

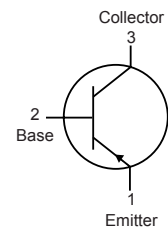
High Power Transistor



RoHS
Compliant



NPN



Features:

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

Description:

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

Maximum Ratings:

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

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High Power Transistor



Electrical Characteristics ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
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OFF Characteristics

Collector-Emitter Breakdown Voltage (Note 1)	$V_{(BR)CEO}$	$I_C = 50\text{mA}, I_B = 0$	150	-	V
Collector Cut-Off Current	I_{CEX}	$V_{CE} = 150\text{V}, V_{EB(off)} = 1.5\text{V}$	-	10	μA
	I_{CBO}	$V_{CB} = 180\text{V}, I_E = 0$		50	
	I_{CEO}	$V_{CB} = 75\text{V}, I_B = 0$		100	
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$			

ON Characteristics (Note 1)

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

Small Signal Characteristics

Current Gain-Bandwidth Product (Note 2)	f_T	$V_{CE} = 10\text{V}, I_C = 1\text{A}, f = 10\text{MHz}$	40	-	MHz
Output Capacitance	C_{Ob0}	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$	-	300	pF

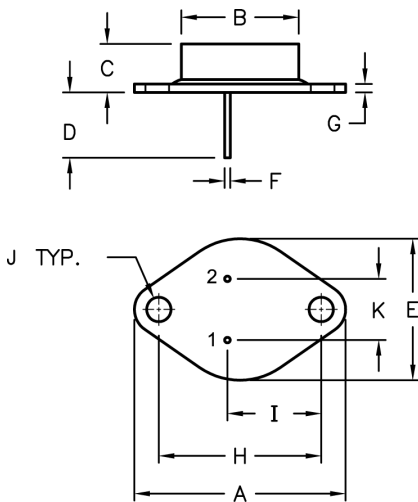
Switching Characteristics

Rise Time	t_r	$V_{CC} = 30\text{V}, I_C = 10\text{A}, I_{B1} = 1\text{A}$	-	1	μs
Storage Time	t_s	$V_{CC} = 30\text{V}, I_C = 10\text{A}, I_{B1} = I_{B2} = 1\text{A}$		2	
Fall Time	t_f			1	

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

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

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Pin Configuration:

- 1. Base
- 2. Emitter
- Collector (Case)

Dimensions	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
Transistor, NPN, 25A, 150V, TO-3	2N6341

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