

TO-251-3L Plastic-Encapsulate Transistors

3DD13003 TRANSISTOR (NPN)

FEATURES

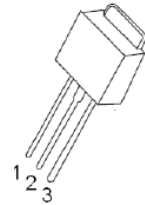
- Power Switching Applications

MAXIMUM RATINGS(T_A=25 °C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	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 Dissipation	1.25	W
T _J , T _{stg}	Junction and Storage Temperature	-55~+150	°C

TO-251-3L

1. BASE
2. COLLECTOR
3. EMITTER



ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 1mA, I _E =0	700			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 10 mA, I _B =0	400			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 1mA, I _C =0	9			V
Collector cut-off current	I _{CBO}	V _{CB} = 700V, I _E =0			1	mA
Collector cut-off current	I _{CEO}	V _{CE} = 400V, I _B =0			0.5	mA
Emitter cut-off current	I _{EBO}	V _{EB} = 9 V, I _C =0			1	mA
DC current gain	h _{FE (1)}	V _{CE} = 5 V, I _C = 0.5 A	8		40	
	h _{FE (2)}	V _{CE} = 5 V, I _C = 1.5A	5			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1A, I _B = 250 mA			0.6	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =1A, I _B = 250mA			1.2	V
Base-emitter voltage	V _{BE}	I _E = 2A			3	V
Transition frequency	f _T	V _{CE} =10V, I _C =100mA f =1MHz	5			MHz
Fall time	t _f	I _C =1A, I _{B1} =-I _{B2} =0.2A V _{CC} =100V			0.5	μs
Storage time	t _s	I _C =250mA	2		4	μs

CLASSIFICATION OF h_{FE(1)}

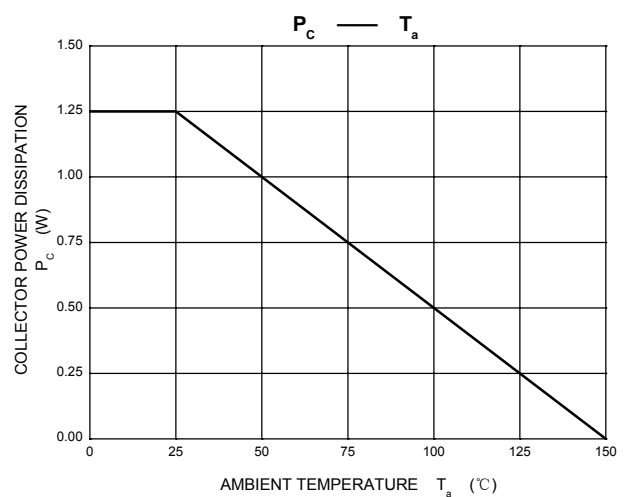
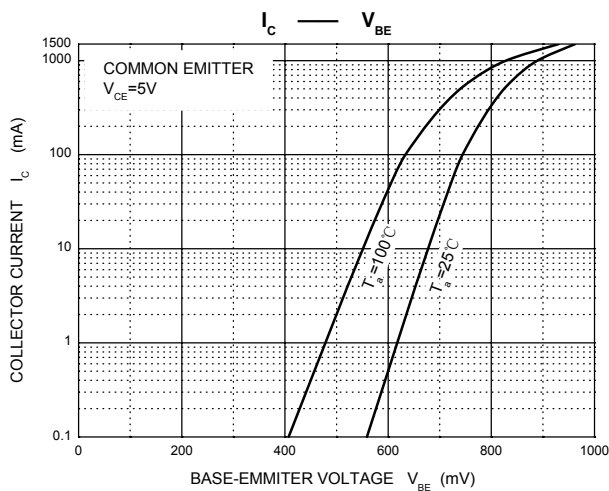
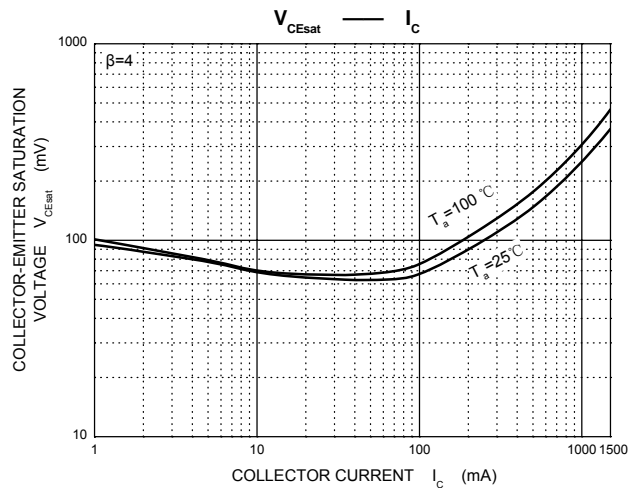
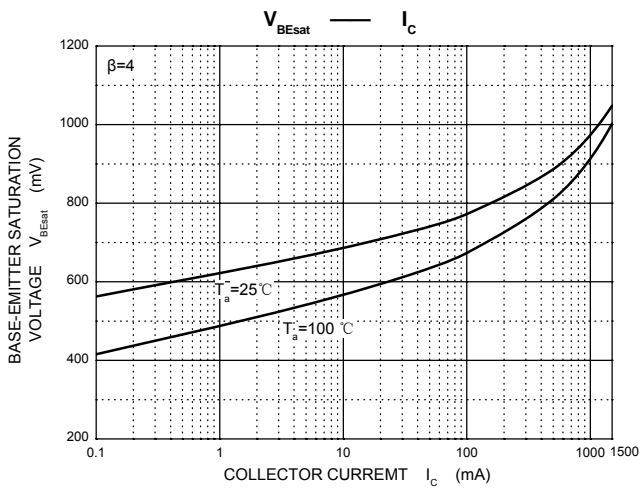
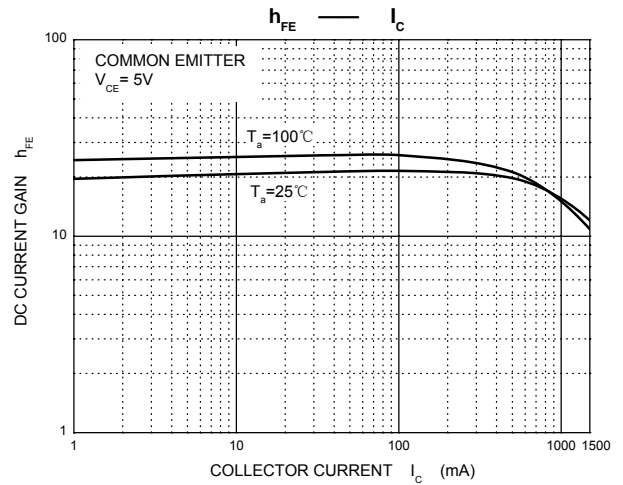
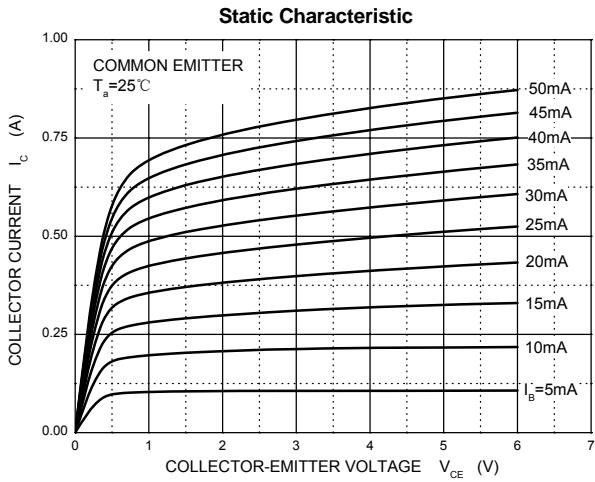
Rank							
Range	8-10	10-15	15-20	20-25	25-30	30-35	35-40

