Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

2N5550, 2N5551

Preferred Device

Amplifier Transistors

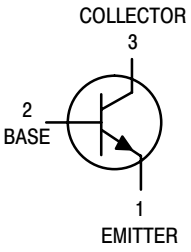
NPN Silicon

ON Semiconductor®

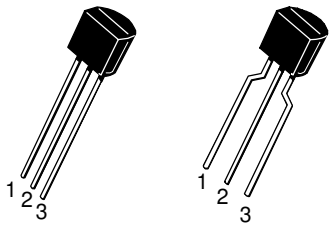
http://onsemi.com

Features

- These are Pb−Free Devices*



TO−92
CASE 29
STYLE 1



STRAIGHT LEAD
BULK PACK

BENT LEAD
TAPE & REEL
AMMO PACK

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector − Emitter Voltage 2N5550 2N5551	V_{CEO}	 140 160	Vdc
Collector − Base Voltage 2N5550 2N5551	V_{CBO}	 160 180	Vdc
Emitter − Base Voltage	V_{EBO}	6.0	Vdc
Collector Current − Continuous	I_C	600	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	625 5.0	mW mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.5 12	W mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150	°C

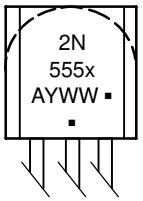
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	83.3	°C/W

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MARKING DIAGRAM



x = 0 or 1
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 5 of this data sheet.

Preferred devices are recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector−Emitter Breakdown Voltage (Note 1)		$V_{(BR)CEO}$			
(I_C = 1.0 mAdc, I_B = 0)	2N5550		140	–	Vdc
	2N5551		160	–	
Collector−Base Breakdown Voltage		$V_{(BR)CBO}$			
(I_C = 100 μAdc, I_E = 0)	2N5550		160	–	Vdc
	2N5551		180	–	
Emitter−Base Breakdown Voltage		$V_{(BR)EBO}$			
(I_E = 10 μAdc, I_C = 0)			6.0	–	Vdc
Collector Cutoff Current		I_{CBO}			
(V_{CB} = 100 Vdc, I_E = 0)	2N5550		–	100	nAdc
(V_{CB} = 120 Vdc, I_E = 0)	2N5551		–	50	
(V_{CB} = 100 Vdc, I_E = 0, T_A = 100°C)	2N5550		–	100	μAdc
(V_{CB} = 120 Vdc, I_E = 0, T_A = 100°C)	2N5551		–	50	
Emitter Cutoff Current		I_{EBO}	–	50	nAdc
(V_{EB} = 4.0 Vdc, I_C = 0)					
ON CHARACTERISTICS (Note 1)					
DC Current Gain		h_{FE}			
(I_C = 1.0 mAdc, V_{CE} = 5.0 Vdc)	2N5550		60	–	–
	2N5551		80	–	
(I_C = 10 mAdc, V_{CE} = 5.0 Vdc)	2N5550		60	250	
	2N5551		80	250	
(I_C = 50 mAdc, V_{CE} = 5.0 Vdc)	2N5550		20	–	
	2N5551		30	–	
Collector−Emitter Saturation Voltage		$V_{CE(sat)}$			
(I_C = 10 mAdc, I_B = 1.0 mAdc)	Both Types		–	0.15	Vdc
(I_C = 50 mAdc, I_B = 5.0 mAdc)	2N5550		–	0.25	
	2N5551		–	0.20	
Base−Emitter Saturation Voltage		$V_{BE(sat)}$			
(I_C = 10 mAdc, I_B = 1.0 mAdc)	Both Types		–	1.0	Vdc
(I_C = 50 mAdc, I_B = 5.0 mAdc)	2N5550		–	1.2	
	2N5551		–	1.0	
SMALL−SIGNAL CHARACTERISTICS					
Current−Gain — Bandwidth Product		f_T	100	300	MHz
(I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)					
Output Capacitance		C_{obo}	–	6.0	pF
(V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)					
Input Capacitance		C_{ibo}			pF
(V_{EB} = 0.5 Vdc, I_C = 0, f = 1.0 MHz)	2N5550		–	30	
	2N5551		–	20	
Small−Signal Current Gain		h_{fe}	50	200	–
(I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)					
Noise Figure		NF			dB
(I_C = 250 μAdc, V_{CE} = 5.0 Vdc, R_S = 1.0 kΩ, f = 1.0 kHz)	2N5550		–	10	
	2N5551		–	8.0	

