

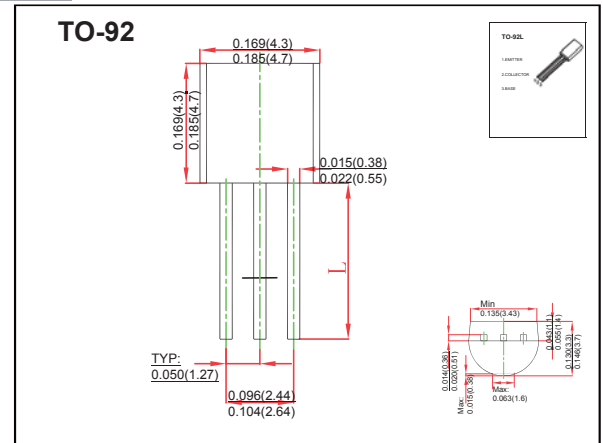
## TO-92 Plastic-Encapsulate Transistors

### FEATURE

- Power Switching Applications
- TRANSISTOR (NPN)

### MECHANICAL DATA

- Case style: TO-92 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	600	V
$V_{CE0}$	Collector-Emitter Voltage	400	V
$V_{EB0}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current -Continuous	0.8	A
$P_C$	Collector Power Dissipation	0.9	W
$T_J$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55 ~ 150	°C

### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
3DD13002B	TO-92	Bulk	1000pcs/Bag
3DD13002B-TA	TO-92	Tape	2000pcs/Box

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

Parameter	Symbol	Test conditions	Min	Typ	M	
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=600\text{V}, I_E=0$			100	$\mu\text{A}$
	$I_{CEO}$	$V_{CE}=400\text{V}, I_B=0$			100	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$			100	$\mu\text{A}$
Dc current gain	$h_{FE1}$	$V_{CE}=10\text{V}, I_C=200\text{mA}$			40	
	$h_{FE2}$	$V_{CE}=10\text{V}, I_C=0.25\text{mA}$				
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=200\text{mA}, I_B=40\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=200\text{mA}, I_B=40\text{mA}$			1.1	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}$ $f=1\text{MHz}$	5			MHz
Fall time	$t_f$	$I_C=1\text{A}, I_{B1}=-I_{B2}=0.2\text{A}$			0.5	$\mu\text{s}$
Storage time	$t_s$	$V_{CC}=100\text{V}$			2.5	$\mu\text{s}$

### CLASSIFICATION OF $h_{FE1}$

Range	9-15	15-20	20-25	25-30	30-35	35-40

### MARKING: 13002B

# RATINGS AND CHARACTERISTIC CURVES

