NEC
ELECTRON DEVICE

PNP SILICON TRANSISTOR

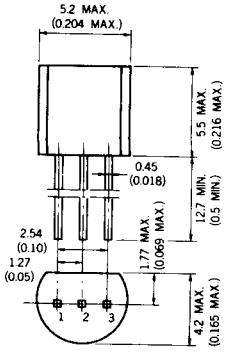
2SA1153

DESCRIPTION The 2SA1153 is designed for general purpose amplifier and high speed switching applications.

FEATURES

- High Frequency Current Gain.
- High Speed Switching.
- Small Output Capacitance.
- Low Collector Saturation Voltage.
- Complementary to the NEC 2SC2720 NPN transistor.

PACKAGE DIMENSIONS
in millimeters (inches)



1. EMITTER
2. BASE
3. COLLECTOR

EIAJ : SC-43B
JEDEC : TO-92
IEC : PA33

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Maximum Temperatures
- Storage Temperature . . . . . −55 to +150 °C
- Junction Temperature . . . . . 150 °C Maximum

Maximum Power Dissipation (T_a = 25 °C)
- Total Power Dissipation . . . . . 600 mW

Maximum Voltages and Current (T_a = 25 °C)
- V_{CBO} Collector to Base Voltage . . . . . −60 V
- V_{CEO} Collector to Emitter Voltage . . . . . −40 V
- V_{EBO} Emitter to Base Voltage . . . . . −5.0 V
- I_C Collector Current (DC) . . . . . −500 mA

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
t_{on}	Turn-on Time			35	ns	See Test Circuit.
t_{off}	Turn off Time			255	ns	See Test Circuit.
t_{stg}	Storage Time			225	ns	See Test Circuit.
f_T	Gain Bandwidth Product	150	400		MHz	V_{CE} = −10 V, I_E = 20 mA
C_{ob}	Output Capacitance		5.0	8.0	pF	V_{CB} = −10 V, I_E = 0, f = 1 MHz
h_{FE1}*	DC Current Gain	50	140	300	−	V_{CE} = −2.0 V, I_C = −150 mA
h_{FE2}*	DC Current Gain	20	50		−	V_{CE} = −2.0 V, I_C = −500 mA
$V_{CE(sat)}$*	Collector Saturation Voltage		−0.45	−0.75	V	I_C = −500 mA, I_B = −50 mA
$V_{BE(sat)}$*	Base Saturation Voltage		−1.0	−1.3	V	I_C = −500 mA, I_B = −50 mA
I_{CBO}	Collector Cutoff Current			−0.1	μA	V_{CB} = −40 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			−0.1	μA	V_{EB} = −4.0 V, I_C = 0

*Pulsed PW ≤ 350 μs, Duty Cycle ≤ 2 %