

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

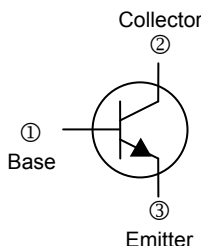
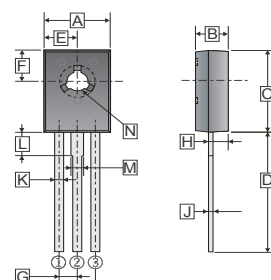
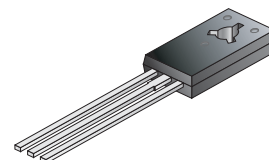
## FEATURES

- Power Switching Applications

TO-126

## CLASSIFICATION OF $t_s$

Product-Rank	BD3DD13003-A1	BD3DD13003-A2
Range	2-2.5 ( $\mu$ s)	2.5-3 ( $\mu$ s)
Product-Rank	BD3DD13003-B1	BD3DD13003-B2
Range	3-3.5 ( $\mu$ s)	3.5-4 ( $\mu$ s)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	7.40	7.80	H	1.10	1.50
B	2.50	2.90	J	0.45	0.60
C	10.60	11.00	K	0.66	0.86
D	15.30	15.70	L	2.10	2.30
E	3.70	3.90	M	1.17	1.37
F	3.90	4.10	N	3.00	3.20
G	2.29 TYP.				

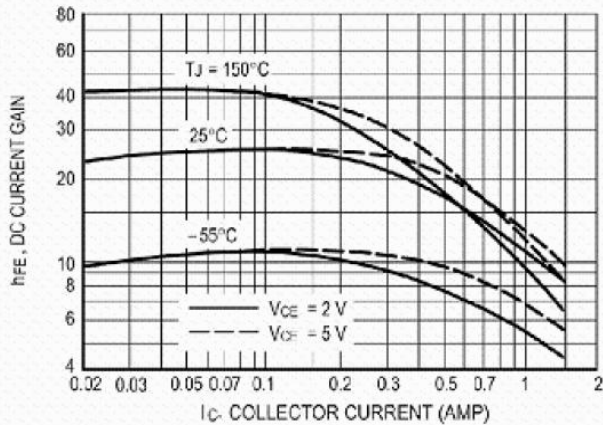
## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	700	V
Collector to Emitter Voltage	$V_{CEO}$	400	V
Emitter to Base Voltage	$V_{EBO}$	9	V
Collector Current - Continuous	$I_C$	1.5	A
Collector Power Dissipation	$P_C$	1.5	W
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

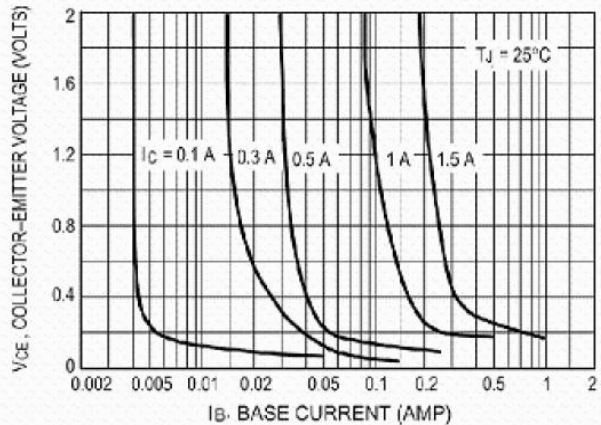
## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	700	-	-	V	$I_C=5\text{mA}, I_E=0$
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	400	-	-	V	$I_C=10\text{mA}, I_B=0$
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	9	-	-	V	$I_E=2\text{mA}, I_C=0$
Collector Cut - Off Current	$I_{CBO}$	-	-	1	mA	$V_{CB}=700\text{V}, I_E=0$
Collector Cut - Off Current	$I_{CEO}$	-	-	0.5	mA	$V_{CE}=400\text{V}, I_B=0$
Emitter Cut - Off Current	$I_{EBO}$	-	-	1	mA	$V_{EB}=9\text{V}, I_C=0$
DC Current Gain	$h_{FE(1)}$	20	-	30		$V_{CE}=5\text{V}, I_C=0.5\text{A}$
	$h_{FE(2)}$	5	-	-		$V_{CE}=5\text{V}, I_C=1.5\text{A}$
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.6	V	$I_C=1\text{A}, I_B=250\text{mA}$
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	1.2	V	$I_C=1\text{A}, I_B=250\text{mA}$
Transition Frequency	$f_T$	5	-	-	MHz	$V_{CE}=10\text{V}, I_C=100\text{mA}, f=1\text{MHz}$
Fall time	$t_f$	-	0.5	-	$\mu\text{s}$	$I_C=1\text{A}, I_{B1}=-I_{B2}=0.2\text{A}, V_{CC}=100\text{V}$
Storage time	$t_s$	2	-	4	$\mu\text{s}$	$I_C=250\text{mA}$ (UI9600)

