

## TO-220 Leadbend Options

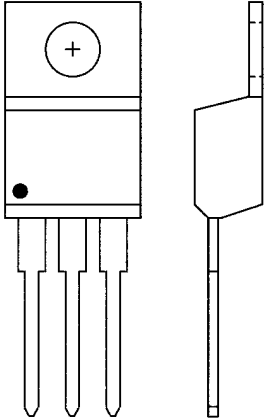
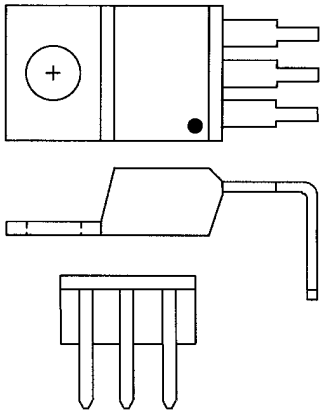
National Semiconductor offers several types of enhanced packages. One with high popularity is the TO-220 package designed with exposed heat sink for efficient heat dissipation. Examples of some products used in this package are voltage regulators, comparators, and high current switches. The TO-220 package is offered in lead counts from 3 to 15. To provide flexibility on system board applications, several leadbend options are offered as shown.

For any TO-220 package, please check with your sales representative for availability of requested leadbend options.

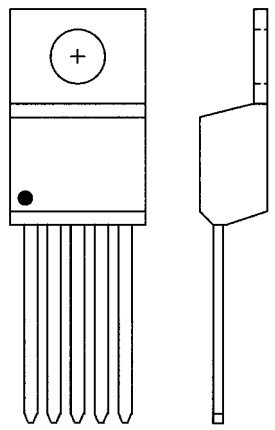
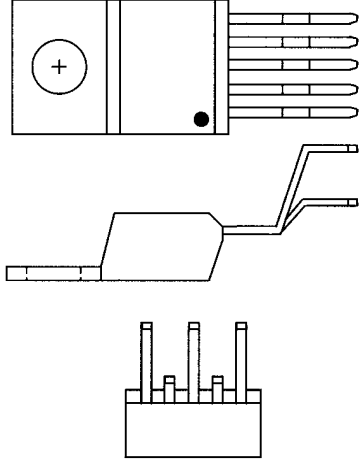
**Note:**

- Surface Mount Leadform available as TO-263 package.
- National Semiconductor's leadbend process requires an accurate set up and tight tooling controls. Third party leadbends are not recommended nor guaranteed, as an incorrect set up can potentially damage the device and render the device non-functional. For special lead forming or bending requirements please contact your National sales or marketing person.
- The maximum recommended torque force to mount a TO-220 package to a heatsink or PCB board is 9 inch-pounds. Use of rivet or exceeding torque force can potentially damage the device and render it non-functional and is not recommended nor guaranteed.

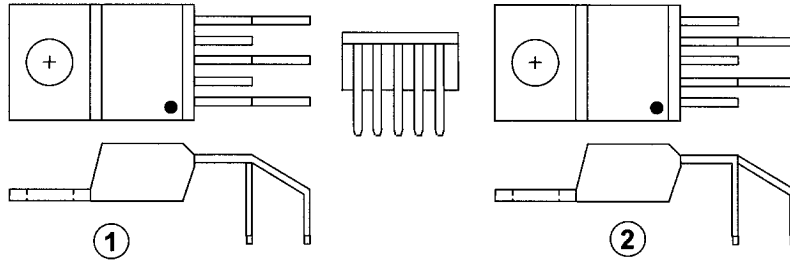
### 3 Lead Leadbend Options

					
Drawing No.	STD or Flow	Lead Finish	Drawing No.	STD or Flow	Lead Finish
MKT-T03B	STD	SnPb	MKT-T03A	LB06	SnPb
MKT-T03B	NOPB	Pb-Free	MKT-T03A	LF06	Pb-Free
Ordering Example: LM1085IT-12 NOPB			Ordering Example: LM340T-12 LF06		

