2SD1898 TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-89

FEATURES

- High Breakdown Voltage and Current
- Excellent DC Current Gain Linearity
- Complement the 2SB1260
- Low Collector-Emitter Saturation Voltage

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

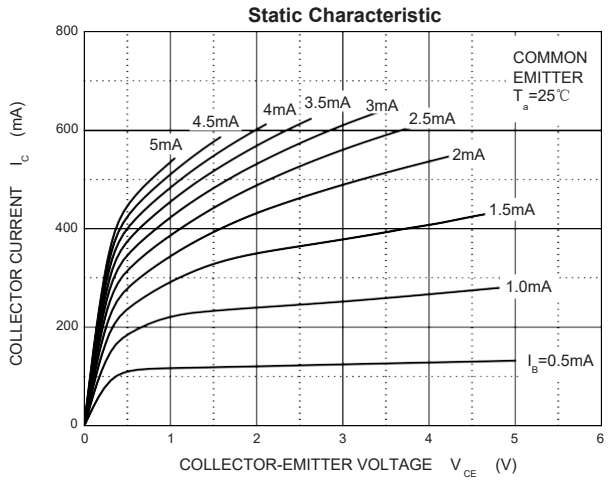
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1	A
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

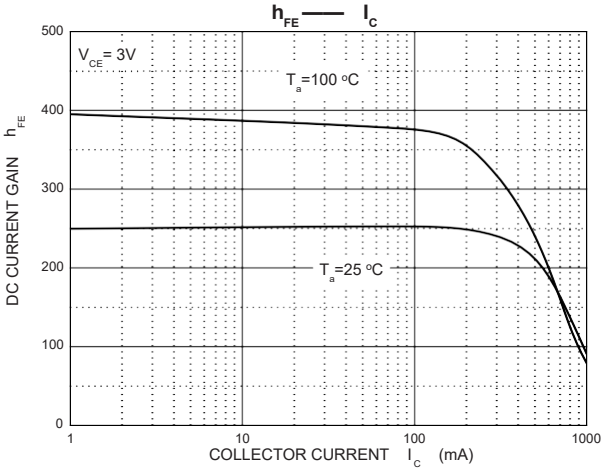
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

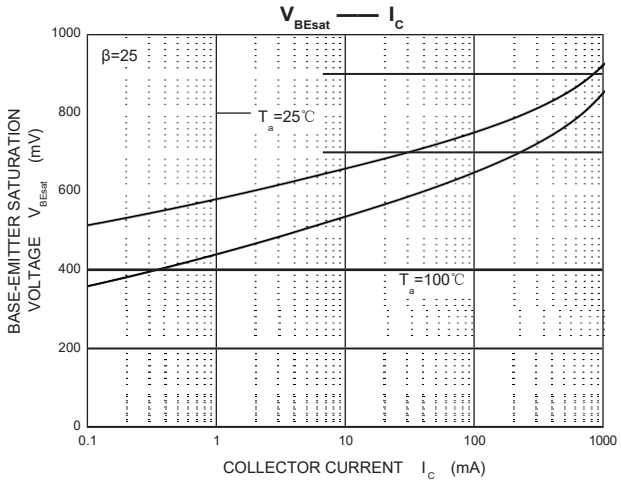
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=50μA,I_E=0	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=50μA,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=80V,I_E=0			1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V,I_C=0			1	μA
DC current gain	h_{FE}	V_{CE}=3V, I_C=500mA	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA,I_B=20mA			0.4	V
Transition frequency	f_T	V_{CE}=10V,I_C=50mA, f=100MHz		100		MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		20		pF

