SILICON N-P-N HIGH-VOLTAGE TRANSISTORS

N-P-N high-voltage small-signal transistors for general purposes and especially telephony applications and encapsulated in a TO-92 envelope.

P-N-P complements are 2N5400 and 2N5401.

QUICK REFERENCE DATA

			2N5550	2N5551	
Collector-base voltage (open emitter)	V_{CBO}	max.	160	180	V
Collector-emitter voltage (open base)	V_{CEO}	max.	140	160	V
Collector current	I_C	max.	600	600	mA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.	500	500	mW
Junction temperature	T_j	max.	150	150	°C
Collector-emitter saturation voltage I_C = 50 mA; I_B = 5 mA	V_{CEsat}	max.	0,25	0,20	V
D.C. current gain I_C = 10 mA; V_{CE} = 5 V	h_{FE}	min.	60	80	

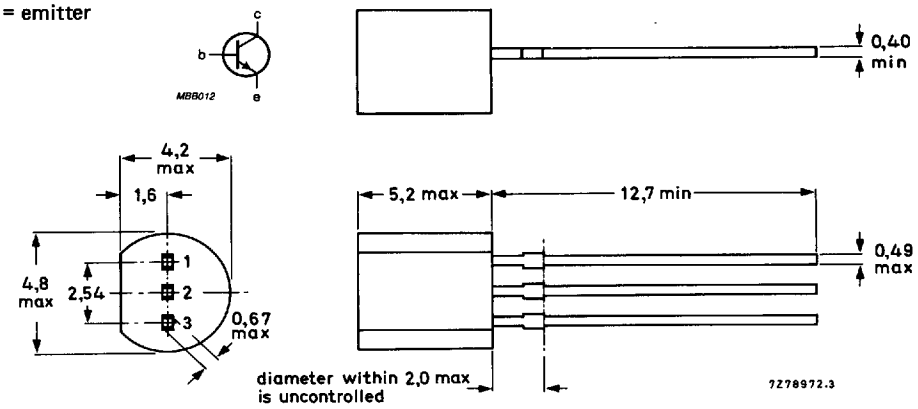
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

1 = collector
2 = base
3 = emitter



Capability approved to CECC NECC-C-002

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			2N5550	2N5551	
Collector-base voltage (open emitter)	V_{CBO}	max.	160	180	V
Collector-emitter voltage (open base)	V_{CEO}	max.	140	160	V
Emitter-base voltage (open collector)	V_{EBO}	max.	6		V
Collector current	I_C	max.	600		mA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.	500		mW
Junction temperature	T_j	max.	150		°C
Storage temperature range	T_{stg}		−65 to + 150		°C

THERMAL RESISTANCE

From junction to ambient	$R_{th\ j\text{-}a}$	max.	250		K/W

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified

			2N5550	2N5551	
Collector cut-off current					
I_E = 0; V_{CB} = 100 V	I_{CBO}	max.	100		nA
I_E = 0; V_{CB} = 120 V	I_{CBO}	max.		50	nA
I_E = 0; V_{CB} = 100 V; T_{amb} = 100 °C	I_{CBO}	max.	100		μA
I_E = 0; V_{CB} = 120 V; T_{amb} = 100 °C	I_{CBO}	max.		50	μA
Emitter cut-off current					
I_C = 0; V_{EB} = 4,0 V	I_{EBO}	max.	50	50	nA
Breakdown voltages					
I_C = 1,0 mA; I_B = 0	$V_{(BR)CEO}$	min.	140	160	V
I_C = 100 μA; I_E = 0	$V_{(BR)CBO}$	min.	160	180	V
I_C = 0; I_E = 10 μA	$V_{(BR)EBO}$	min.	6,0	6,0	V
Saturation voltages					
I_C = 10 mA; I_B = 1,0 mA	V_{CEsat}	max.	0,15	0,15	V
	V_{BEsat}	max.	1,0	1,0	V
I_C = 50 mA; I_B = 5,0 mA	V_{CEsat}	max.	0,25	0,20	V
	V_{BEsat}	max.	1,2	1,0	V
D.C. current gain					
I_C = 1,0 mA; V_{CE} = 5 V	h_{FE}	min.	60	80	
I_C = 10 mA; V_{CE} = 5 V	h_{FE}	min.	60	80	
		max.	250	250	
I_C = 50 mA; V_{CE} = 5 V	h_{FE}	min.	20	30	
Small-signal current gain					
I_C = 1,0 mA; V_{CE} = 10 V; f = 1 kHz	h_{fe}	min.	50	50	
		max.	200	200	
Output capacitance at f = 1 MHz					
I_E = 0; V_{CB} = 10 V	C_o	max.	6	6	pF
Input capacitance at f = 1 MHz					
I_C = 0; V_{EB} = 0,5 V	C_i	max.	30	30	pF

			2N5550	2N5551	
Transition frequency at f = 100 MHz I_C = 10 mA; V_{CE} = 10 V	f_T	min. max.	100 300	100 300	MHz MHz
Noise figure at R_S = 1 kΩ I_C = 250 μA; V_{CE} = 5 V; f = 10 Hz to 15,7 kHz	F	max.	10	8	dB