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

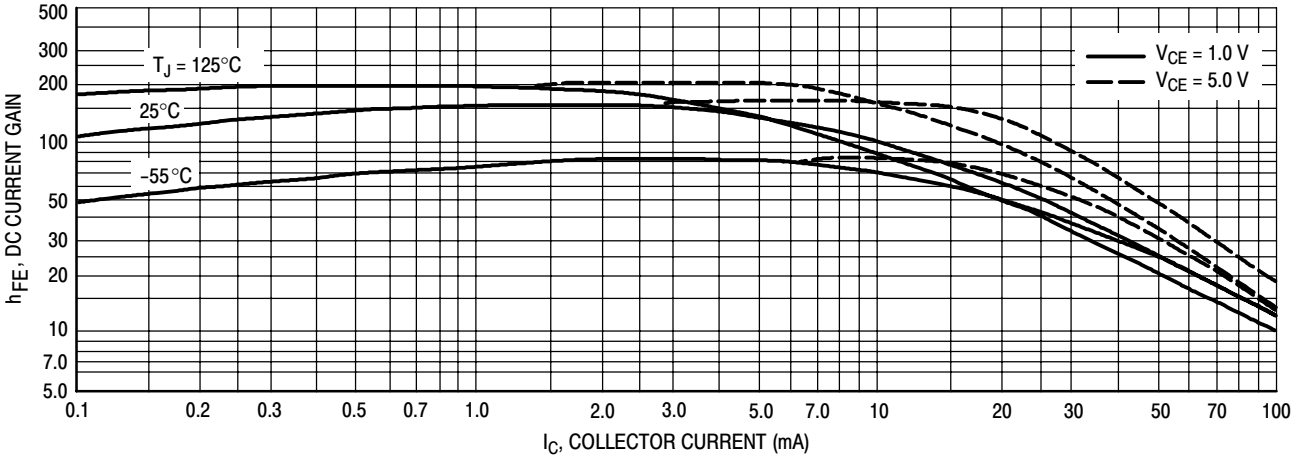


Figure 1. DC Current Gain

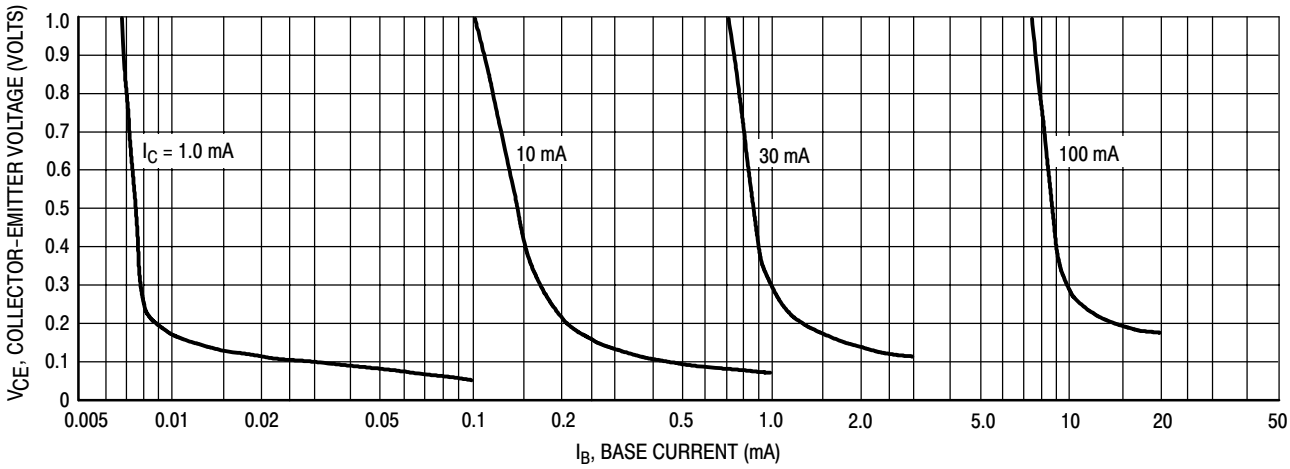


Figure 2. Collector Saturation Region

