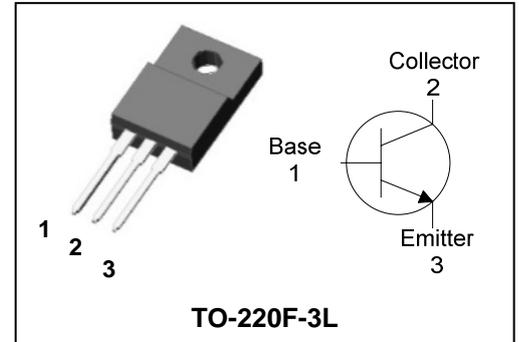


## Features

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

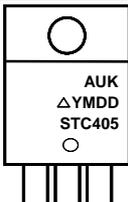
## PIN Connection



## Ordering Information

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

## Marking Diagram

	<p>Column 1 : Manufacturer</p> <p>Column 2 : Production Information</p> <p style="padding-left: 20px;">- <math>\Delta</math> : Factory Management Code</p> <p style="padding-left: 20px;">- YMDD : Date Code (Year, Month, Date)</p> <p>Column 3 : Device Code</p>
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## 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 ( $T_c=25^\circ\text{C}$ )	$P_C$	20	W
Collector Power dissipation ( $T_a=25^\circ\text{C}$ )		2	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ 150	$^\circ\text{C}$

Characteristic		Symbol	Typ.	Max.	Unit
Thermal resistance	Junction-case	$R_{th(J-C)}$	-	6.25	$^\circ\text{C/W}$
	Junction-ambient	$R_{th(J-A)}$	-	62.5	

