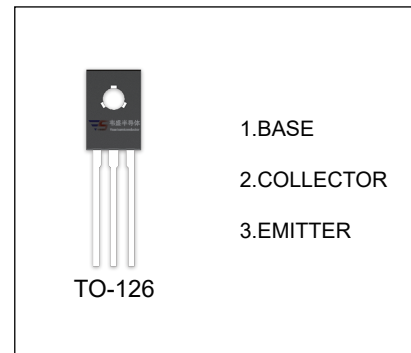


## 3DD13003 TRANSISTOR (NPN)

### FEATURES

- Power switching applications



### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
3DD13003	TO-126	Bulk	200pcs/Bag
3DD13003-TU	TO-126	Tube	60pcs/Tube

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

Symbol	Parameter	Value	Unit
$V_{CB0}$	Collector-Base Voltage	700	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current -Continuous	1.5	A
$P_C$	Collector Power Dissipation	1.5	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	$V_{(BR)CBO}$	$I_C=5\text{mA}, I_E=0$	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	$h_{FE1}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	20		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 $h_{FE(1)}$

Range	20-30	30-40

#### CLASSIFICATION OF $t_s$

Rank	A	B
Range	2.0-3.0 ( $\mu\text{s}$ )	3.0-4.0 ( $\mu\text{s}$ )

