



TO-251-3L Plastic-Encapsulate Transistors

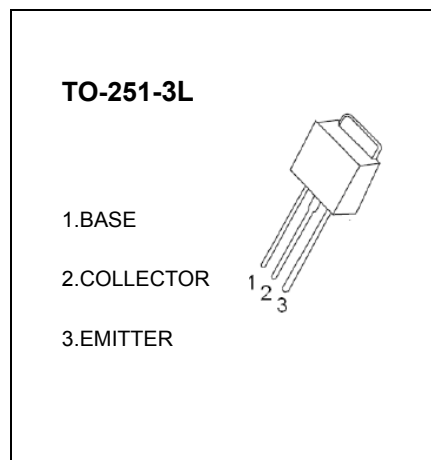
2SD1899-Z TRANSISTOR (NPN)

FEATURES

- High h_{FE}
- Low $V_{CE(sat)}$

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

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	60	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current -Continuous	3	A
P _C	Collector Power Dissipation	1	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C



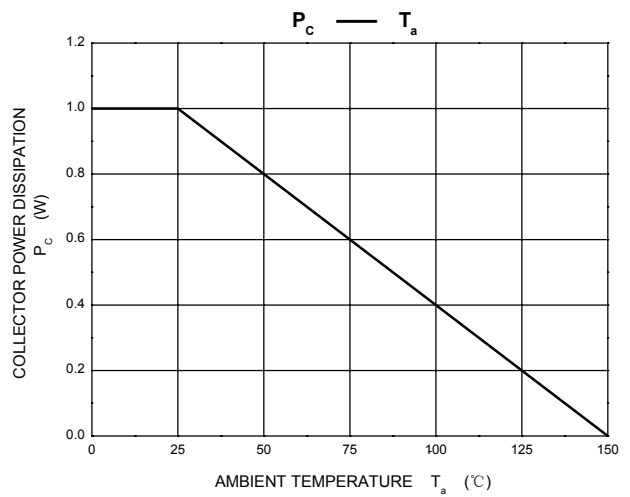
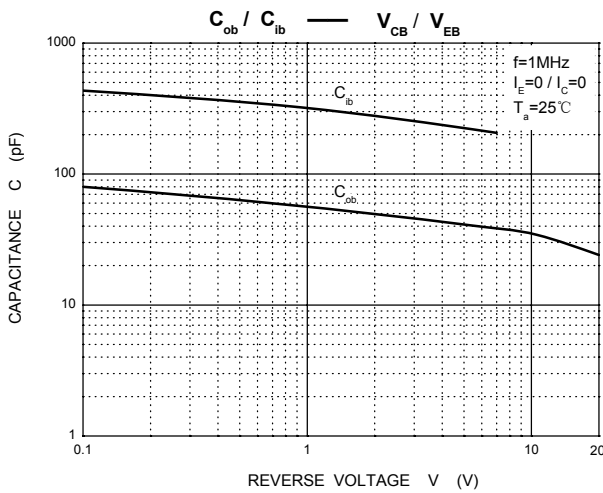
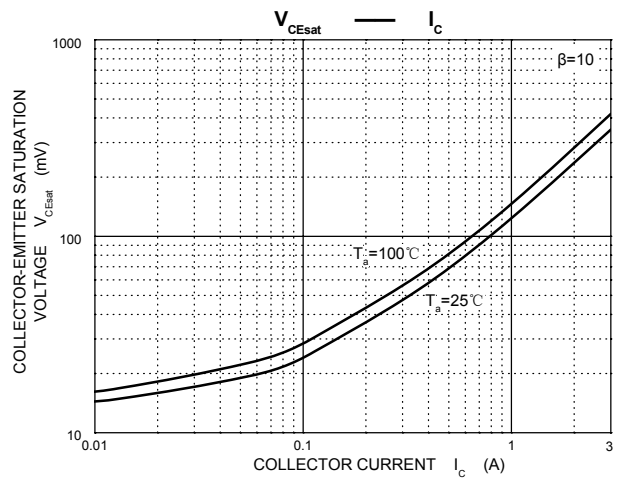
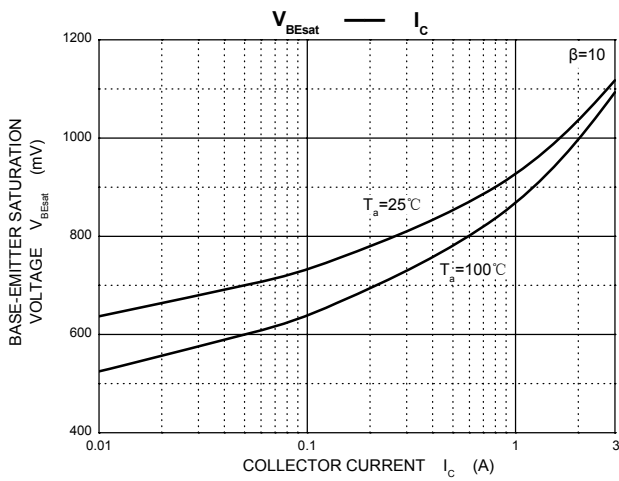
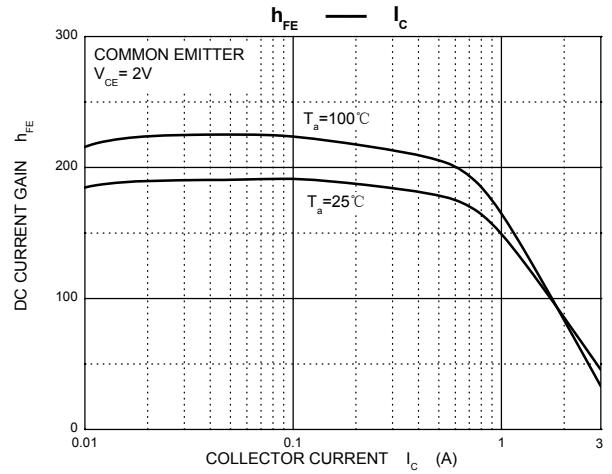
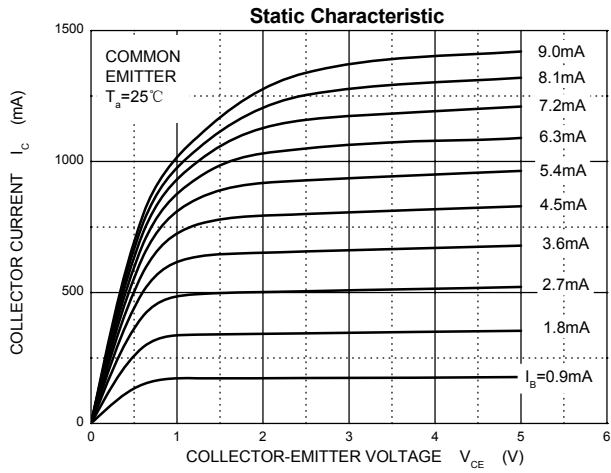
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	60			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	7			V
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0			10	μA
Emitter cut-off current	I _{EBO}	V _{EB} =7V, I _C =0			10	μA
DC current gain	h _{FE(1)}	V _{CE} =2V, I _C =200mA	60			
	h _{FE(2)}	V _{CE} =2V, I _C =600mA	100		400	
	h _{FE(3)}	V _{CE} =2V, I _C =2A	50			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1.5A, I _B =150mA			0.25	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =1.5A, I _B =150mA			1.2	V
Transition frequency	f _T	V _{CE} =5V, I _C =1.5A		120		MHz
Collector output capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz		30		pF
Switching Time	Turn on Time	t _{on}	V _{CC} =10V, I _C =1A, I _{B1} =-I _{B2} =-0.1A		0.5	μs
	Storage Time	t _{stg}			2.0	
	Fall Time	t _f			0.5	