## Electrical Characteristics

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

\*  $h_{FE}$  rank : 200~400 Only

Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

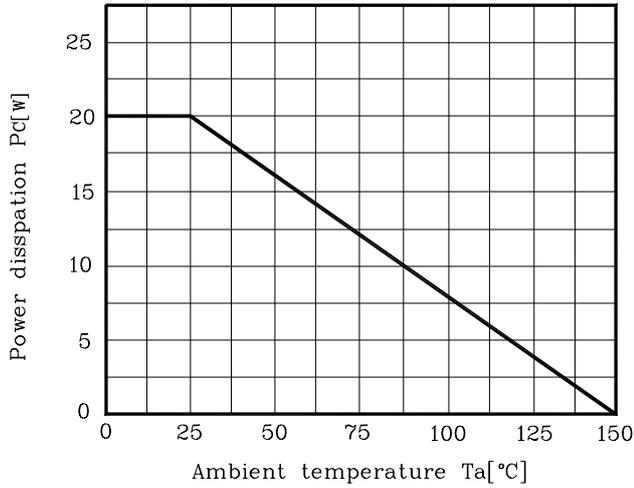


Fig. 2  $V_{CE(sat)} - I_C$

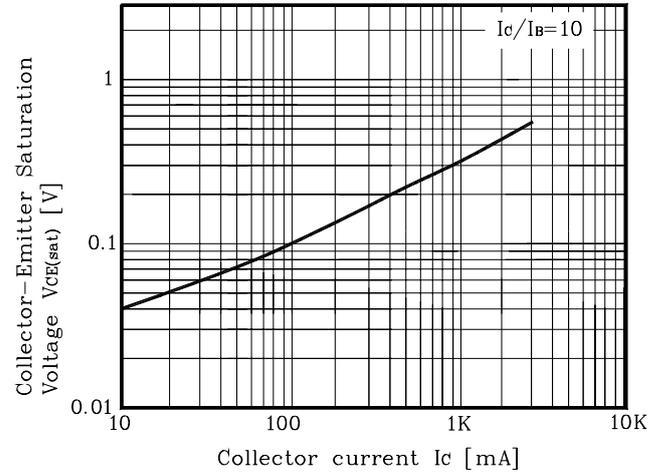


Fig. 3  $h_{FE} - I_C$

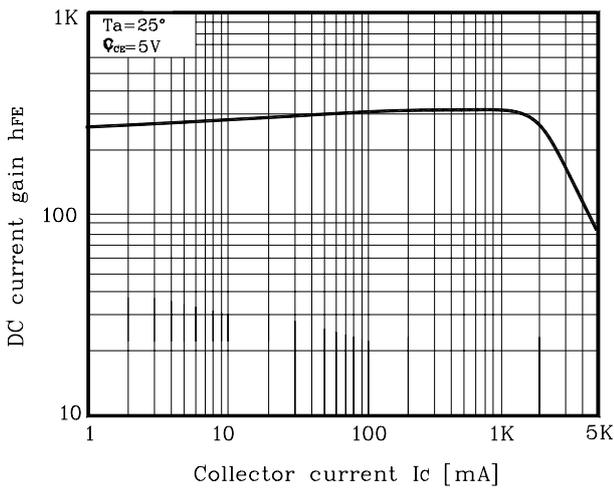


Fig. 4  $I_C - V_{CE}$

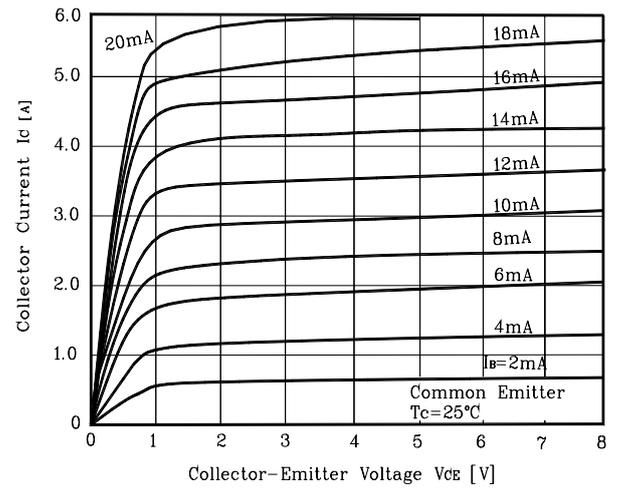
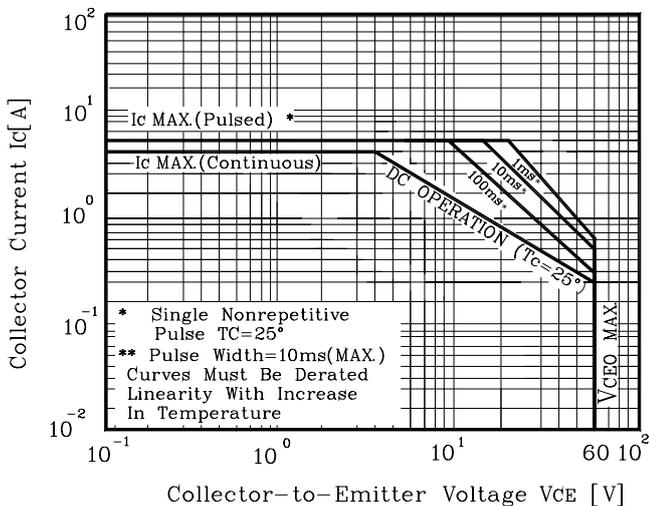
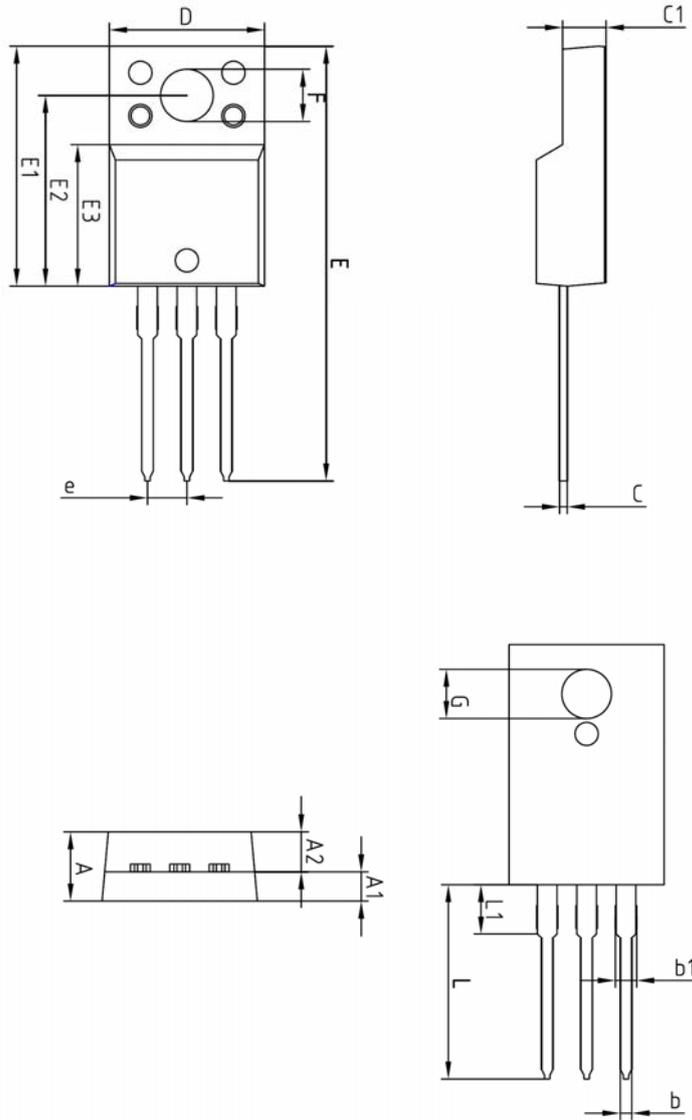


Fig. 5 Safe operating Area



Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	-	-	4.60	
A1	2.45	2.50	2.55	
A2	1.95	2.00	2.05	
b	0.65	0.75	0.85	
b1	1.07	1.27	1.47	
C	0.40	0.50	0.60	
C1	2.70	2.80	2.90	
D	9.90	10.00	10.10	
E	28.00	-	28.60	
E1	15.50	15.60	15.70	
E2	12.30	12.40	12.50	
E3	9.15	9.20	9.25	
F	3.30	3.40	3.50	
G	3.10	3.20	3.30	
e	2.54 BSC			
L	12.40	-	13.00	
L1	3.46 BSC			

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