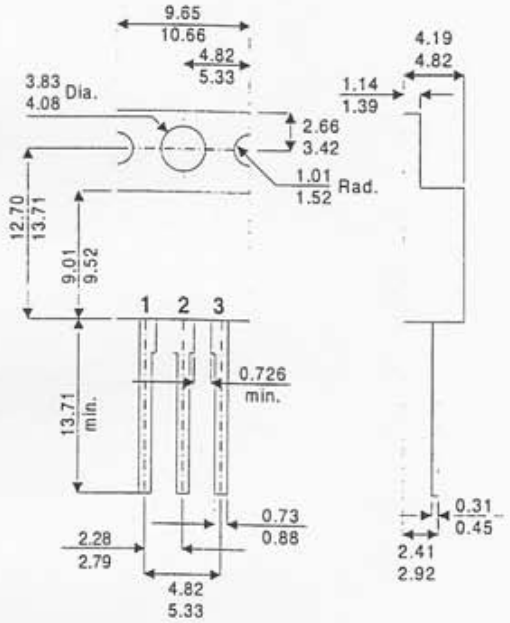
MAGNA TEC

BD949 BD951 BD953 BD955

MECHANICAL DATA
Dimensions in mm



SILICON EPITAXIAL BASE NPN POWER TRANSISTORS

NPN Transistors in a plastic TO–220 package.

With their PNP complements BD950 ; 952 ; 954 and 956 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°C unless otherwise stated)

			BD949	BD951	BD953	BD955
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	$T_{amb} \leq 25°C$	40W			
T_{stg}	Storage Temperature Range		-65 to 150°C			
T_J	Maximum Junction Temperature		150°C			

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ELECTRICAL CHARACTERISTICS (T_{case} = 25°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	$V_{CB} = ½V_{CBO(MAX)}$, T_J = 150°C			2	mA
		I_B = 0	$V_{CE} = ½V_{CEO(MAX)}$			0.5	mA
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, f = 1MHz	V_{CE} = 4V	3			MHz
t_{ON}	Turn-on Time	$I_{C(ON)}$ = 1A, $I_{B(ON)} = -I_{B(OFF)}$ = 0.1A			0.3		µs
t_{OFF}	Turn-off Time				1.5		µs

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

Note 1 V_{EB} decreases by abount 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

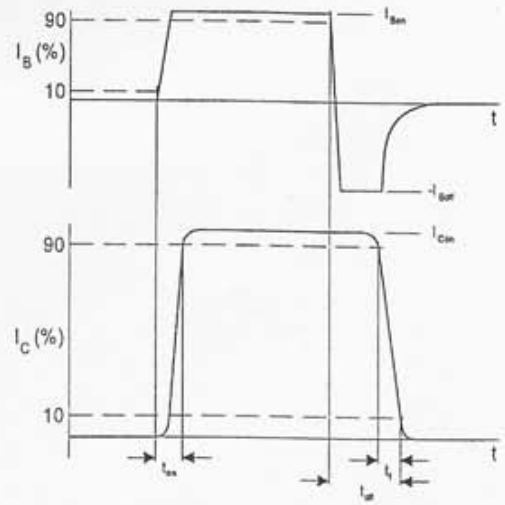
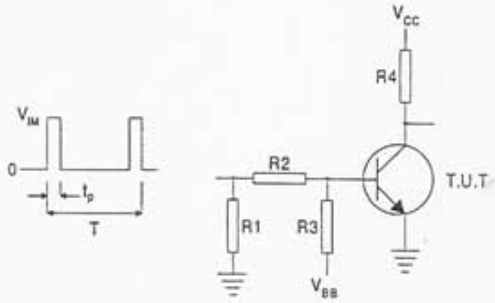


Fig. 1 Switching times waveforms.



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

Fig. 2 Switching times test circuit.