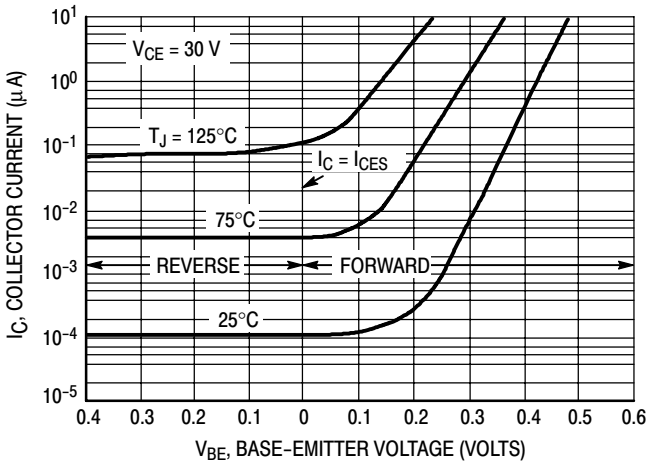


Figure 3. Collector Cut−Off Region

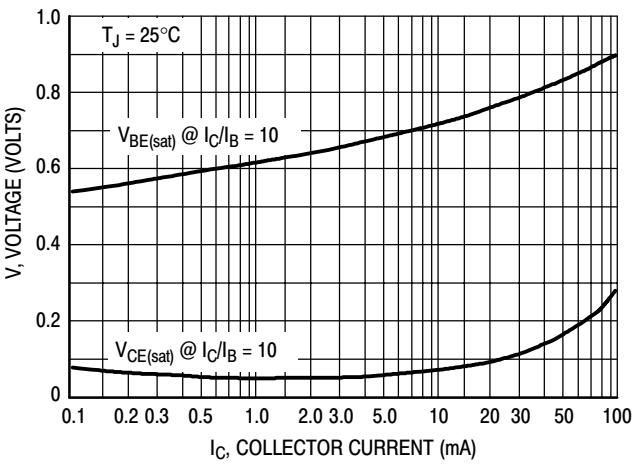


Figure 4. “On” Voltages

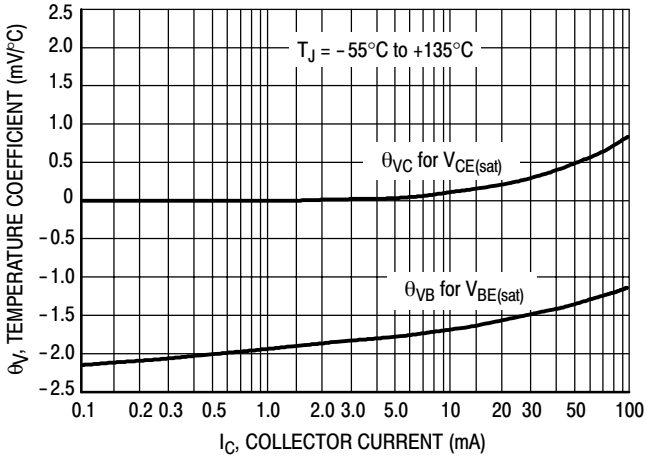
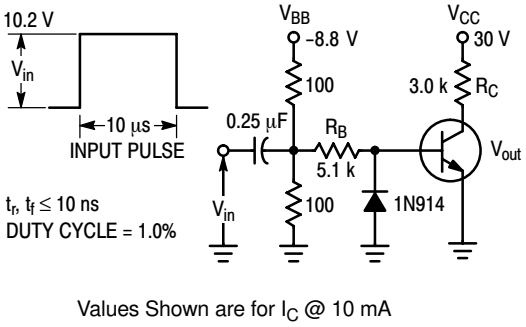


