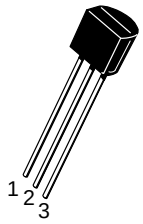
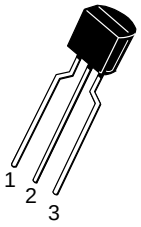
NPN Darlington Transistor

MPSA29



TO−92−3
CASE 135AN
Straight Lead
Bulk Packing



TO−92−3
CASE 135AR
Bent Lead
Tape & Reel
Ammo Packing

1. Emitter
2. Base
3. Collector

Description

This device is designed for applications requiring extremely high current gain at collector currents to 500 mA. Sourced from process 03. See MPSA28 for characteristics.

Features

- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

ABSOLUTE MAXIMUM RATINGS (Notes 1, 2)
(Values are at T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector−Emitter Voltage	V_{CEO}	100	V
Collector−Base Voltage	V_{CBO}	100	V
Emitter−Base Voltage	V_{EBO}	12	V
Collector Current − Continuous	I_C	800	mA
Operating and Storage Junction Temperature Range	T_J, T_{STG}	−55 to 150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

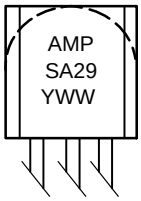
1. These ratings are based on a maximum junction temperature of 150°C.
2. These are steady−state limits. **onsemi** should be consulted on applications involving pulsed or low−duty−cycle operations.

THERMAL CHARACTERISTICS (Note 3)
(Values are at T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Total Device Dissipation	P_D	625	mW
Dissipation Derate Above 25°C	P_D	5.0	mW/°C
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	83.3	°C/W
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	200	°C/W

3. PCB size: FR−4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

MARKING DIAGRAM



A = Assembly Code
MPSA29 = Device Code
YWW = Date Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

ELECTRICAL CHARACTERISTICS (Note 4)
(Values are at T_A = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Max.	Unit
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = 100 μA, I_B = 0	100		V
BV_{CBO}	Collector−Base Breakdown Voltage	I_C = 100 μA, I_E = 0	100		V
BV_{EBO}	Emitter−Base Breakdown Voltage	I_E = 10 μA, I_C = 0	12		V
I_{CBO}	Collector Cut−Off Current	V_{CB} = 80 V, I_E = 0		100	nA
I_{CES}	Collector Cut−Off Current	V_{CE} = 80 V, I_E = 0		500	nA
I_{EBO}	Emitter Cut−Off Current	V_{EB} = 10 V, I_C = 0		100	nA
h_{FE}	DC Current Gain	V_{CE} = 5.0 V, I_C = 10 mA	10,000		
		V_{CE} = 5.0 V, I_C = 100 mA	10,000		
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = 10 mA, I_B = 0.01 mA		1.2	V
		I_C = 100 mA, I_B = 0.1 mA		1.5	V
V_{BE}(on)	Base−Emitter On Voltage	I_C = 100 mA, V_{CE} = 5.0 V		2.0	V
f_T	Current Gain − Bandwidth Product	I_C = 15 mA, V_{CE} = 5.0 V, f = 100 MHz	125		MHz
C_{obo}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1.0 MHz		8.0	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

4. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
MPSA29	MPSA29	TO−92−3, case 135AN (Pb−Free)	10,000 Units/ Bulk Box
MPSA29−D26Z	MPSA29	TO−92−3, case 135AR (Pb−Free)	2,000 Units/ Tape & Reel

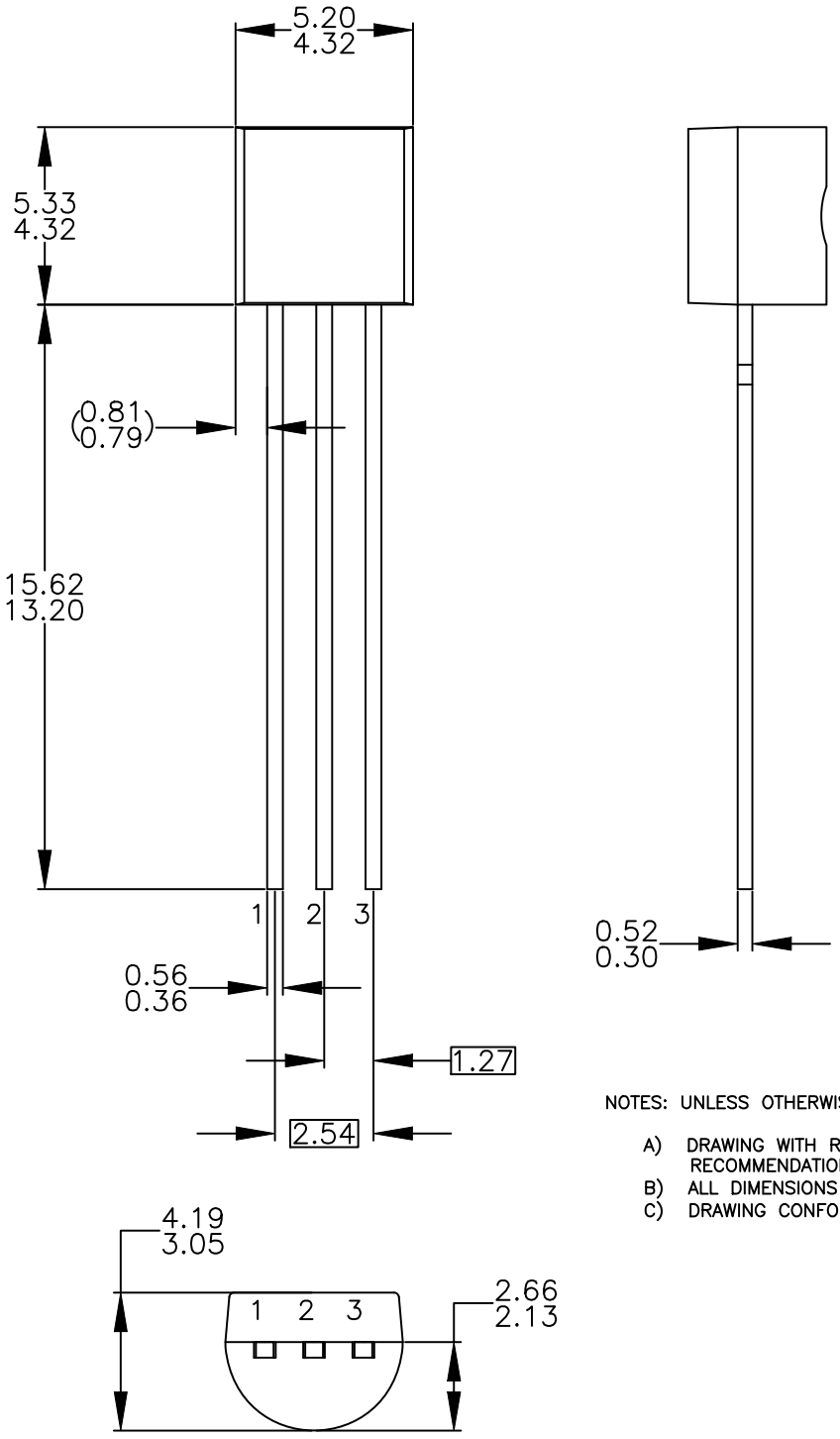
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

