

**Features**

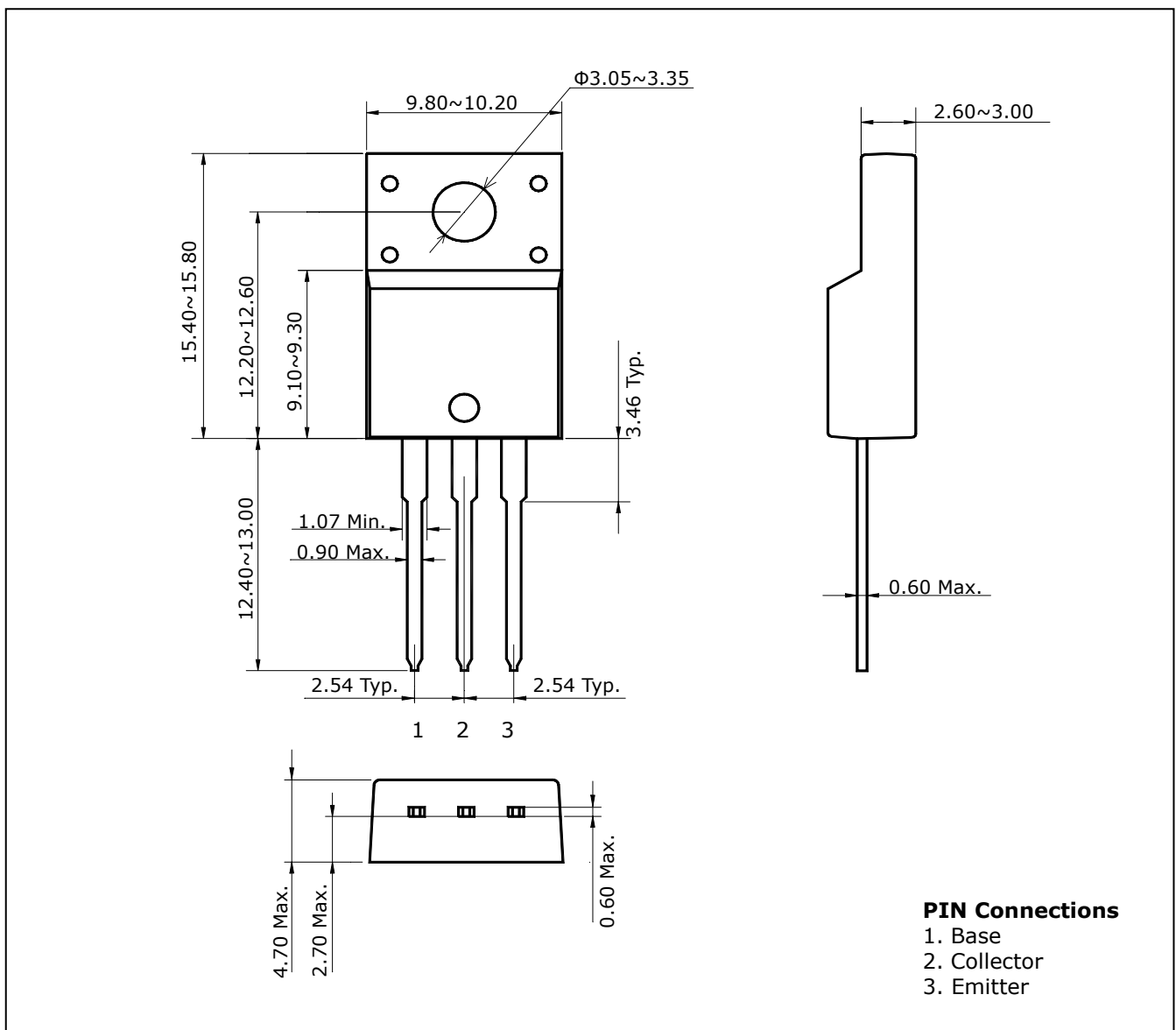
- Low saturation switching application
- Voltage regulator application
- High Voltage :  $V_{CE0}=60V$  Min.

**Ordering Information**

Type NO.	Marking	Package Code
STC405	STC405	TO-220F-3L

**Outline Dimensions**

**unit : mm**



**Absolute maximum ratings**

Characteristic	Symbol	Rating	Unit
Collector-Base voltage	$V_{CBO}$	80	V
Collector-Emitter voltage	$V_{CEO}$	60	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	5	A
Collector Power dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	2	W
Collector Power dissipation ( $T_c=25^\circ\text{C}$ )		20	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

**Electrical Characteristics**

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB}=80\text{V}, I_E=0$	-	-	10	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$	-	-	10	$\mu\text{A}$
Collector-Emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	60	-	-	V
DC current gain	$h_{FE}$	$V_{CE}=5\text{V}, I_C=1\text{A}$	200	-	400	-
		$V_{CE}=5\text{V}, I_C=3\text{A}$	80	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C=3\text{A}, I_B=300\text{mA}$	-	-	1	V
Base-Emitter saturation voltage	$V_{BE(sat)}$	$I_C=3\text{A}, I_B=300\text{mA}$	-	-	1.5	V
Transition frequency	$f_T$	$V_{CB}=5\text{V}, I_C=50\text{mA}$	-	8	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	25	-	pF

## Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

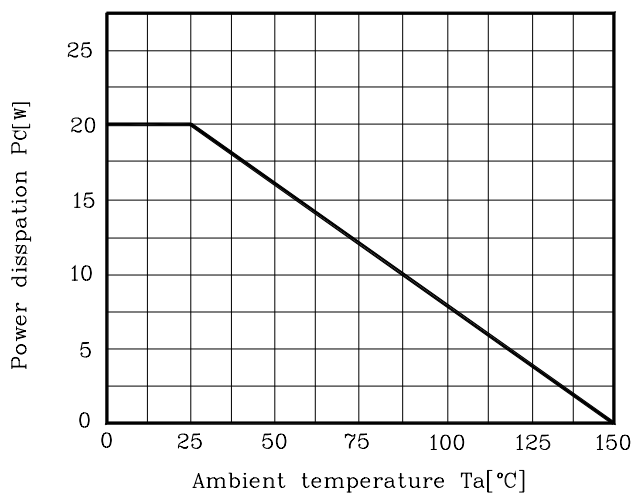


Fig. 2  $V_{CE(sat)} - I_C$

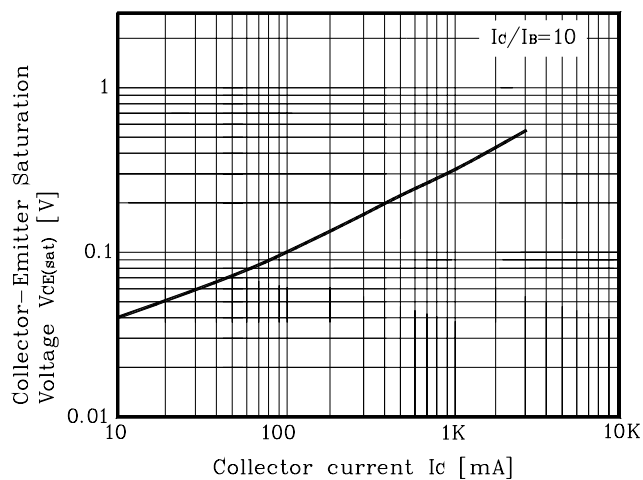


Fig. 3  $h_{FE} - I_C$

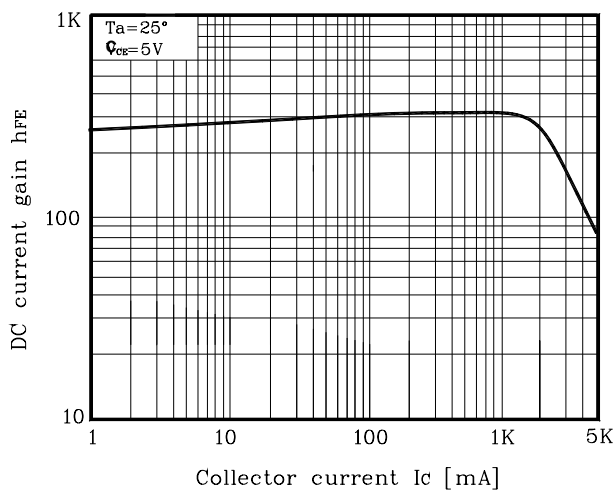


Fig. 4  $I_C - V_{CE}$

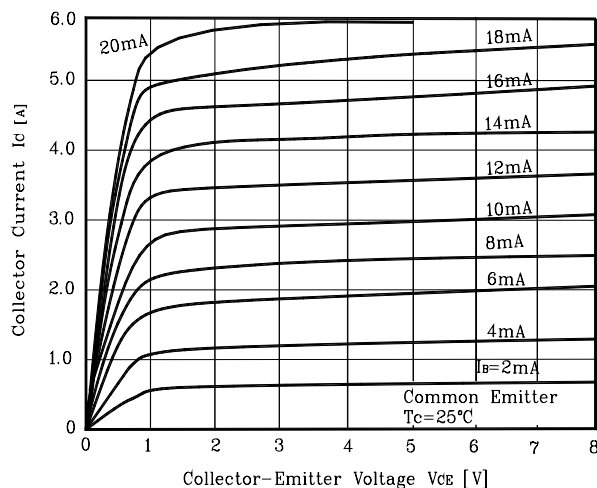
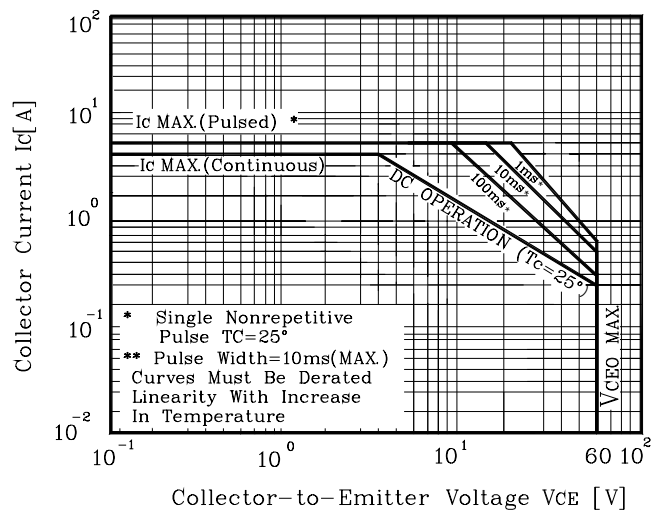


Fig. 5 Safe operating Area



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