

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

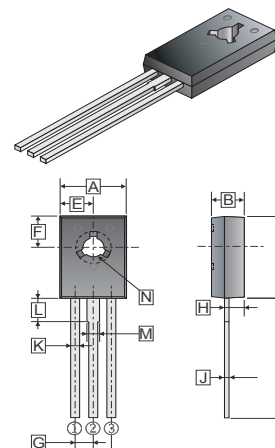
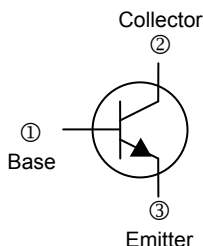
FEATURES

- Power Switching Applications

TO-126

CLASSIFICATION OF t_s

Product-Rank	BD13003B-A1	BD13003B-A2
Range	2-2.5 (μ s)	2.5-3 (μ s)
Product-Rank	BD13003B-B1	BD13003B-B2
Range	3-3.5 (μ s)	3.5-4 (μ 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.				

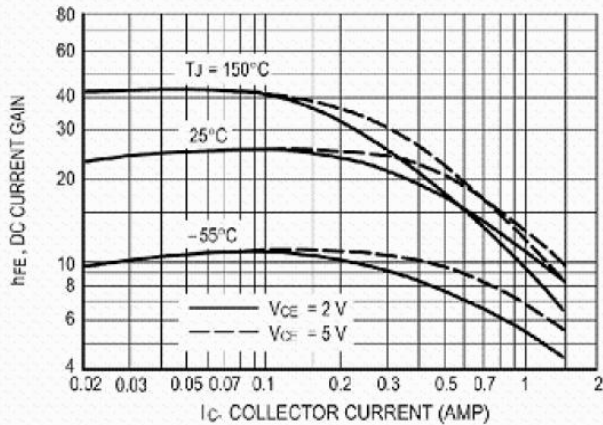
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

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	$^\circ\text{C}$

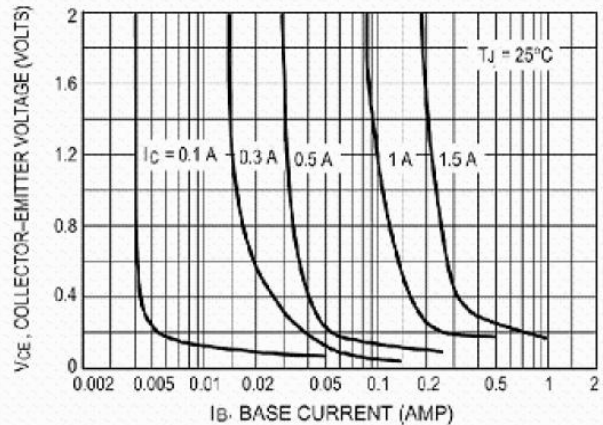
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

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	μ 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	μ s	$I_C=250\text{mA}$ (UI9600)

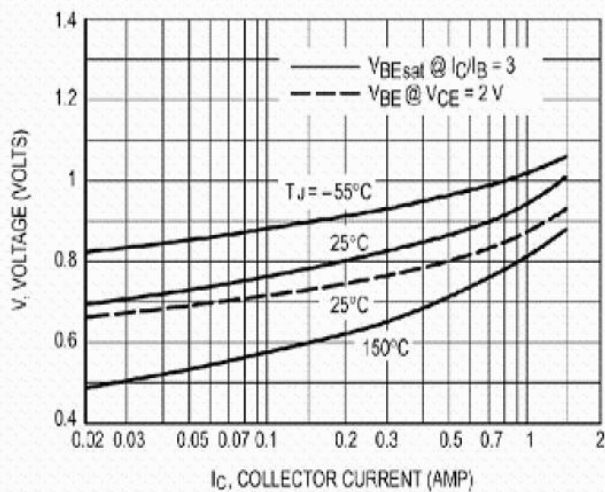
CHARACTERISTIC CURVE



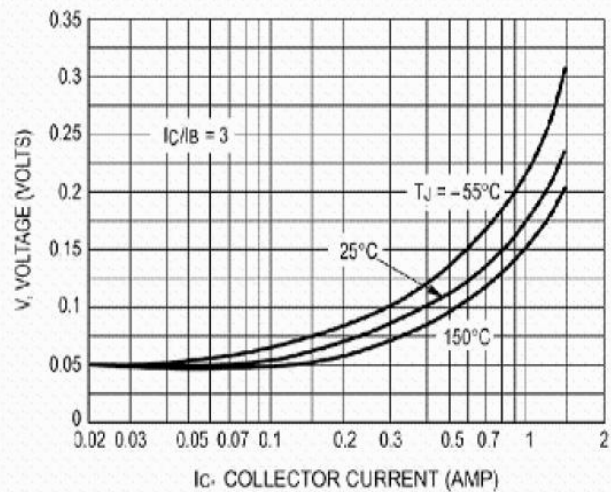
DC Current Gain



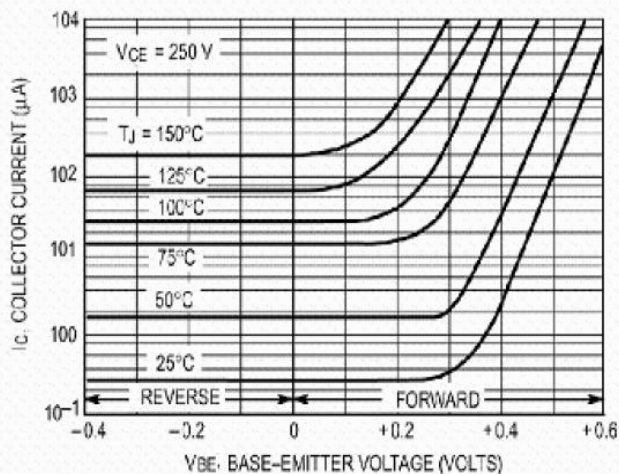
Collector Saturation Region



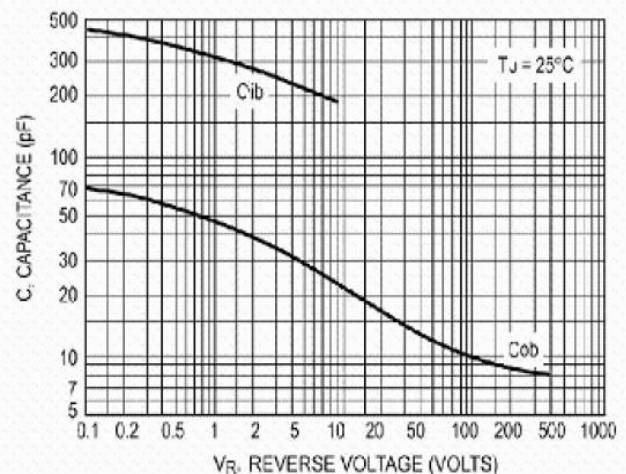
Base-Emitter Voltage



Collector-Emitter Saturation Region



Collector Cutoff Region



Capacitance