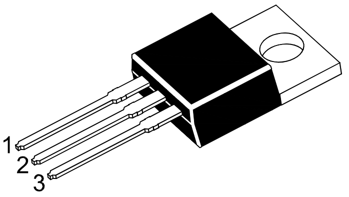
ST TIP31C

NPN Silicon Epitaxial Planar Transistor

for power switching and amplifier applications



1.Base 2.Collector 3.Emitter

TO-220 Plastic Package

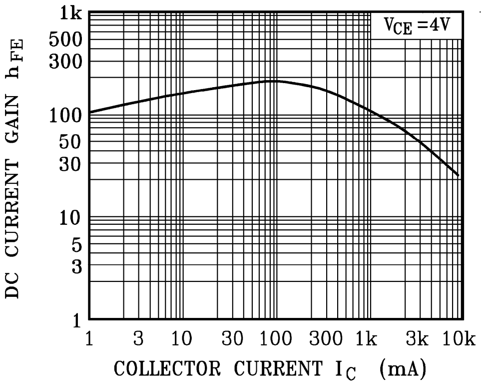
Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	100	V
Collector Emitter Voltage	V_{CEO}	100	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	3	A
Collector Current (Pulse)	I_{CP}	5	A
Base Current	I_B	1	A
Power Dissipation (T_a = 25 °C)	P_{tot}	2	W
Power Dissipation (T_c = 25 °C)	P_{tot}	40	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_s	- 65 to + 150	°C

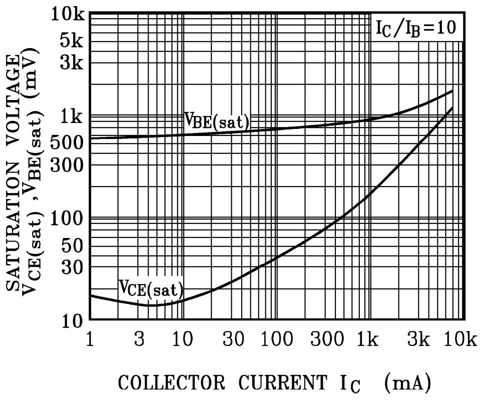
Characteristics at T_a = 25 °C

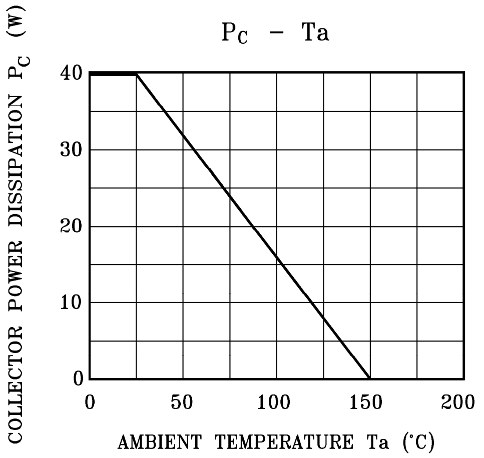
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = 4 V, I_C = 1 A at V_{CE} = 4 V, I_C = 3 A	 h_{FE} h_{FE}	 25 10	 - 50	 - -
Collector Emitter Cutoff Current at V_{CE} = 100 V	I_{CES}	-	0.2	mA
Collector Emitter Cutoff Current at V_{CE} = 60 V	I_{CEO}	-	0.3	mA
Emitter Base Cutoff Current at V_{EB} = 5 V	I_{EBO}	-	1	mA
Collector Emitter Sustaining Voltage at I_C = 30 mA	$V_{CEO(sus)}$	100	-	V
Collector Emitter Saturation Voltage at I_C = 3 A, I_B = 375 mA	$V_{CE(sat)}$	-	1.2	V
Base Emitter On Voltage at V_{CE} = 4 V, I_C = 3 A	$V_{BE(on)}$	-	1.8	V
Transition Frequency at V_{CE} = 10 V, I_C = 500 mA, f = 1 MHz	f_T	3	-	MHz

