

TO-92 Plastic-Encapsulate Transistors

2N5551 TRANSISTOR (NPN)

FEATURES

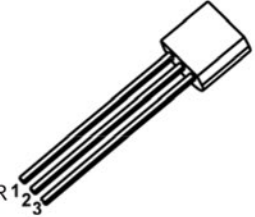
- General Purpose Switching Application

TO – 92

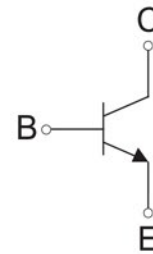
1. EMITTER

2. BASE

3. COLLECTOR



Equivalent Circuit



MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage	160	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	0.6	A
P_C	Collector Power Dissipation	625	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	200	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

$T_a = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C = 1\text{mA}, I_B = 0$	160			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB} = 120\text{V}, I_E = 0$			50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			50	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	80			
	$h_{FE(2)}$	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	80		300	
	$h_{FE(3)}$	$V_{CE} = 5\text{V}, I_C = 50\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat) (1)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.15	V
	$V_{CE(sat) (2)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$			0.2	V
Base-emitter saturation voltage	$V_{BE(sat) (1)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			1	V
	$V_{BE(sat) (2)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$			1	V
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$			6	pF
Emitter input capacitance	C_{ib}	$V_{BE} = 0.5\text{V}, I_C = 0, f = 1\text{MHz}$			20	pF
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	100		300	MHz

*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2.0\%$.

CLASSIFICATION OF $h_{FE(2)}$

RANK				
	A	B	C	
RANGE	80-100	100-150	150-200	200-300