TO−92 3 4.825x4.76
CASE 135AN
ISSUE O

DATE 31 JUL 2016



NOTES: UNLESS OTHERWISE SPECIFIED

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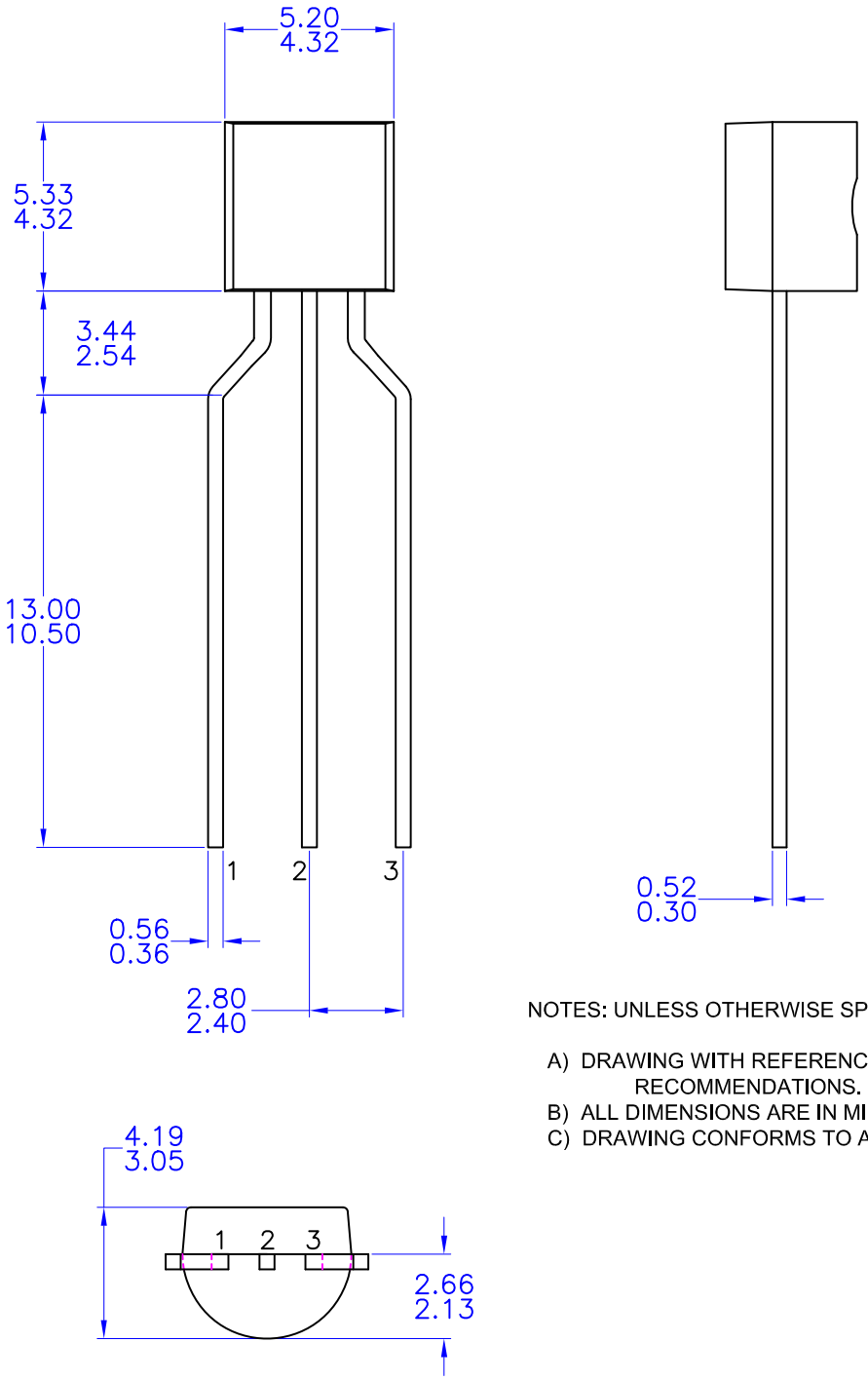
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

TO−92 3 4.83x4.76 LEADFORMED
CASE 135AR
ISSUE O

DATE 30 SEP 2016



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