

2SA838

Silicon PNP epitaxial planer type

For high-frequency amplification

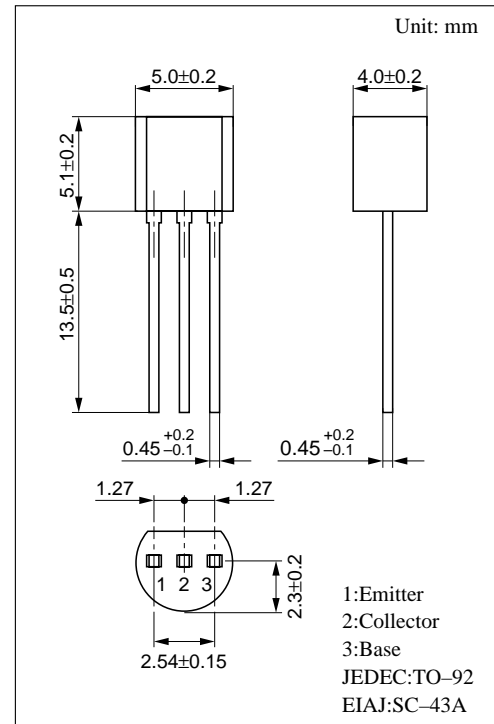
Complementary to 2SC1359

Features

- High transition frequency f_T .

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	-30	V
Collector to emitter voltage	V_{CEO}	-20	V
Emitter to base voltage	V_{EBO}	-5	V
Collector current	I_C	-30	mA
Collector power dissipation	P_C	250	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C



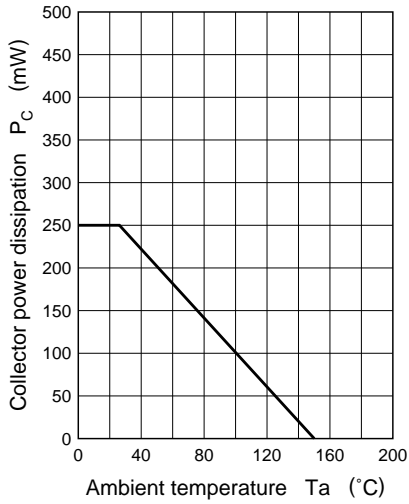
Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -10V, I_E = 0$			-0.1	μA
	I_{CEO}	$V_{CE} = -20V, I_B = 0$			-100	
Emitter cutoff current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-10	μA
Forward current transfer ratio	h_{FE}^*	$V_{CE} = -10V, I_C = -1mA$	70		220	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10mA, I_B = -1mA$		-0.1		V
Base to emitter voltage	V_{BE}	$V_{CE} = -10V, I_C = -1mA$		-0.7		V
Transition frequency	f_T	$V_{CB} = -10V, I_E = 1mA, f = 200MHz$	150	300		MHz
Noise figure	NF	$V_{CB} = -10V, I_E = 1mA, f = 5MHz$		2.8	4.0	dB
Reverse transfer impedance	Z_{rb}	$V_{CE} = -10V, I_C = -1mA, f = 2MHz$		22	50	Ω
Common emitter reverse transfer capacitance	C_{re}	$V_{CE} = -10V, I_C = -1mA, f = 10.7MHz$		1.2	2.0	pF

