New Jersey Semi-Conductor Products, Inc.

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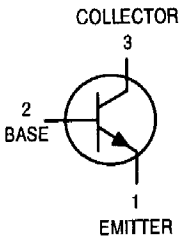
2N5550, 2N5551

Preferred Device

Amplifier Transistors

NPN Silicon



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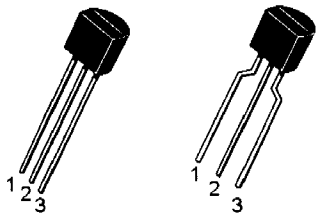


STRAIGHT LEAD
BULK PACK

BENT LEAD
TAPE & REEL
AMMO PACK

MAXIMUM RATINGS

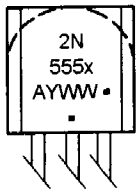
Rating	Symbol	Value	Unit
Collector – Emitter Voltage 2N5550 2N5551	V_{CEO}	 140 160	Vdc
Collector – Base Voltage 2N5550 2N5551	V_{CBO}	 160 180	Vdc
Emitter – Base Voltage	V_{EBO}	6.0	Vdc
Collector Current – Continuous	I_C	600	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	625 5.0	mW 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.

MARKING DIAGRAM



x = 0 or 1
A = Assembly Location
Y = Year
WW = Work Week

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (Note 1) (I_C = 1.0 mAdc, I_B = 0)	2N5550	$V_{(BR)CEO}$	140	–	Vdc
	2N5551		160	–	
Collector–Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	2N5550	$V_{(BR)CBO}$	160	–	Vdc
	2N5551		180	–	
Emitter–Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	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 (V_{EB} = 4.0 Vdc, I_C = 0)		I_{EBO}	–	50	nAdc
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		$V_{CE(sat)}$			Vdc
(I_C = 10 mAdc, I_B = 1.0 mAdc)	Both Types		–	0.15	
(I_C = 50 mAdc, I_B = 5.0 mAdc)	2N5550		–	0.25	
	2N5551		–	0.20	
Base–Emitter Saturation Voltage		$V_{BE(sat)}$			Vdc
(I_C = 10 mAdc, I_B = 1.0 mAdc)	Both Types		–	1.0	
(I_C = 50 mAdc, I_B = 5.0 mAdc)	2N5550		–	1.2	
	2N5551		–	1.0	
SMALL–SIGNAL CHARACTERISTICS					
Current–Gain — Bandwidth Product (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)		f_T	100	300	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)		C_{obo}	–	6.0	pF
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 (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)		h_{fe}	50	200	–
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%.