

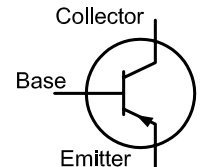


Description:

High Power TO-3, PNP Transistor

**RoHS
Compliant**

PNP



Features:

- Low Collector Emitter Saturation Voltage : $V_{CE(sat)}$ @ $I_C = 15A$
- High Current Gain-Bandwidth Product : $f_T = 4MHz$ (Min.) @ $I_C = 1A$
- Low Leakage Current $I_{CEX} = 1mA$ (Max.) at Rated Voltage
- Excellent DC Current Gain $h_{FE} = 20$ (Min.) @ $I_C = 10A$

Absolute Maximum Ratings:

Characteristic	Symbol	Rating
Collector - Base Voltage	V_{CBO}	80V
Collector - Emitter Voltage	V_{CEO}	80V
Emitter - Base Voltage	V_{EBO}	5V
Continuous Collector Current	I_C	25A
Base Current	I_B	7.5A
Total Device Dissipation ($T_C = +25^\circ C$) Derate above $25^\circ C$	P_D	200W 1.15mW/ $^\circ C$
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
OFF Characteristics					
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 200mA, I_B = 0$ (Note 1)	80	-	V
Collector Cut-off Current	I_{CEX}	$V_{CB} = 80V, V_{EB(off)} = 1.5V$	-	1	mA
	I_{CBO}	$V_{CE} = 80V, I_E = 0$	-	1	mA
	I_{CEO}	$V_{CB} = 40V, I_B = 0$	-	2	mA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$	-	1	mA
ON Characteristics (Note 1)					
DC Current Gain	h_{FE}	$V_{CE} = 4V, I_C = 3A$	35	-	-
		$V_{CE} = 4V, I_C = 10A$	20	100	-
		$V_{CE} = 4V, I_C = 25A$	4	-	-
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 15A, I_B = 1.5A$	-	1	V
		$I_C = 25A, I_B = 6.25A$	-	4	

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 25A, I_B = 6.25A$	-	2.5	V
Base - Emitter Saturation Voltage	$V_{BE(on)}$	$I_C = 10A, V_{CE} = 4V$	-	1.5	V

Small-Signal Characteristics

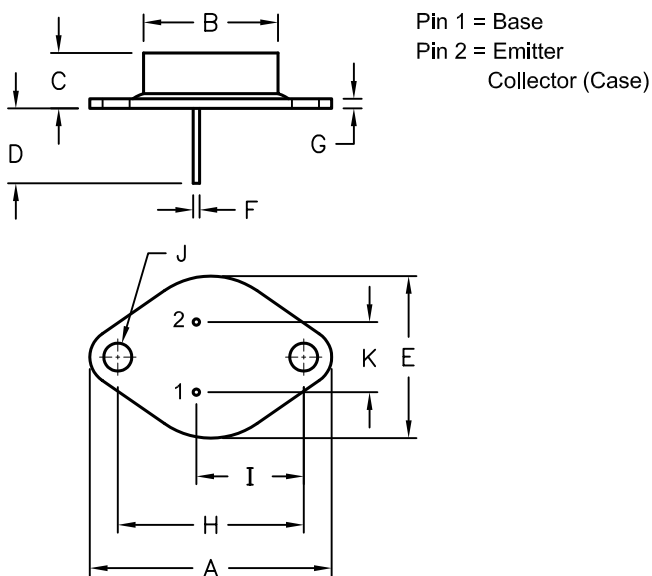
Current Gain-Bandwidth Product (Note 2)	f_T	$V_{CE} = 10V, I_C = 1A, f = 1MHz$	4	-	MHz
Output Capacitance	C_{obo}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	-	1000	pF
Small-Signal Current Gain	h_{fe}	$V_{CE} = 4V, I_C = 3A, f = 1kHz$	20	-	-

Switching Characteristics

Rise Time	t_r	$V_{CC} = 30V, I_C = 10A, I_{B1} = I_{B2} = 1A$	-	0.7	μs
Storage Time	t_s	$V_{CC} = 30V, I_C = 150mA, I_{B1} = I_{B2} = 15mA$	-	1	
Fall Time	t_f		-	0.8	

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



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, PNP, 25A, 80V	2N5884

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