

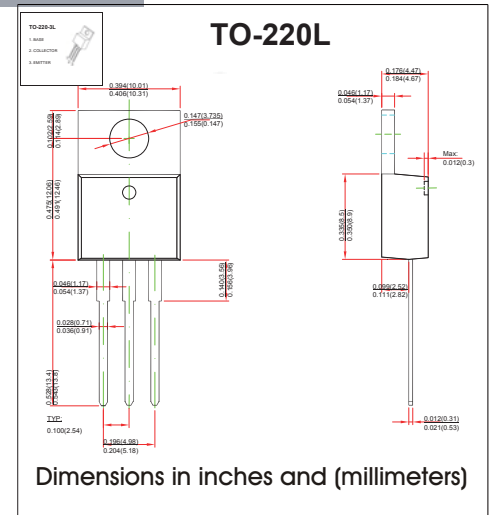
## TO-220 Plastic-Encapsulate Transistors

### FEATURES

- power switching applications
- TRANSISTOR (NPN)

### MECHANICAL DATA

- Case style: TO-220L molded plastic
- Mounting position: any



## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CB0}$	Collector-Base Voltage	700	V
$V_{CE0}$	Collector-Emitter Voltage	400	V
$V_{EB0}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current -Continuous	1.5	A
$P_C$	Collector Power Dissipation	2	W
$T_J$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55~150	°C

## Electrical Specification ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=5\text{mA}, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=2\text{mA}, I_C=0$	9			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=700\text{V}, I_E=0$			1	mA
Collector cut-off current	$I_{CEO}$	$V_{CE}=400\text{V}, I_B=0$			0.5	mA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=9\text{V}, I_C=0$			1	mA
DC current gain	$h_{FE1}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	8		40	
	$h_{FE2}$	$V_{CE}=5\text{V}, I_C=1.5\text{A}$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=0.25\text{A}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=0.25\text{A}$			1.2	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}, f=1\text{MHz}$	5			MHz
Fall time	$t_f$	$I_C=1\text{A}, I_{B1}=-I_{B2}=0.2\text{A}, V_{CC}=100\text{V}$			0.5	$\mu\text{s}$
Storage time	$t_s$	$I_C=250\text{mA}$ (UI9600)	2		4	$\mu\text{s}$

### CLASSIFICATION OF $h_{FE1}$

Range	8-10	10-15	15-20	20-25	25-30	30-35	35-40

### CLASSIFICATION OF $t_s$

Rank	A1	A2	B1	B2
Range	2-2.5 ( $\mu\text{s}$ )	2.5-3 ( $\mu\text{s}$ )	3-3.5 ( $\mu\text{s}$ )	3.5-4 ( $\mu\text{s}$ )