

## Plastic-Encapsulate Transistors

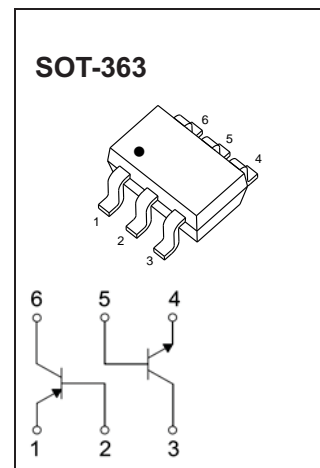
DUAL TRANSISTOR (PNP+NPN)

### FEATURES

- Epitaxial Planar Die Construction
- Ideal for low Power Amplification and Switching
- One 5401(PNP),one 5551(NPN)

### MAXIMUM RATINGS NPN 5551 (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector- Base Voltage	180	V
V <sub>CEO</sub>	Collector-Emitter Voltage	160	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	0.2	A
P <sub>C</sub>	Collector Power Dissipation	0.2	W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	625	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C



### ELECTRICAL CHARACTERISTICS NPN 5551 (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	180			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	160			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =120V, I <sub>E</sub> =0			0.05	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			0.05	μA
DC current gain	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA	80			
	h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA	100		300	
	h <sub>FE3</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =50mA	30			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			0.15	V
		I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.2	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			1	V
		I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			1	V
Output Capacitance	C <sub>obo</sub>	V <sub>CB</sub> = 10V, f = 1.0MHz, I <sub>E</sub> = 0			6.0	pF
Current Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA, f = 100MHz	100		300	MHz
Noise Figure	NF	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 200μA, R <sub>S</sub> = 1.0kΩ, f = 1.0kHz			8.0	dB

**MAXIMUM RATINGS PNP 5401 (T<sub>a</sub>=25°C unless otherwise noted)**

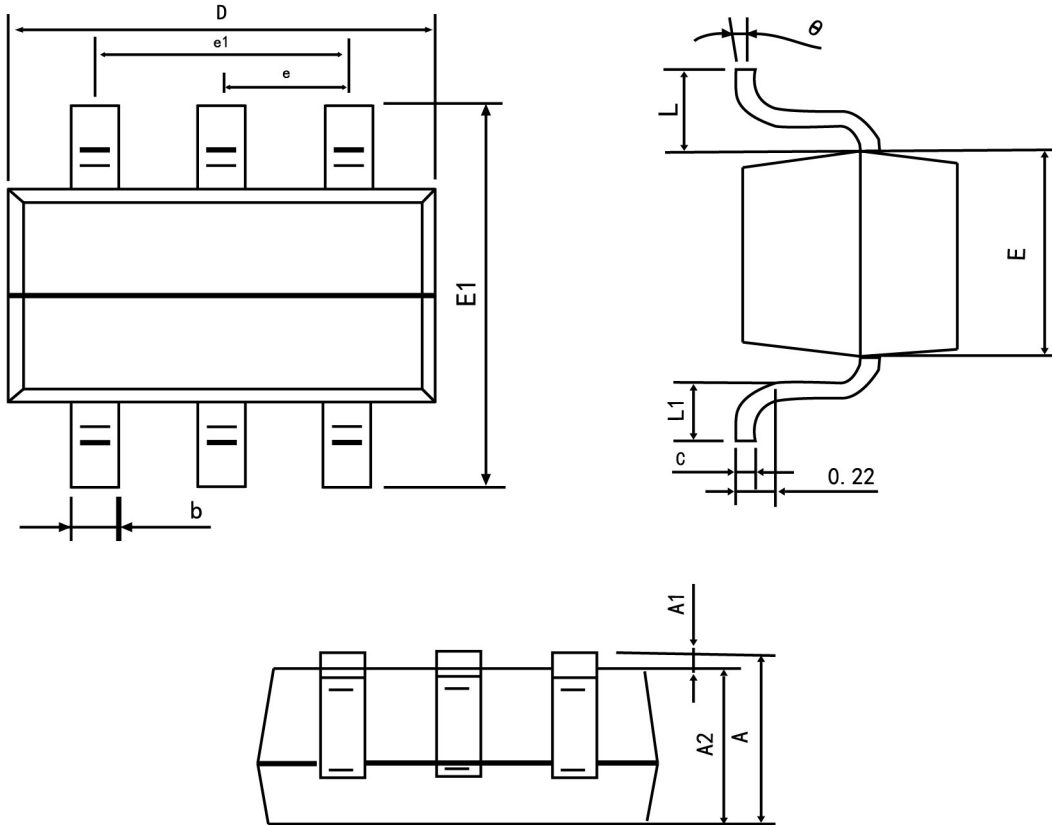
Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector- Base Voltage	-160	V
V <sub>CE0</sub>	Collector-Emitter Voltage	-150	V
V <sub>EB0</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current -Continuous	-0.2	A
P <sub>C</sub>	Collector Power Dissipation	0.2	W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	625	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

**ELECTRICAL CHARACTERISTICS PNP 5401 (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-100μA, I <sub>E</sub> =0	-160			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-150			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-120V, I <sub>E</sub> =0			-50	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-3V, I <sub>C</sub> =0			-50	nA
DC current gain	h <sub>FE1</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA	50			
	h <sub>FE2</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-10mA	100		300	
	h <sub>FE3</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-50mA	50			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =-1mA			-0.2	V
		I <sub>C</sub> =-50mA, I <sub>B</sub> =-5mA			-0.5	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =-1mA			-1	V
		I <sub>C</sub> =-50mA, I <sub>B</sub> =-5mA			-1	V
Output Capacitance	C <sub>obo</sub>	V <sub>CB</sub> = -10V, f = 1.0MHz, I <sub>E</sub> = 0			6.0	pF
Current Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -10mA, f = 100MHz	100		300	MHz
Noise Figure	NF	V <sub>CE</sub> =-5.0V, I <sub>C</sub> = -200μA, R <sub>S</sub> = 10 Ω, f = 1.0kHz			8.0	dB



## SOT-363-Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	0°	8°