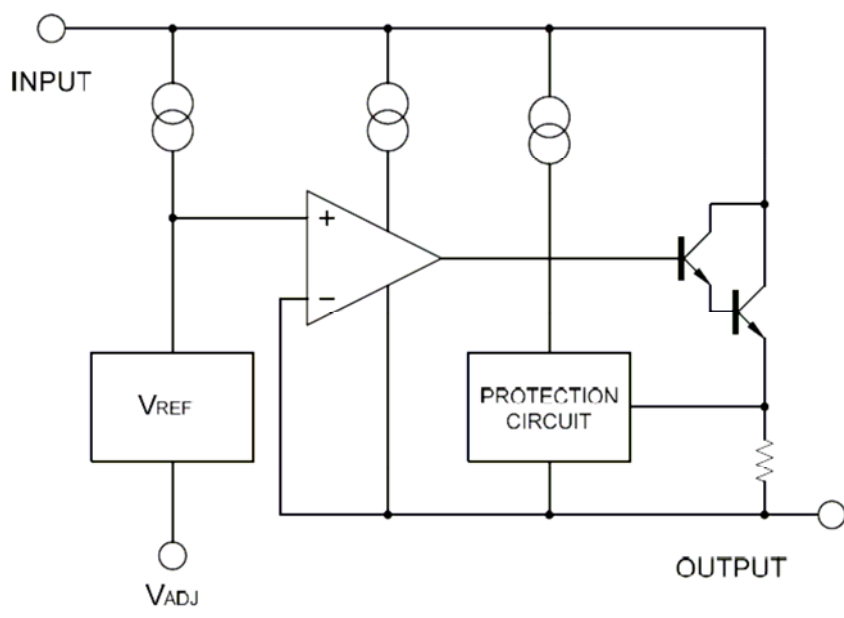
- Typical 1% Output Voltage Tolerance
- Output voltage adjustable from 1.3V ~35V
- Output current in excess of 1A
- Internal short circuit protection
- Internal over temperature protection
- Output transistor safe area compensation



APPLICATIONS

- PC Motherboard
- LCD Monitor
- Graphic Card
- DVD Player
- 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
Storage temperature	T _S	-40	150	°C
Lead temperature (soldering, 10sec)	T _{LEAD}		260	°C
ESD (human body model)	ESD		4000	V

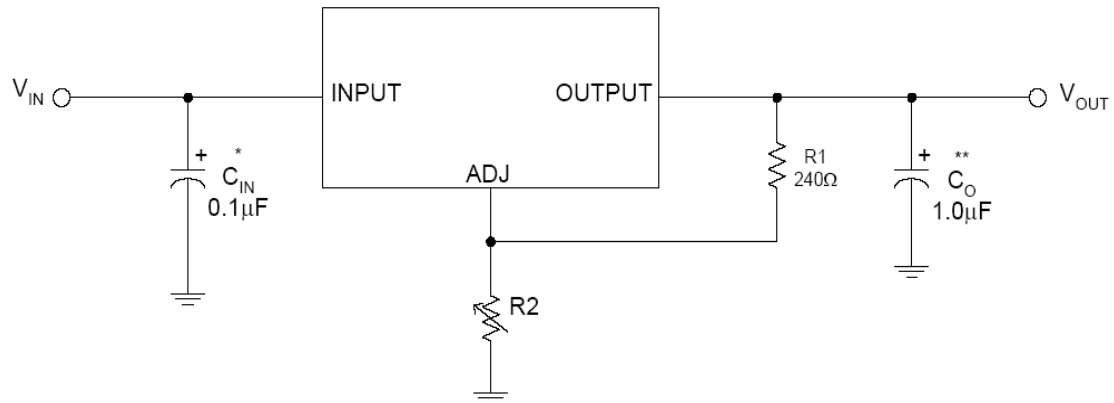
*: Absolute maximum ratings are stress ratings only and functional device operation is not implied. The device could be damaged beyond Absolute maximum ratings.

