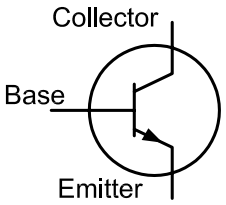
Bipolar Transistor

multicomp PRO

RoHS Compliant

NPN



Description:

High Power TO-3, NPN Transistor

Features:

- Low Collector Emitter Saturation Voltage : $V_{CE(sat)1V}$ 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°C) Derate above 25°C	P_D	200W 1.15mW/°C
Operating Junction Temperature Range	T_J	-65°C to +200°C
Storage Temperature Range	T_{STG}	-65°C to +200°C

Electrical Characteristics (T_A = 25°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	

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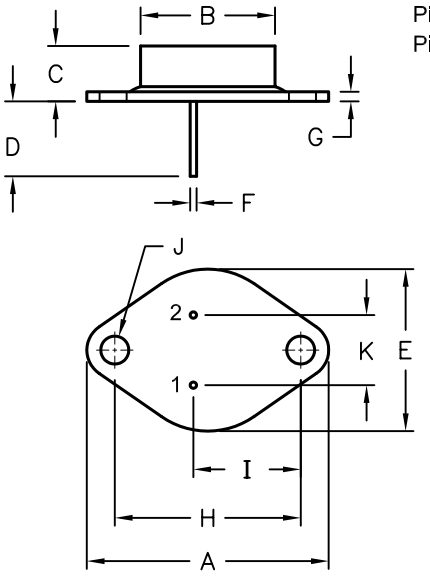
Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 25A, I_B = 6.25A	-	2.5	V
Base - Emitter Saturation Voltage	$V_{BE(on)}$	I_C = 10A, V_{CE} = 4V	-	1.5	V
Small-Signal Characteristics					
Current Gain-Bandwidth Product (Note 2)	f_T	V_{CE} = 10V, I_C = 1A, f = 1MHz	4	-	MHz
Output Capacitance	C_{obo}	V_{CB} = 10V, I_E = 0, f = 1MHz	-	500	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 = 10A, I_{B1} = I_{B2} = 1A	-	1	
Fall Time	t_f		-	0.8	

Note 1: Pulse Test : Pulse Width ≦ 300µs, Duty Cycle ≦ 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, 80V	2N5886