## 5 Lead Standard Leadbend Options

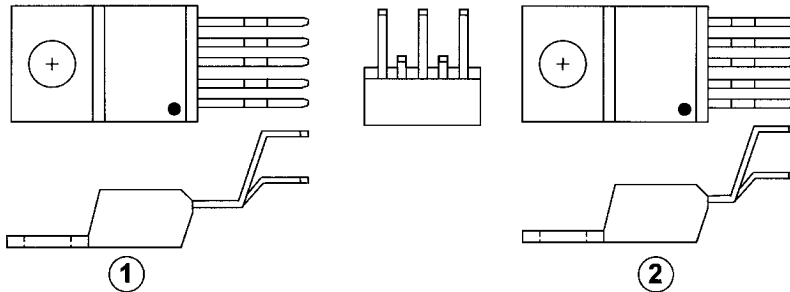
					
<b>Drawing No.</b>	<b>STD or Flow</b>	<b>Lead Finish</b>	<b>Drawing No.</b>	<b>STD or Flow</b>	<b>Lead Finish</b>
MKT-T05A	STD	SnPb	MKT-T05D	STD	SnPb
MKT-T05A	NOPB	Pb-Free	MKT-T05D	NOPB	Pb-Free
Ordering Example: LM2575T-12 NOPB			Ordering Example: LM2585T-ADJ NOPB		

## 5 Lead Non-Standard Leadbend Options



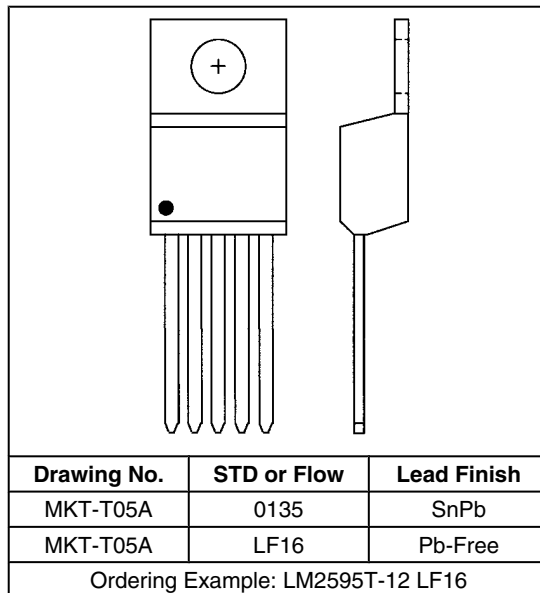
Drawing No.	Lead Forming No.	STD or Flow	Lead Finish
MKT-TA05B	1	LB02	SnPb
MKT-TA05B	1	LF02	Pb-Free
MKT-T05E	2	LB05	SnPb
MKT-T05E	2	LF05	Pb-Free

Ordering Example: LM2931CT LF05

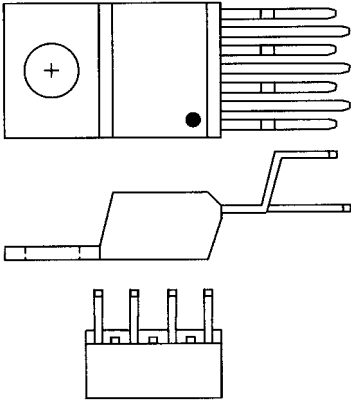


Drawing No.	Lead Forming No.	STD or Flow	Lead Finish
MKT-T05D	1	LB03	SnPb
MKT-T05D	1	LF03	Pb-Free
MKT-T05F	2	LB04	SnPb
MKT-T05F	2	LF04	Pb-Free

Ordering Example: LM2575T-5.0 LF04



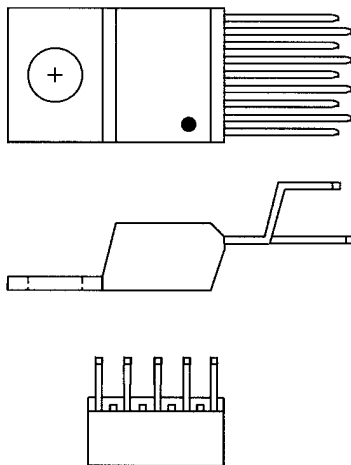
### 7 Lead Leadbend Options



Drawing No.	STD or Flow	Lead Finish
MKT-TA07B	STD	SnPb
MKT-TA07B	NOPB	Pb-Free

Ordering Example: LM2676T-ADJ

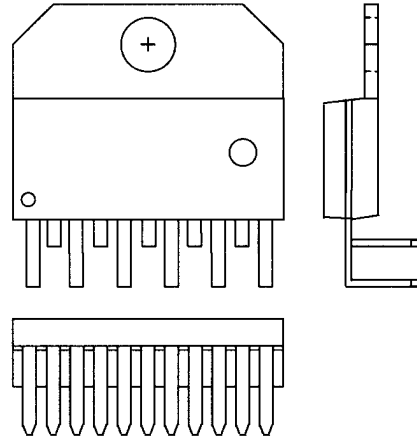
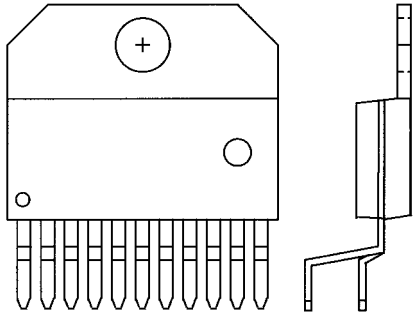
### 9 Lead Leadbend Options