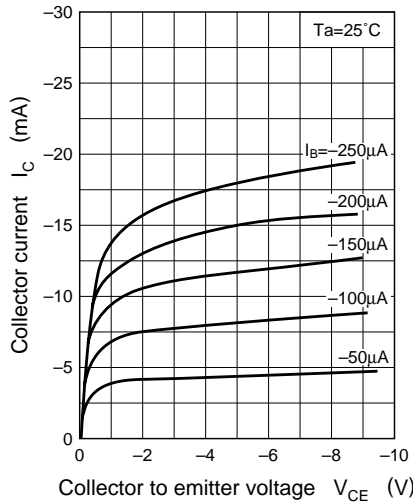
* h_{FE} Rank classification

Rank	B	C
h_{FE}	70 ~ 140	110 ~ 220

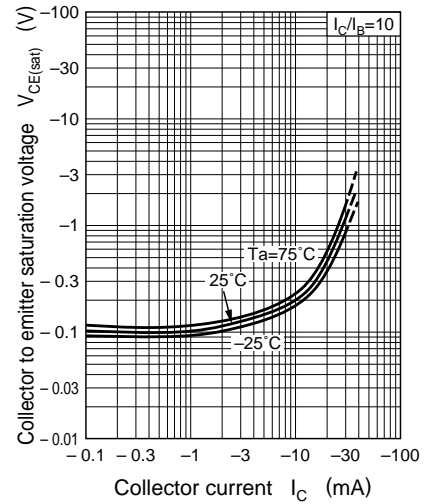
$P_C - T_a$



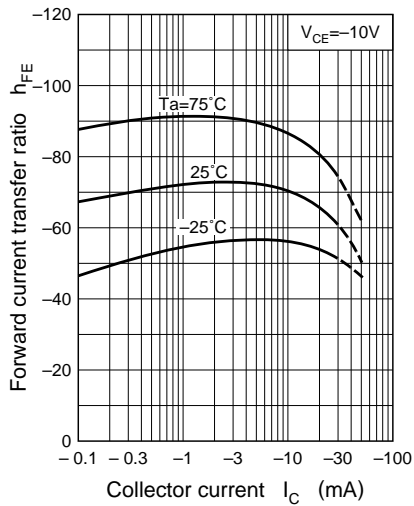
$I_C - V_{CE}$



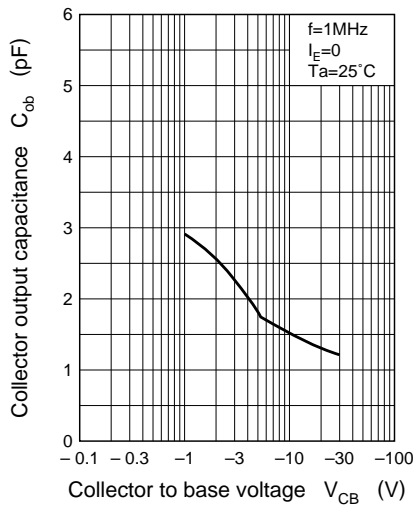
$V_{CE(sat)} - I_C$



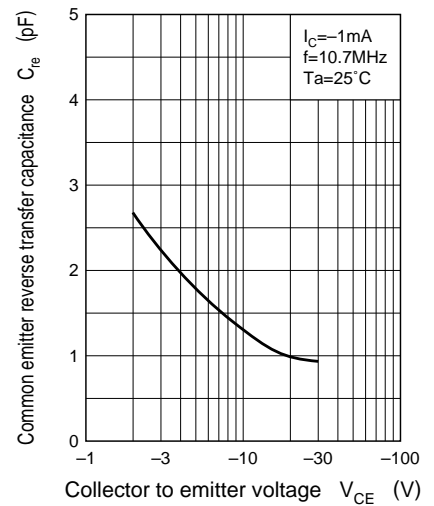
$h_{FE} - I_C$



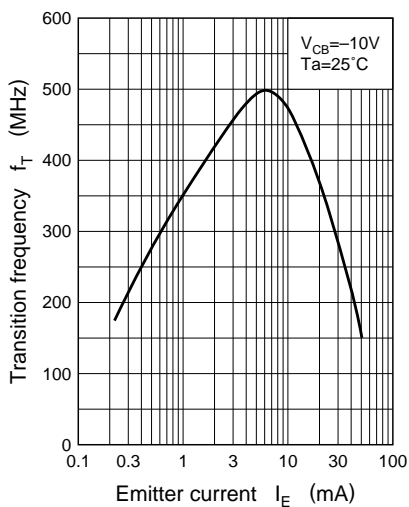
$C_{ob} - V_{CB}$



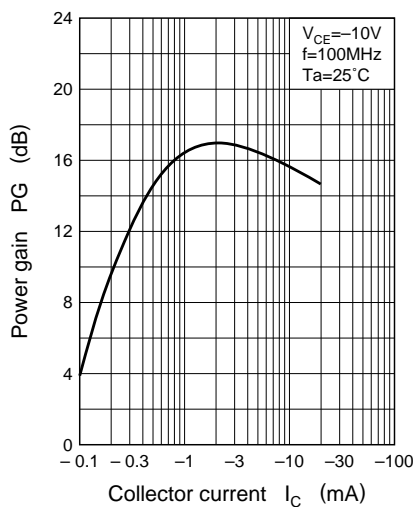
$C_{re} - V_{CE}$



$f_T - I_E$



$PG - I_C$



$NF - I_E$