ELECTRICAL CHARACTERISTICS ($V_{IN}-V_{OUT}=5V$, $I_{OUT}=10mA$, $T_a=25^{\circ}C$, unless otherwise specified.) *

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

*: 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.

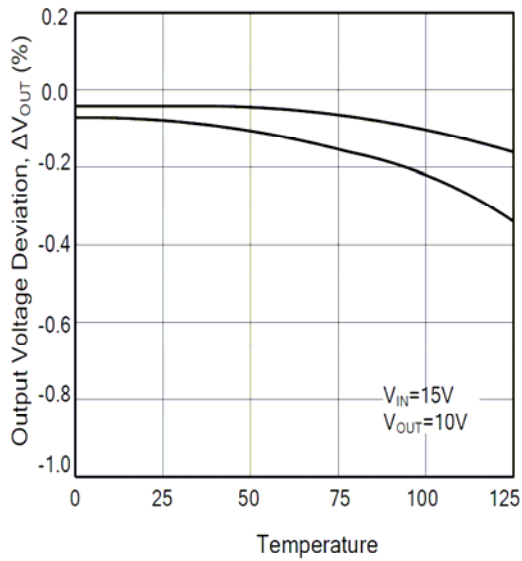
**= C_O is needed for stability and it improves transient response.

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

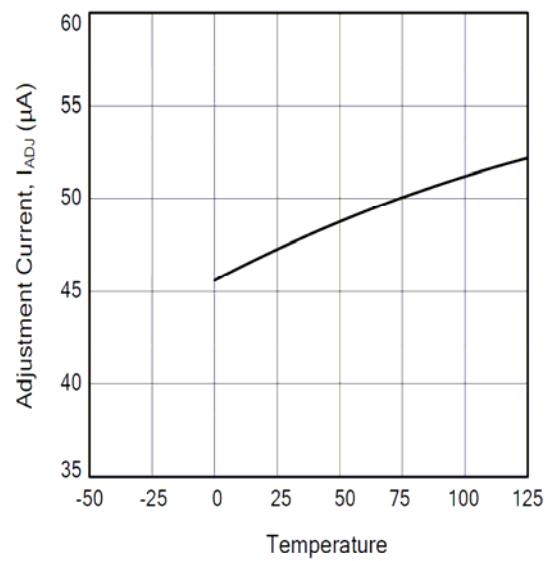
Since I_{ADJ} is controlled to less than $100\mu A$, the error associated with this term is negligible in most applications.

