

Silicon NPN Power Transistor

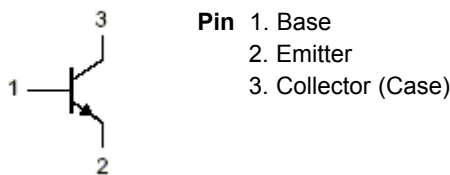


Features:

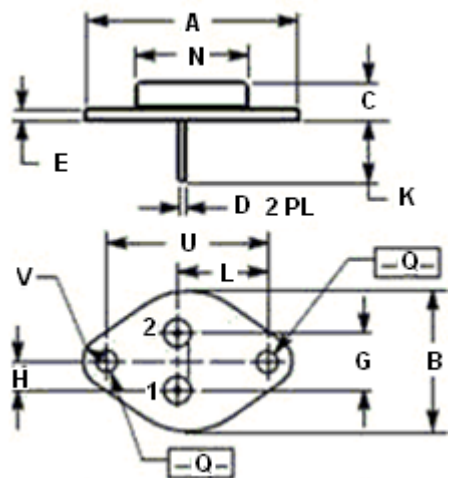
- Excellent safe operating area
- High DC current gain- $h_{FE} = 15$ (Min.) at $I_C = 8$ A
- Low saturation voltage : $V_{CE(sat)} = 1.4$ V (Max.) at $I_C = 8$ A

Applications:

Designed for high power audio ,disk head positioners and other linear applications, which can also be used in power switching circuits such as relay or solenoid drivers, DC-DC converters or inverters



TO-3



Dimension	mm	
	Minimum	Maximum
A	39	
B	25.3	26.67
C	7.8	8.3
D	0.9	1.1
E	1.4	1.6
G	10.92	
H	5.46	
K	11.4	13.5
L	16.75	17.5
N	19.4	19.62
Q	4	4.2
U	30	30.2
V	4.3	4.5

Dimensions : Millimetres



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Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - base voltage	160	V
V_{CEX}	Collector - emitter voltage	160	V
V_{CEO}	Collector - emitter voltage	140	V
V_{EBO}	Emitter - base voltage	7	V
I_C	Collector current - continuous	16	A
I_{CP}	Collector current - peak	30	A
I_B	Base current - continuous	4	A
I_{BP}	Base current - peak	15	A
P_C	Collector power dissipation at $T_C = 25^\circ\text{C}$	150	W
T_J	Junction temperature	200	$^\circ\text{C}$
T_{stg}	Storage temperature	-65 to 200	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Maximum	Unit
$R_{th\ j-c}$	Thermal resistance junction to case	1.17	$^\circ\text{C/W}$

Electrical Characteristics ($T_C = 25^\circ\text{C}$ Unless Otherwise Specified)

Symbol	Parameter	Conditions	Minimum	Maximum	Unit
$V_{CEO(SUS)}$	Collector - emitter sustaining voltage	$I_C = 200\text{ mA}; I_B = 0$	140	-	V
$V_{CEX(SUS)}$	Collector - emitter sustaining voltage	$I_C = 100\text{ mA}; V_{BE(off)} = 1.5\text{ V}; R_{BE} = 100\ \Omega$	160	-	V
$V_{CER(SUS)}$	Collector - emitter sustaining voltage	$I_C = 200\text{ mA}; R_{BE} = 100\ \Omega$	150	-	V
$V_{CE(sat)-1}$	Collector - emitter sustaining voltage	$I_C = 8\text{ A}; I_B = 0.8\text{ A}$	-	1.4	V
$V_{CE(sat)-2}$	Collector - emitter sustaining voltage	$I_C = 16\text{ A}; I_B = 3.2\text{ A}$	-	4	V
$V_{BE(on)}$	Base - emitter on voltage	$I_C = 8\text{ A}; V_{CE} = 4\text{ V}$	-	2.2	V
I_{CEO}	Collector cut off current	$V_{CE} = 120\text{ V}; I_B = 0$	-	10	mA
I_{CEX}	Collector cut off current	$V_{CE} = 140\text{ V}; V_{BE(off)} = 1.5\text{ V}$ $V_{CE} = 140\text{ V}; V_{BE(off)} = 1.5\text{ V}, T_C = 150^\circ\text{C}$	-	2 10	mA
I_{EBO}	Emitter cut off current	$V_{EB} = 7\text{ V}; I_C = 0$	-	5	mA
h_{FE-1}	DC current gain	$I_C = 8\text{ A}; V_{CE} = 4\text{ V}$	15	80	-
h_{FE-3}	DC current gain	$I_C = 16\text{ A}; V_{CE} = 4\text{ V}$	5	-	-
$I_{s/b}$	Second breakdown collector current with base forward biased	$V_{CE} = 100\text{ V}, t = 1\text{ s}, \text{Non repetitive}$	1.5	-	A

