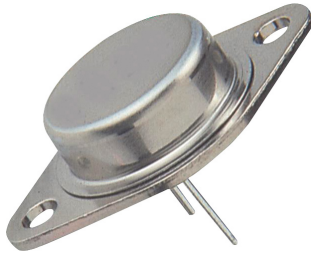


# Bipolar Transistor

multicomp **PRO**

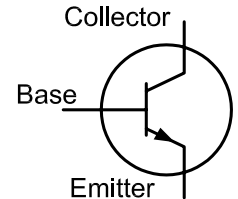


## Description:

High Power TO-3, NPN, Silicon Transistor designed for use in industrial military power amplifier and switching circuit applications.

RoHS  
Compliant

NPN



## Features:

- Low Collector Saturation Voltage  $V_{CE} = 1V$  (Max.) @  $I_C = 10A$
- High DC Current Gain  $h_{FE} = 30$  to  $120$  @  $I_C = 20mA$

## Absolute Maximum Ratings:

Characteristic	Symbol	Rating
Collector - Base Voltage	$V_{CBO}$	180V
Collector - Emitter Voltage	$V_{CEO}$	150V
Emitter-Base Voltage	$V_{EBO}$	6V
Continuous Collector Current	$I_C$	25A
Base Current	$I_B$	10A
Total Device Dissipation ( $T_C = +25^\circ C$ ) Derate above $25^\circ C$	$P_D$	200W 1.14mW/ $^\circ C$
Operating Junction Temperature Range	$T_J$	$-65^\circ C$ to $+200^\circ C$
Storage Temperature Range	$T_{STG}$	$-65^\circ C$ to $+200^\circ C$

## Electrical Characteristics ( $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
<b>OFF Characteristics</b>					
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0$ (Note 1)	150	-	V
Collector Cut-off Current	$I_{CEX}$	$V_{CE} = 150V, V_{EB(off)} = 1.5V$	-	10	$\mu A$
	$I_{CBO}$	$V_{CB} = 180V, I_E = 0$	-	10	$\mu A$
	$I_{CEO}$	$V_{CB} = 75V, I_B = 0$	-	50	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 6V, I_C = 0$	-	100	$\mu A$

## ON Characteristics (Note 1)

DC Current Gain	$h_{FE}$	$V_{CE} = 2V, I_C = 0.5A$	50	-	-
		$V_{CE} = 2V, I_C = 10A$	30	120	-
		$V_{CE} = 2V, I_C = 25A$	12	-	-
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10A, I_B = 1A$	-	1	V
		$I_C = 25A, I_B = 2.5A$	-	1.8	
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10A, I_B = 1A$	-	1.8	V
		$I_C = 25A, I_B = 2.5A$	-	2.5	

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# Bipolar Transistor

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Base - Emitter on Voltage	$V_{BE(on)}$	$I_C = 10A, V_{CE} = 2V$	-	1.8	V

### Small-Signal Characteristics

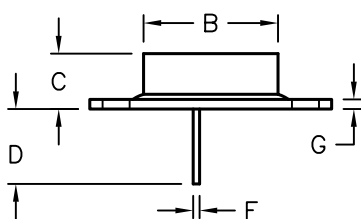
Current Gain-Bandwidth Product (Note 2)	$f_T$	$V_{CB} = 10V, I_C = 1A, f = 1MHz$	40	-	MHz
Output Capacitance	$C_{obo}$	$V_{CB} = 10V, I_E = 0, f = 0.1MHz$	-	300	pF

### Switching Characteristics

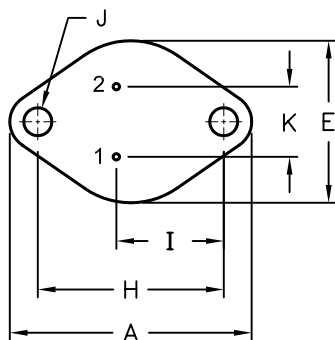
Rise Time	$t_r$	$V_{CC} = 80V, I_C = 10A, I_{B1} = 1A$	-	0.3	$\mu s$
Storage Time	$t_s$	$V_{CC} = 80V, I_C = 10A, I_{B1} = I_{B2} = 1A$	-	1	
Fall Time	$t_f$		-	0.25	

Note 1: Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$

Note 2:  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity



Pin 1 = Base  
Pin 2 = Emitter  
Collector (Case)



Dim.	Min.	Max.
A	38.75	39.96
B	19.28	22.23
C	7.96	9.23
D	11.18	12.19
E	25.2	26.67
F	0.92	1.09
G	1.38	1.62
H	29.9	30.4
I	16.64	17.3
J	3.88	4.36
K	10.67	11.18

Dimensions : Millimetres

### Part Number Table

Description	Part Number
High Power Transistor, TO-3, NPN, 25A, 150V	2N6341

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