CHARACTERISTICS CURVES

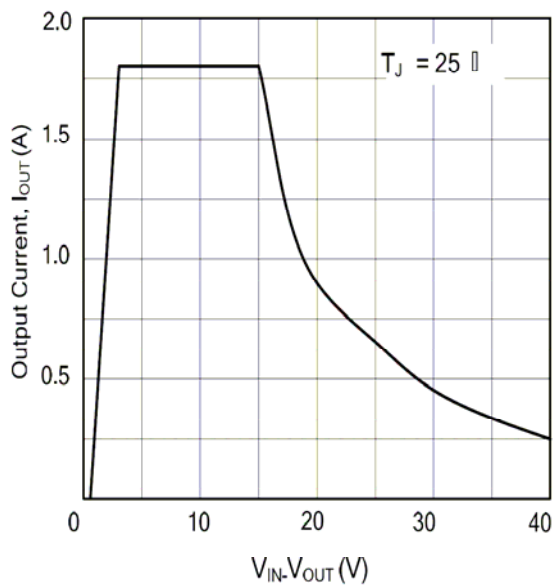
Load Regulation vs. temperature



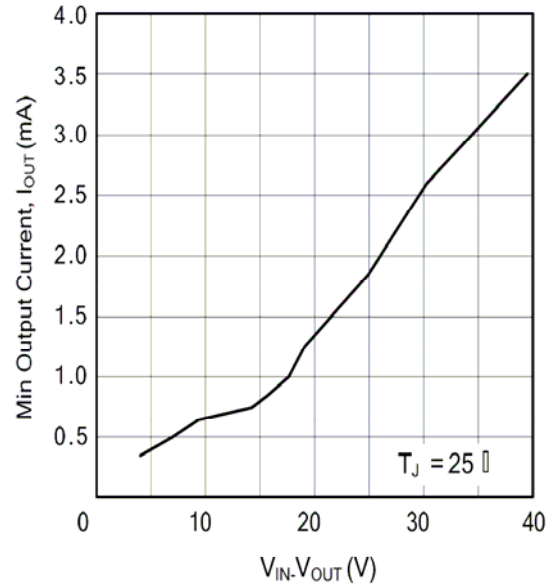
Adjustment Current vs. Temperature



Current Limit



Minimum Operating Current



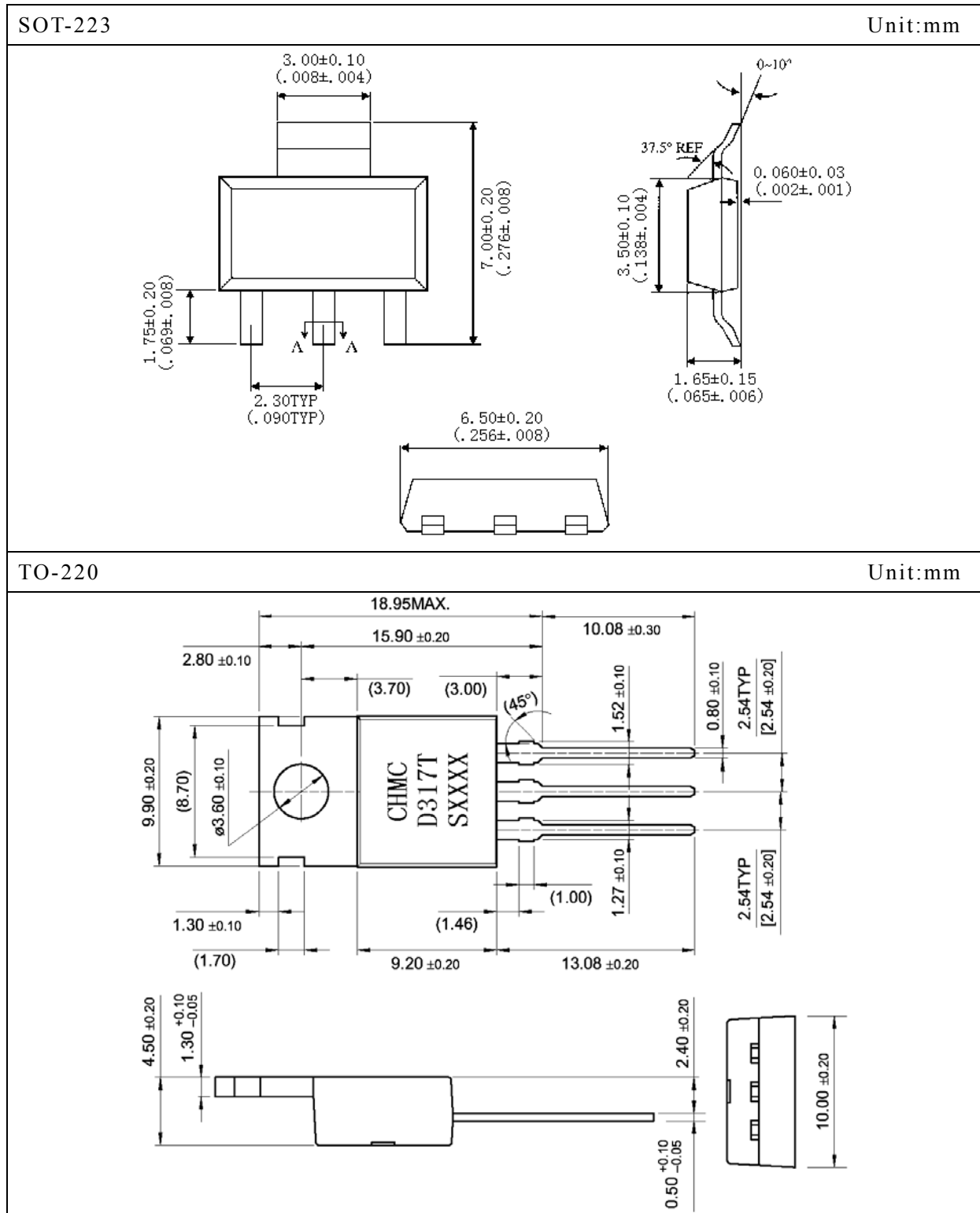


