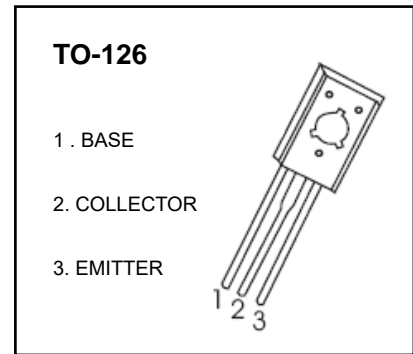


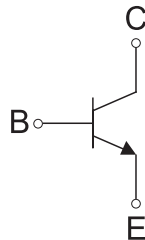
## 3DD13002 TRANSISTOR (NPN)

### FEATURES

- Power switching applications



### Equivalent Circuit



### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector -Base Voltage	600	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current -Continuous	1	A
$P_C$	Collector Power Dissipation	1.25	W
$T_J, T_{stg}$	Operation Junction and Storage Temperature Range	-55~150	$^{\circ}\text{C}$

$T_a=25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
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	$\mu\text{A}$
	$I_{CEO}$	$V_{CB}=400\text{V}$ , $I_E=0$			100	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=7\text{V}$ , $I_C=0$			100	$\mu\text{A}$
Dc current gain	$h_{FE1}$	$V_{CE}=10\text{V}$ , $I_C=200\text{mA}$	9		40	
	$h_{FE2}$	$V_{CE}=10\text{V}$ , $I_C=0.25\text{mA}$	5			
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	$t_f$	$I_C=1\text{A}$ , $I_{B1}=-I_{B2}=0.2\text{A}$ $V_{CC}=100\text{V}$			0.5	$\mu\text{s}$
Storage time	$t_s$				2.5	$\mu\text{s}$

#### CLASSIFICATION OF $h_{FE1}$

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

## Static Characteristic