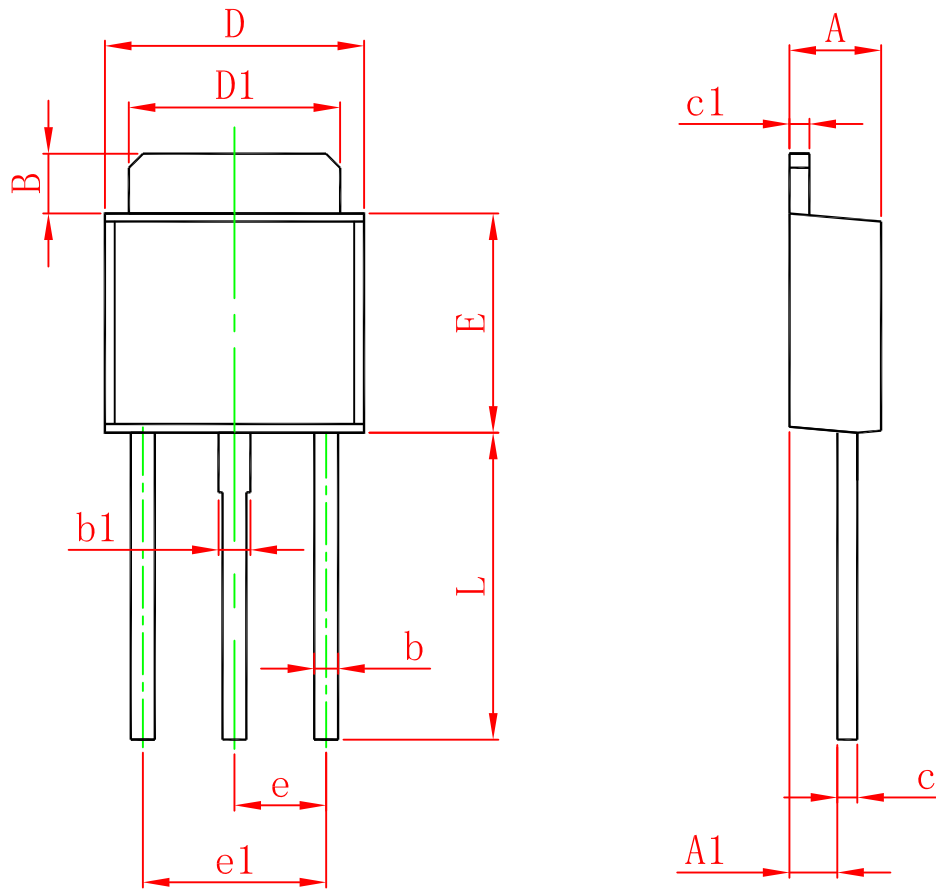
CLASSIFICATION OF h_{FE(2)}

Rank	M	L	K
Range	100-200	160-320	200-400

Typical Characteristics



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