Figure 5. Temperature Coefficients



Values Shown are for I_C @ 10 mA

Figure 6. Switching Time Test Circuit

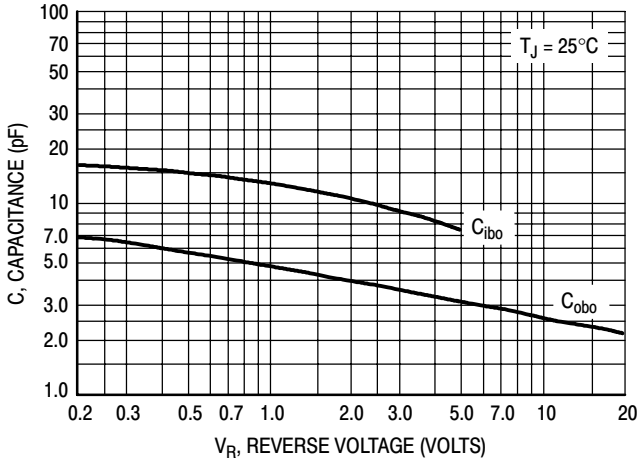


Figure 7. Capacitances

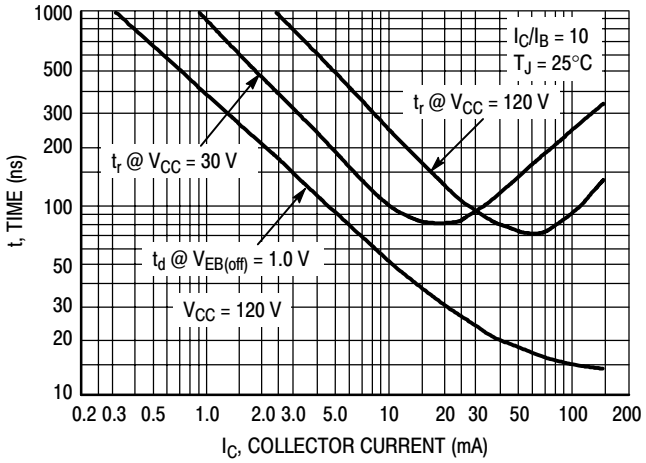


Figure 8. Turn−On Time

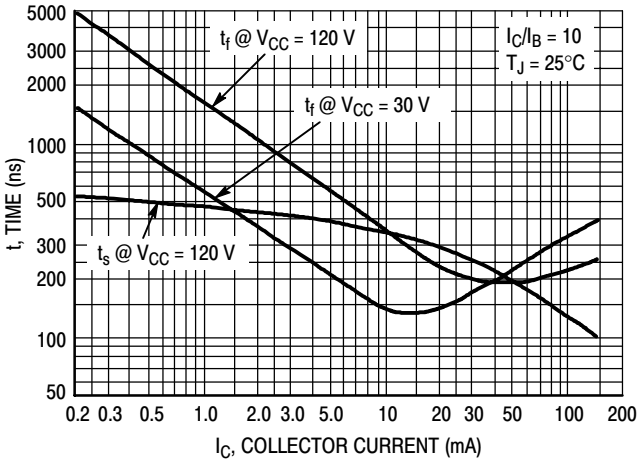


Figure 9. Turn−Off Time

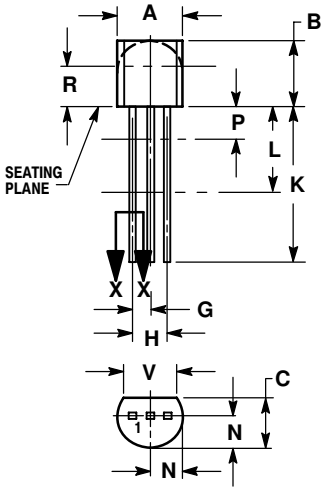
ORDERING INFORMATION

Device	Package	Shipping†
2N5550G	TO−92 (Pb−Free)	5000 Units / Bulk
2N5550RLRPG	TO−92 (Pb−Free)	2000 / Tape & Ammo Box
2N5551G	TO−92 (Pb−Free)	5000 Units / Bulk
2N5551RL1G	TO−92 (Pb−Free)	2000 / Tape & Reel
2N5551RLRAG	TO−92 (Pb−Free)	
2N5551RLRPG	TO−92 (Pb−Free)	2000 / Tape & Ammo Box
2N55551ZL1G	TO−92 (Pb−Free)	

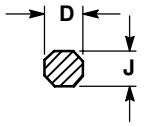
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

PACKAGE DIMENSIONS

TO–92 (TO–226)
CASE 29–11
ISSUE AM



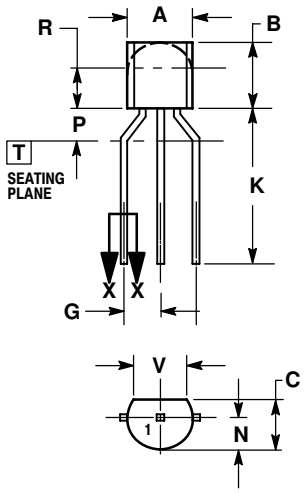
STRAIGHT LEAD
BULK PACK



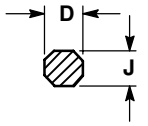
SECTION X–X

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---



BENT LEAD
TAPE & REEL
AMMO PACK



SECTION X–X

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	MILLIMETERS	
DIM	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.54
G	2.40	2.80
J	0.39	0.50
K	12.70	---
N	2.04	2.66
P	1.50	4.00
R	2.93	---
V	3.43	---

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
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Fax: 303–675–2176 or 800–344–3867 Toll Free USA/Canada
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