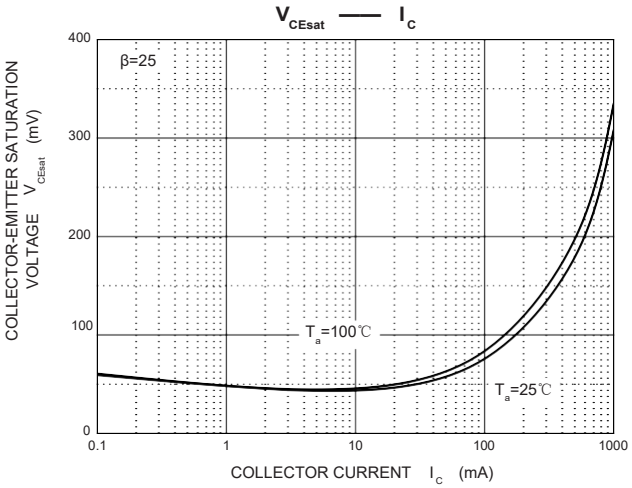
CLASSIFICATION OF h_{FE}

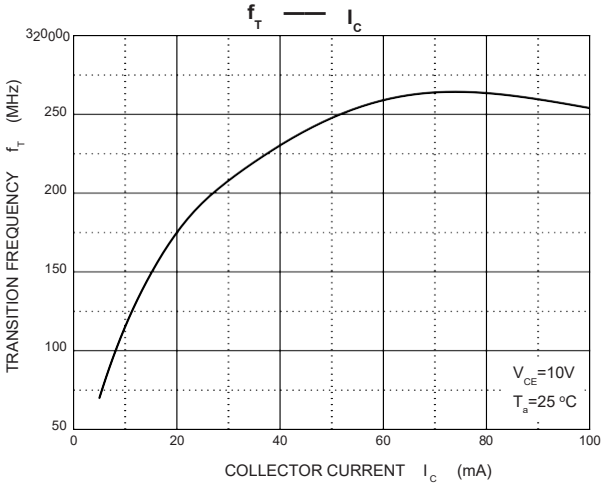
RANK	P	Q	R
RANGE	82 - 180	120 - 270	180 - 390
MARKING	DF		

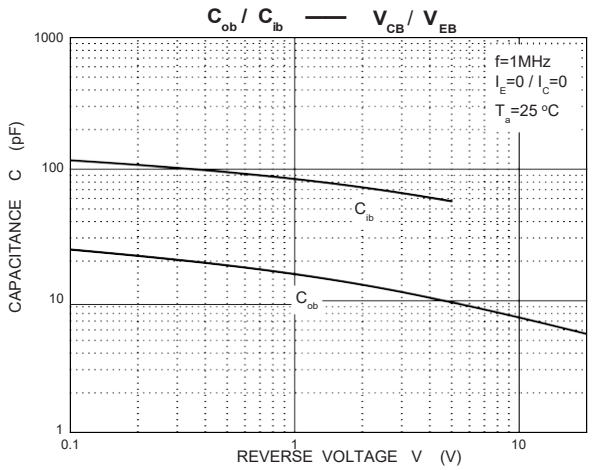

Static Characteristic
COMMON EMITTER
T_a=25℃
4.5mA
4mA
3.5mA
3mA
2.5mA
5mA
2mA
1.5mA
1.0mA
I_B=0.5mA
COLLECTOR CURRENT I_C (mA)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

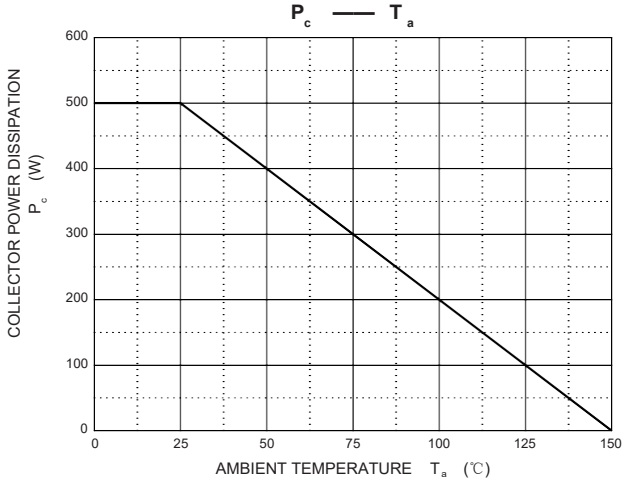

h_{FE} — I_C
V_{CE}= 3V
T_a=100 °C
T_a=25 °C
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (mA)


V_{BEsat} — I_C
β=25
T_a=25℃
T_a=100℃
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURRENT I_C (mA)


V_{CEsat} — I_C
β=25
T_a=100℃
T_a=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
COLLECTOR CURRENT I_C (mA)


f_T — I_C
V_{CE}=10V
T_a=25 °C
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)


C_{ob} / C_{ib} — V_{CB} / V_{EB}
f=1MHz
I_E=0 / I_C=0
T_a=25 °C
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


P_c — T_a
COLLECTOR POWER DISSIPATION P_c (W)
AMBIENT TEMPERATURE T_a (℃)