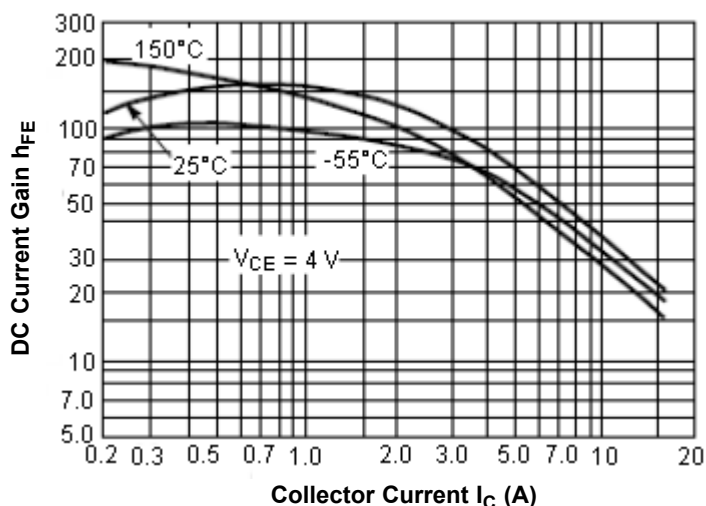
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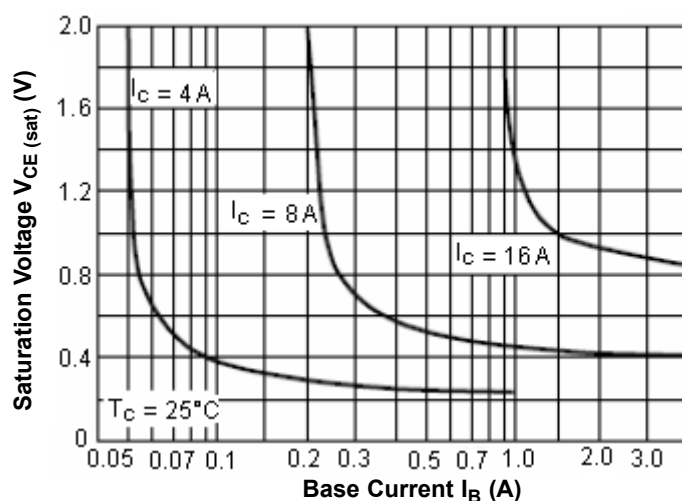
h_{FE-1} Classifications

R15	R20	R25	R25	R35	R40	R45	R50
15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55
R55	R60	R65	R70	R75	-	-	-
55-60	60-65	65-70	70-75	75-80	-	-	-

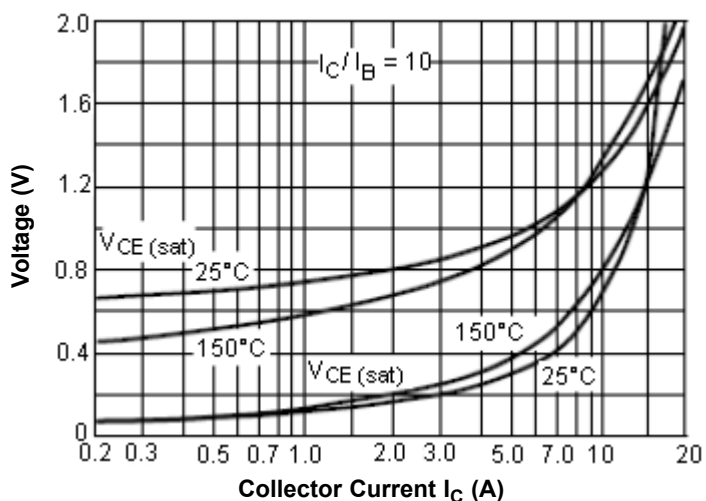
$h_{FE} - I_C$ Characteristics



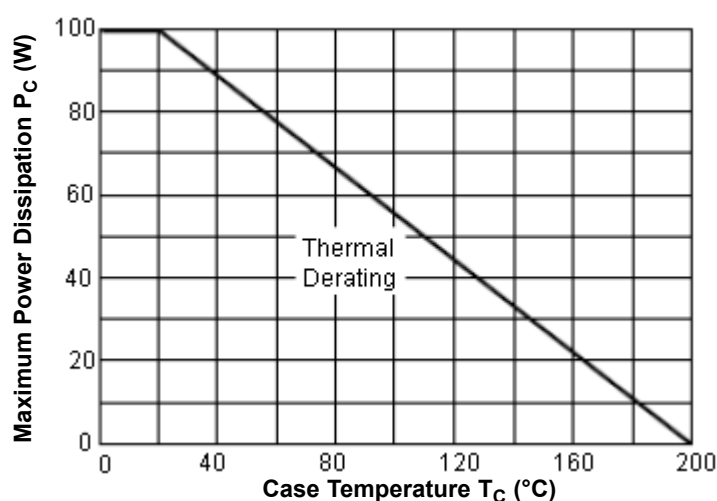
$V_{CE(sat)} - I_B$ Characteristics



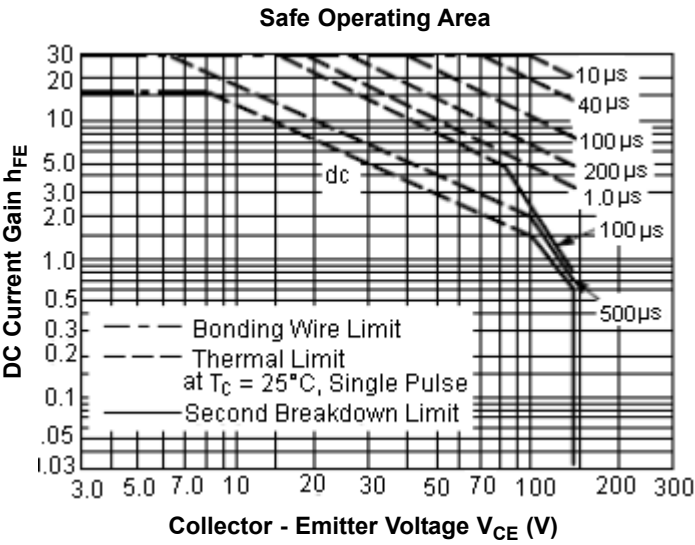
"On" Voltages



Power Derating



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Part Number Table

Description	Part Number
Silicon NPN Power Transistor	2N3773

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