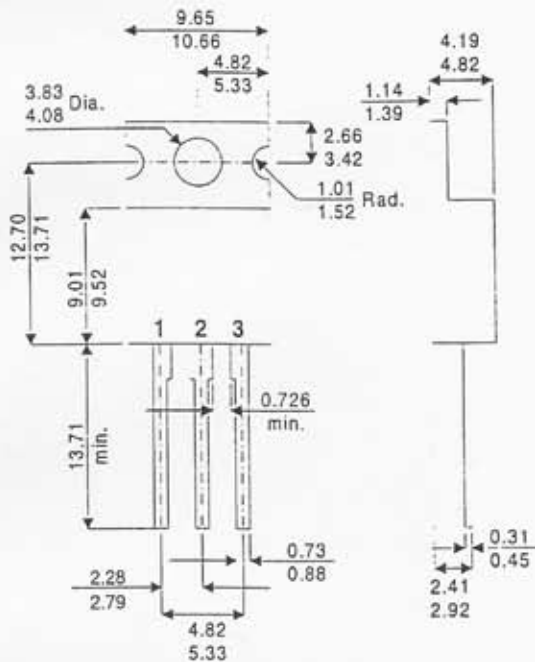


MECHANICAL DATA
Dimensions in mm



**SILICON EPITAXIAL BASE
PNP POWER TRANSISTORS**

PNP Transistors in a plastic TO-220 package.

With their NPN complements BD949 ; 951 ; 953 and 955 they are intended for use in a wide range of power amplifiers and for switching applications.

TO-220AB TO220 Plastic Package

Pin 1 – Base Pin 2 – Collector Pin 3 – Emitter

Collector connected to Mounting Base.

ABSOLUTE MAXIMUM RATINGS

($T_{case} = 25^{\circ}C$ unless otherwise stated)

		BD950	BD952	BD954	BD956
V_{CBO}	Collector – Base Voltage	-60V	-80V	-100V	-120V
V_{CEO}	Collector – Emitter Voltage	-60V	-80V	-100V	-120V
V_{EBO}	Emitter – Base Voltage		-5V		
I_C	Collector Current		-5A		
I_{CM}	Peak Collector Current		-8A		
P_{tot}	Total Power Dissipation		40W		
T_{stg}	Storage Temperature Range		-65 to 150°C		
T_J	Maximum Junction Temperature		150°C		

$T_{amb} \leq 25^{\circ}C$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
V_{BE}^*	Base - Emitter Voltage ¹	$I_C = -2A$	$V_{CE} = -4V$		1.4	V
$V_{CE(sat)}^*$	Collector - Emitter Saturation Voltage	$I_C = -2A$	$I_B = -0.2A$		1	V
I_{CBO}	Collector Cut-off Current	$I_E = 0$	$V_{CB} = V_{CBO(MAX)}$		0.1	mA
		$I_E = 0$	$V_{CB} = \frac{1}{2}V_{CBO(MAX)}$		2	
		$I_B = 0$	$V_{CE} = \frac{1}{2}V_{CEO(MAX)}$		0.5	
I_{EBO}	Emitter Cut-off Current	$I_C = 0$	$V_{EB} = -5V$		1	mA
h_{FE}^*	DC Current Gain	$I_C = -0.5A$	$V_{CE} = -4V$	40		—
		$I_C = -2A$	$V_{CE} = -4V$	20		
f_T	Transition Frequency	$I_C = -0.5A$	$V_{CE} = -4V$	3		MHz
t_{ON}	Turn-on Time	$I_{C(ON)} = 1A$			0.1	μs
t_{OFF}	Turn-off Time	$-I_{B(ON)} = I_{B(OFF)} = 0.1A$			0.4	

* Pulse Test: $t_p \leq 300\mu s$, $\delta < 2\%$

Note 1 V_{EB} decreases by about 2.3mV/K with increasing temperature.

THERMAL CHARACTERISTICS

$R_{\theta J-MB}$	Thermal Resistance Junction to Mounting Base		3.12	K/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient		70	K/W

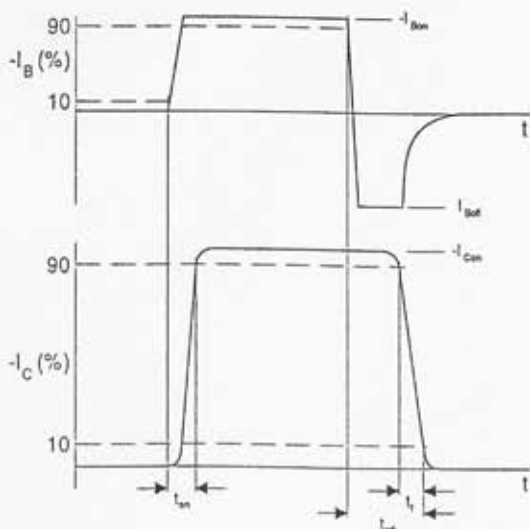
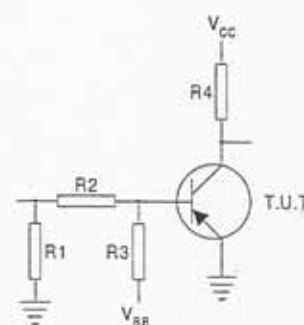
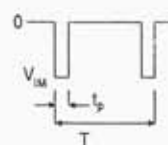


Fig. 1 Switching times waveforms.



$V_{IM} = -30V$
 $V_{CC} = -20V$
 $V_{BB} = 3.5V$
 $R1 = 82\Omega$
 $R2 = 150\Omega$
 $R3 = 39\Omega$
 $R4 = 20\Omega$
 $t_r = t_f \leq 15ns$
 $t_p = 10\mu s$
 $T = 500\mu s$

Fig. 2 Switching times test circuit.

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