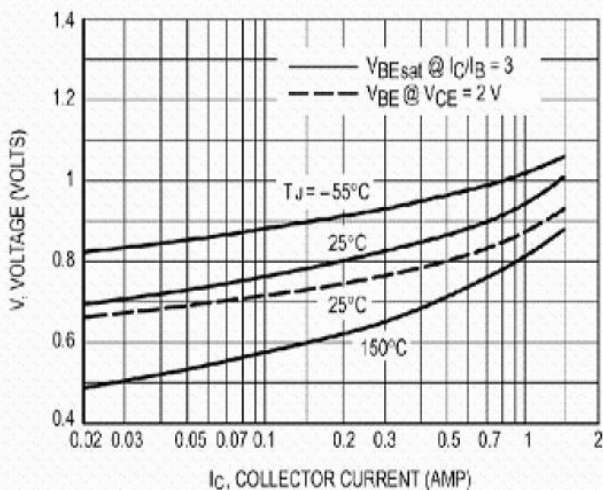
**CHARACTERISTIC CURVE**



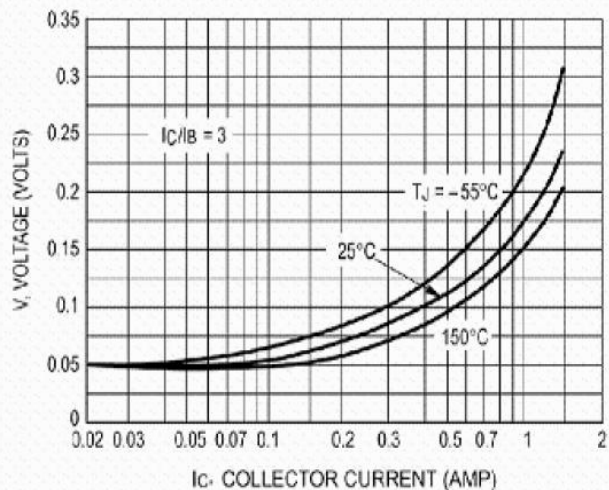
**DC Current Gain**



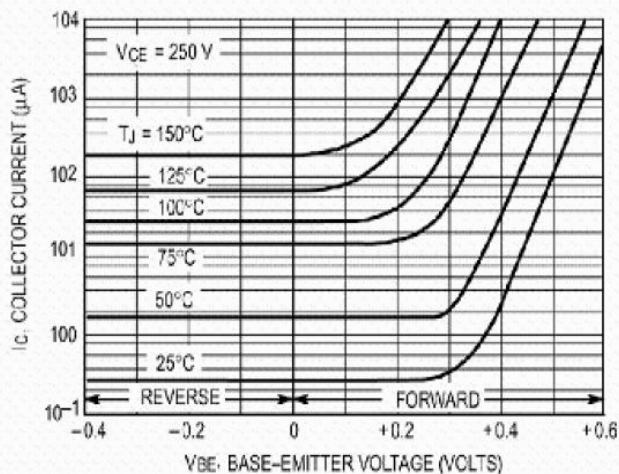
**Collector Saturation Region**



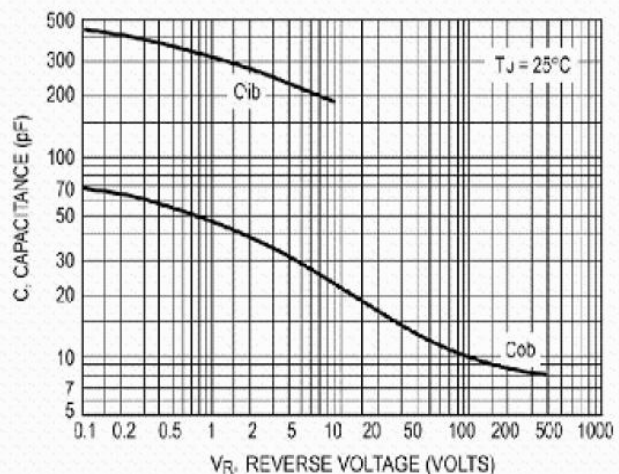
**Base-Emitter Voltage**



**Collector-Emitter Saturation Region**



**Collector Cutoff Region**



**Capacitance**