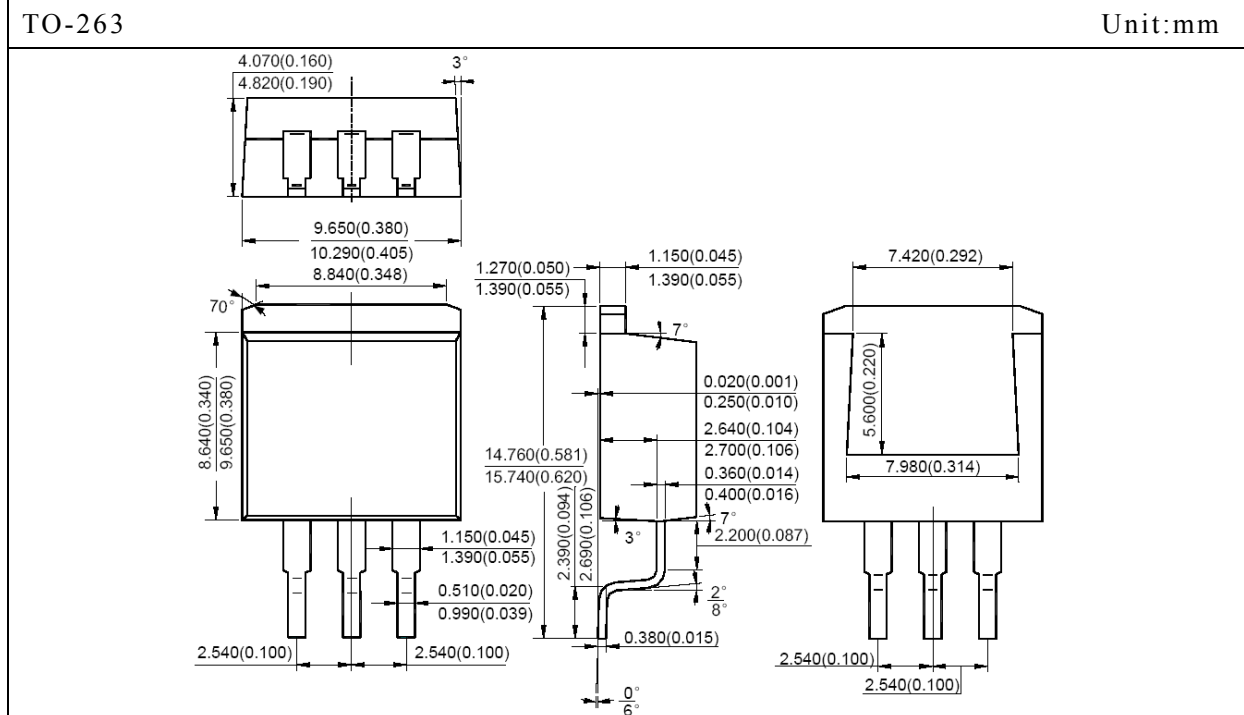
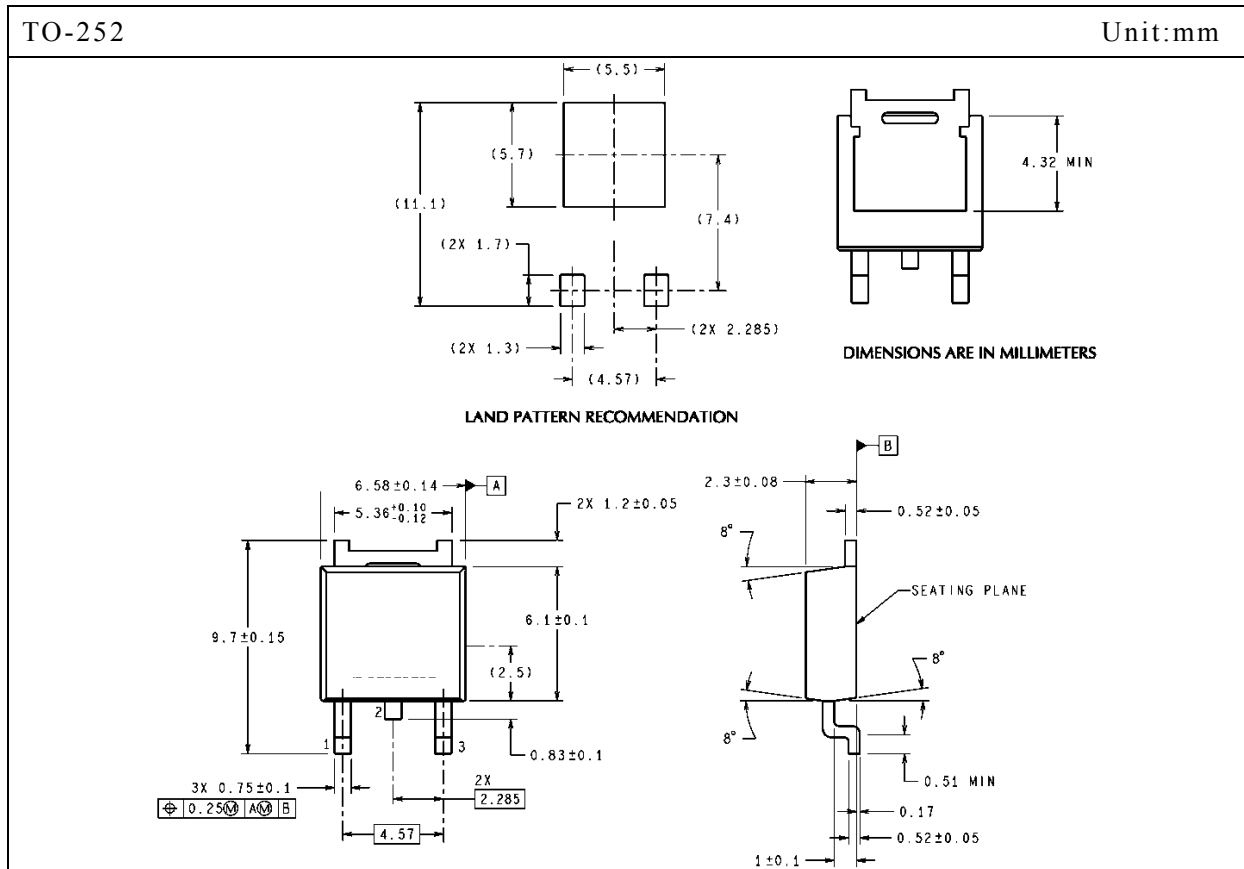
Ordering Information

Ordering Number	Package	Packing	Quantity
ASPL317LDT-R	SOT-223	Tape& Reel	2500/Reel
ASPL317LDT-R	SOT-223	Tape&Reel	1 000/Reel
ASPL317LP-T	TO-220	Tape& Tube	50/Tube
ASPL317LKQ-R	TO-252	Tape& Reel	2500/Reel
ASPL317LG-R	TO-263	Tape& Reel	800/Reel

PACKAGE	MARKING
SOT-223	
TO-220	
TO-252	
TO-263	

OUTLINE DRAWING





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