D882M TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

TO-252

FEATURES

- Power Dissipation

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

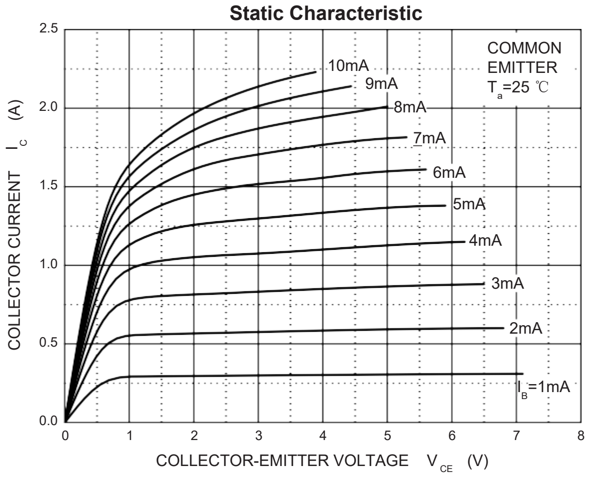
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	3	A
P_C	Collector Power Dissipation	1.25	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55-150	℃

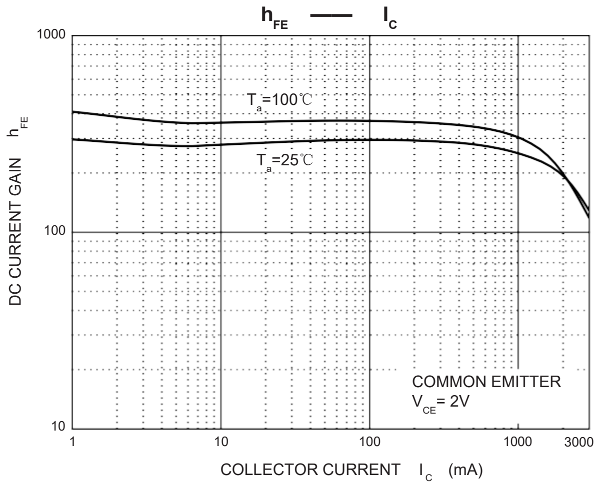
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

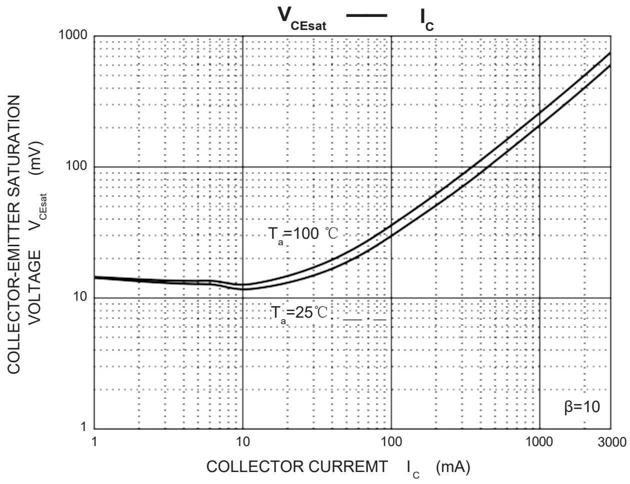
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V(BR)_{CBO}$	I_C = 100μA, I_E=0	40			V
Collector-emitter breakdown voltage	$V(BR)_{CEO}$	I_C = 10mA, I_B=0	30			V
Emitter-base breakdown voltage	$V(BR)_{EBO}$	I_E= 100μA, I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}= 40 V, I_E=0			1	μA
Collector cut-off current	I_{CEO}	V_{CE}= 30 V, I_B=0			10	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 6 V, I_C=0			1	μA
DC current gain	h_{FE}	V_{CE}= 2 V, I_C= 1A	60		400	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C= 2A, I_B= 0.2 A			0.5	V
Base-emitter saturation voltage	$V_{BE\ (sat)}$	I_C= 2A, I_B= 0.2 A			1.5	V
Transition frequency	f_T	V_{CE}= 5V, I_C=0.1A f =10MHz		90		MHz