Drawing No.	STD or Flow	Lead Finish
MKT-TA09A	STD	SnPb
MKT-TA09A	NOPB	Pb-Free

Order Example: LM4755T NOPB

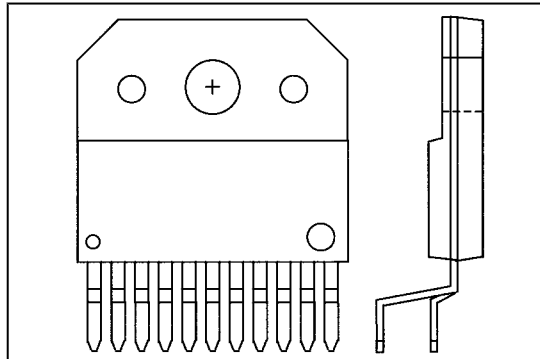
## 11 Lead Non-Isolated Leadbend Options



Drawing No.	STD or Flow	Lead Finish
MKT-TA11B	STD	SnPb
MKT-TA11B	NOPB	Pb-Free
Order Example: LM2984CT NOPB		

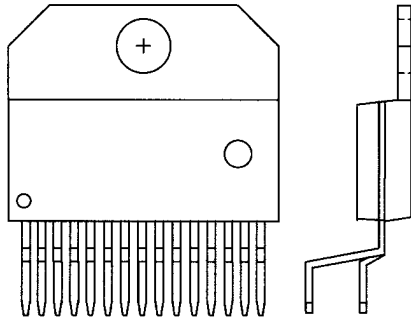
Drawing No.	STD or Flow	Lead Finish
MKT-TA11E	LB14	SnPb
MKT-TA11E	LF14	Pb-Free
Order Example: LMD18200T LF14		

## 11 Lead Isolated Leadbend Options

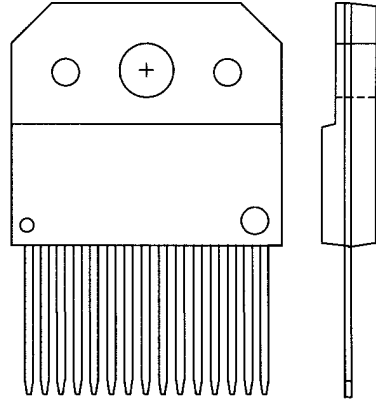


Drawing No.	STD or Flow	Lead Finish
MKT-TF11B	STD	SnPb
MKT-TF11B	NOPB	Pb-Free
Order Example: LM4766TF NOPB		

## 15 Lead Non-Isolated Leadbend Options

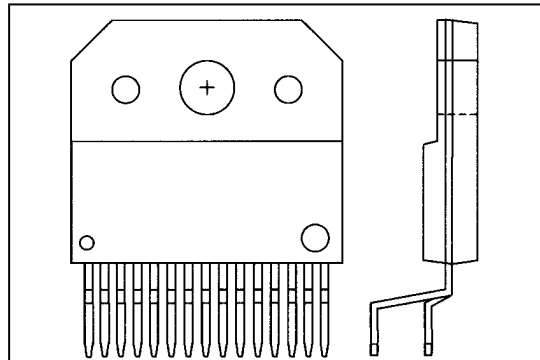


Drawing No.	STD or Flow	Lead Finish
MKT-TA15A	STD	SnPb
MKT-TA15A	NOPB	Pb-Free
Order Example: LM4766T NOPB		



Drawing No.	STD or Flow	Lead Finish
MKT-TA15B	LF15	Pb-Free
Order Example: LMD18245T LF14		

## 15 Lead Isolated Leadbend Options



Drawing No.	STD or Flow	Lead Finish
MKT-TF11B	STD	SnPb
MKT-TF11B	NOPB	Pb-Free
Order Example: LM4766TF NOPB		

# Notes

## Notes

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LDOs	<a href="http://www.national.com/ldo">www.national.com/ldo</a>	Quality and Reliability	<a href="http://www.national.com/quality">www.national.com/quality</a>
LED Lighting	<a href="http://www.national.com/led">www.national.com/led</a>	Feedback/Support	<a href="http://www.national.com/feedback">www.national.com/feedback</a>
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PowerWise® Solutions	<a href="http://www.national.com/powerwise">www.national.com/powerwise</a>	Applications & Markets	<a href="http://www.national.com/solutions">www.national.com/solutions</a>
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