CLASSIFICATION OF t_s

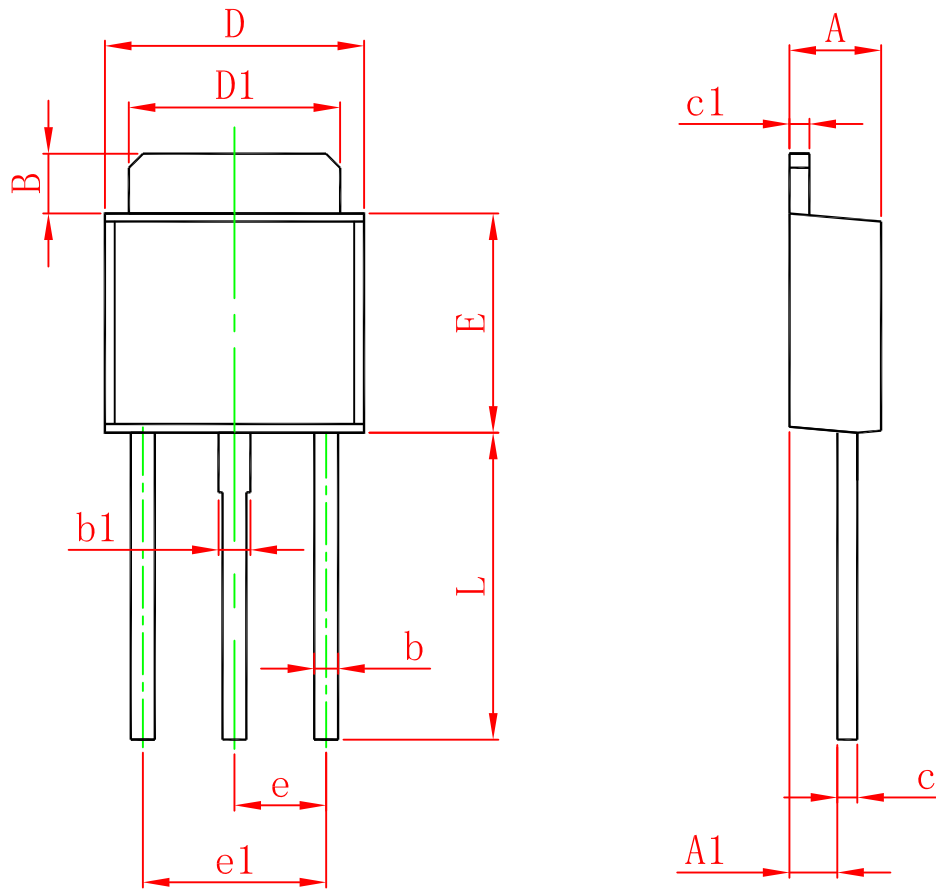
Rank	A1	A2	B1	B2
Range	2-2.5 (μs)	2.5-3(μs)	3-3.5(μs)	3.5-4 (μs)

Typical Characteristics

3DD13003



TO-251-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	1.050	1.350	0.042	0.054
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	7.500	7.900	0.295	0.311