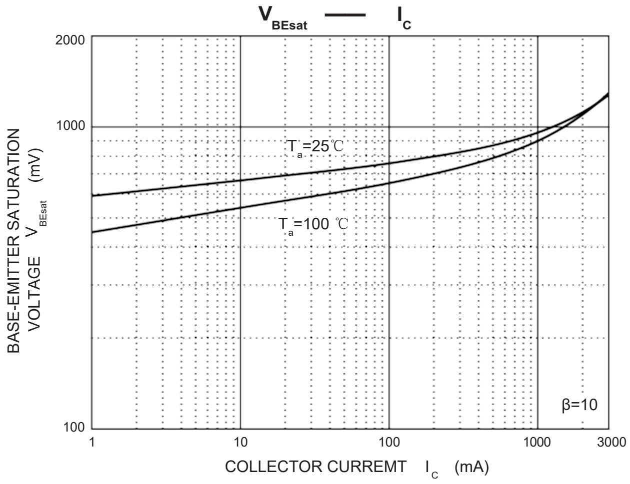
CLASSIFICATION OF h_{FE}

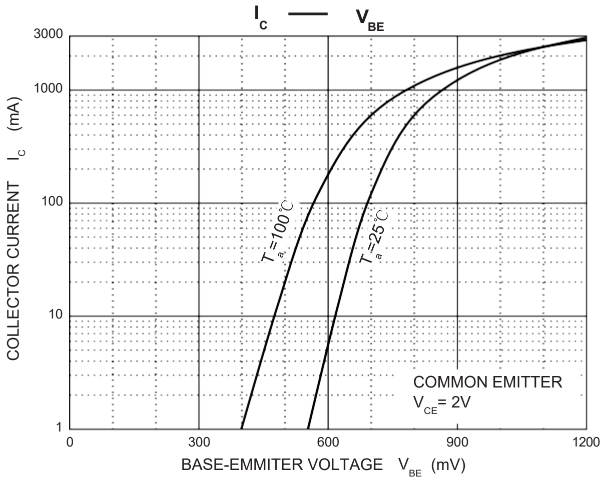
Rank	R	O	Y	GR
Range	60-120	100-200	160-320	200-400

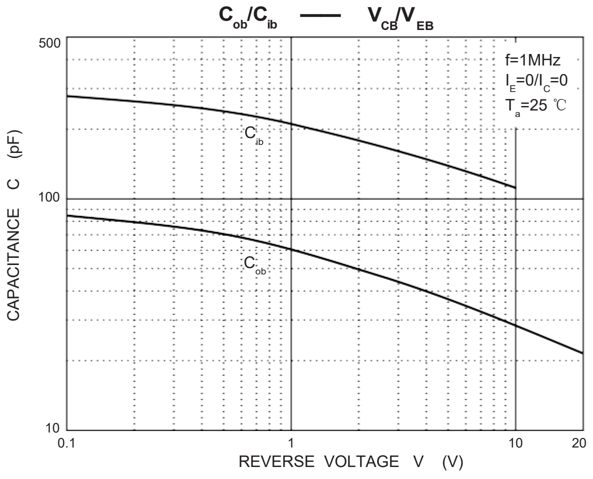

Static Characteristic
COMMON
EMITTER
T$_a$=25 ℃
10mA
9mA
8mA
7mA
6mA
5mA
4mA
3mA
2mA
I$_B$=1mA
COLLECTOR CURRENT I$_C$ (A)
2.5
2.0
1.5
1.0
0.5
0.0
0
1
2
3
4
5
6
7
8
COLLECTOR-EMITTER VOLTAGE V$_{CE}$ (V)

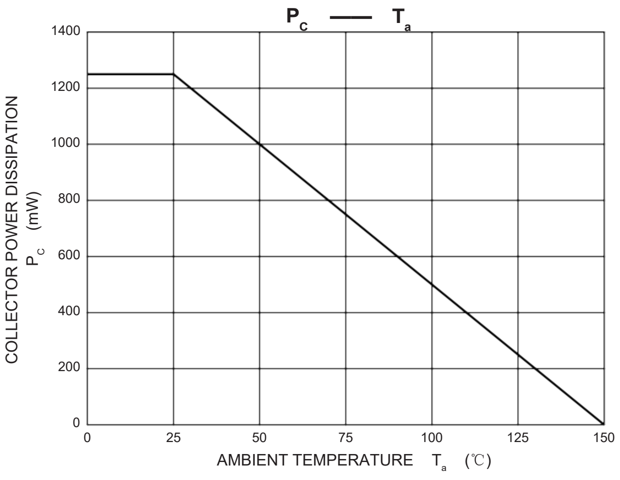

h$_{FE}$ — I$_C$
T$_a$=100℃
T$_a$=25℃
COMMON EMITTER
V$_{CE}$= 2V
DC CURRENT GAIN h$_{FE}$
1000
100
10
1
10
100
1000
3000
COLLECTOR CURRENT I$_C$ (mA)


V$_{CEsat}$ — I$_C$
T$_a$=100 ℃
T$_a$=25℃
β=10
COLLECTOR-EMITTER SATURATION VOLTAGE V$_{CEsat}$ (mV)
1000
100
10
1
1
10
100
1000
3000
COLLECTOR CURREMT I$_C$ (mA)


V$_{BEsat}$ — I$_C$
T$_a$=25℃
T$_a$=100 ℃
β=10
BASE-EMITTER SATURATION VOLTAGE V$_{BEsat}$ (mV)
2000
1000
100
1
10
100
1000
3000
COLLECTOR CURREMT I$_C$ (mA)


I$_C$ — V$_{BE}$
T$_a$=100℃
T$_a$=25℃
COMMON EMITTER
V$_{CE}$= 2V
COLLECTOR CURRENT I$_C$ (mA)
3000
1000
100
10
1
0
300
600
900
1200
BASE-EMMITER VOLTAGE V$_{BE}$ (mV)


C$_{ob}$/C$_{ib}$ — V$_{CB}$/V$_{EB}$
f=1MHz
I$_E$=0/I$_C$=0
T$_a$=25 ℃
C$_{ib}$
C$_{ob}$
CAPACITANCE C (pF)
500
100
10
0.1
1
10
20
REVERSE VOLTAGE V (V)


P$_C$ — T$_a$
COLLECTOR POWER DISSIPATION P$_C$ (mW)
1400
1200
1000
800
600
400
200
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T$_a$ (℃)