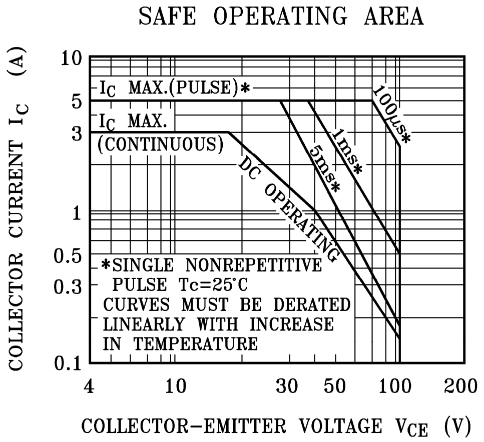
h_{FE} – I_C



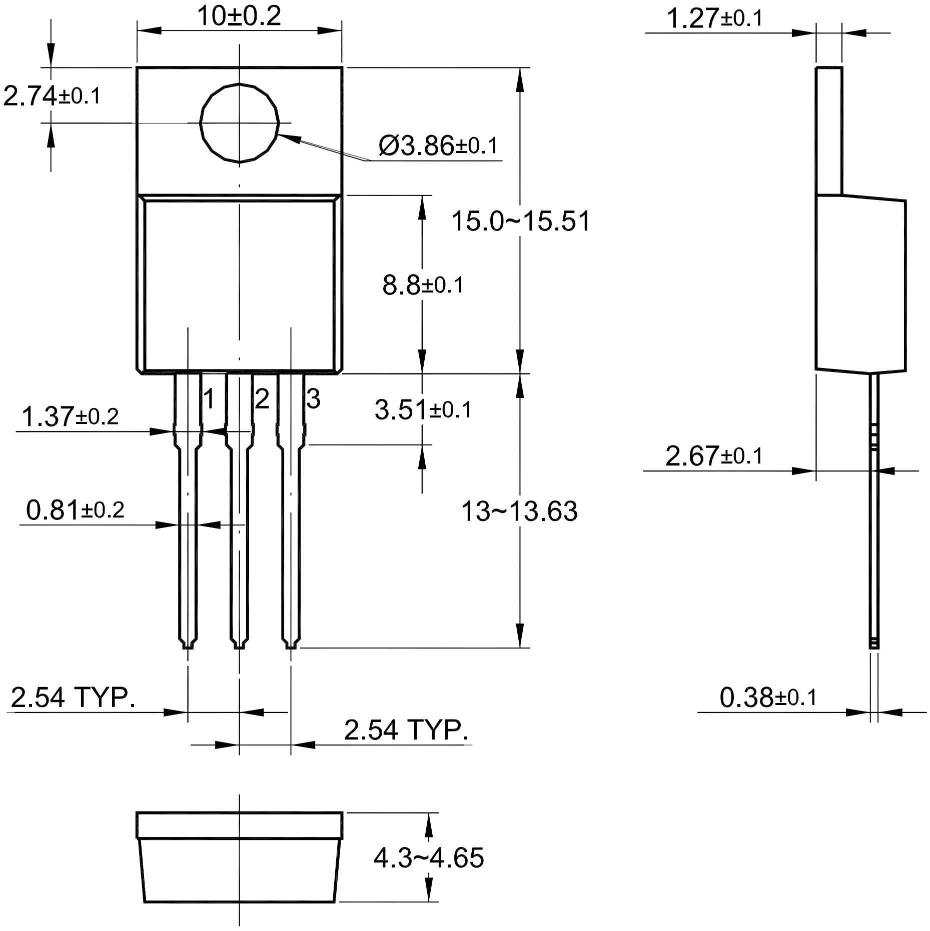
$V_{CE(sat)}$,$V_{BE(sat)}$ – I_C







TO-220 PACKAGE OUTLINE



Dimensions in mm