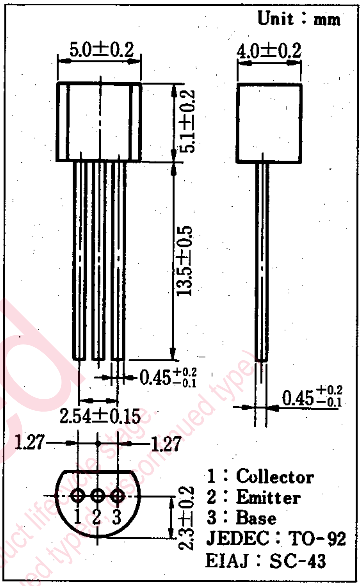
2SC1687, 2SC1688

Silicon NPN Epitaxial Planar Type

For high-frequency amplification

■ Package Dimensions



■ Features

- Small small-signal reverse transfer capacitance C_{re}
- High collector-emitter saturation voltage $V_{CE(sat)}$
- Emitter terminal is center

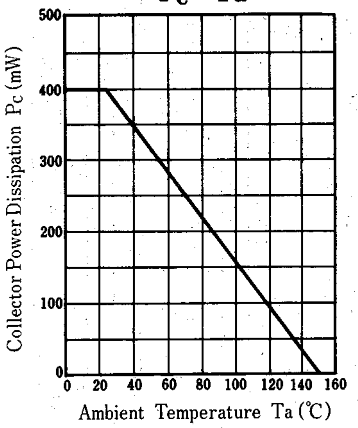
■ Absolute Maximum Ratings (Ta=25°C)

Item		Symbol	Value	Unit
Collector-Base Voltage	2SC1687	V_{CBO}	40	V
	2SC1688		50	
Collector-Emitter Voltage	2SC1687	V_{CEO}	25	V
	2SC1688		40	
Emitter-Base Voltage		V_{EBO}	4	V
Collector Current		I_C	30	mA
Collector Power Dissipation		P_C	400	mW
Junction Temperature		T_j	150	℃
Storage Temperature		T_{stg}	−55～+150	℃

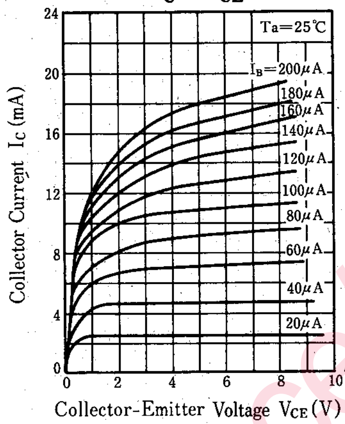
■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector Cutoff Current	I_{CBO}	V_{CB}=40 V, I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4 V, I_C=0			10	μA
DC Current Gain	h_{FE}	V_{CE}=10 V, I_C=7 mA	38			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=10 mA, I_B=1 mA			0.8	V
Transition Frequency	f_T	V_{CB}=10V, I_E=−5mA, f=100MHz	360	550	820	MHz
Small-Signal Reverse Transfer Capacitance	C_{re}	V_{CE}=10 V, I_C=1 mA f=10.7 MHz		0.37	0.50	pF
Forward Transfer Admittance	y_{fe}	V_{CB}=5 V, I_E=−7 mA, f=35 MHz	110	140		mS
Power Gain	PG	V_{CC}=6 V, I_C=7 mA, f=58 MHz	21	25		dB

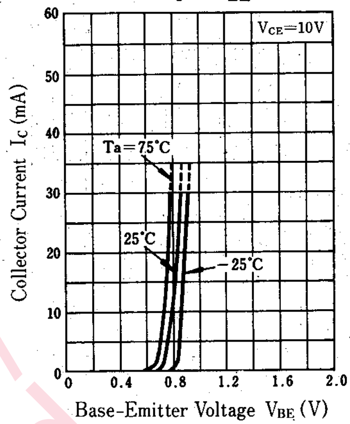
$P_C - T_a$



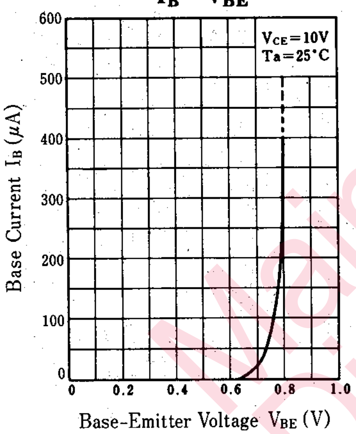
$I_C - V_{CE}$



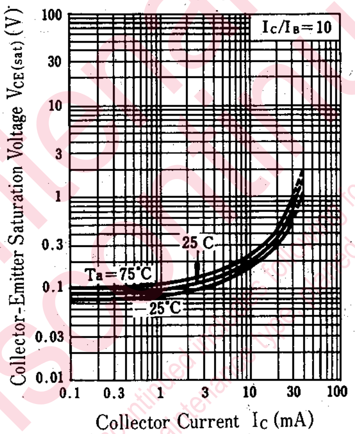
$I_C - V_{BE}$



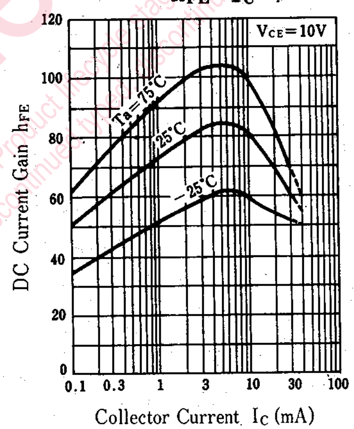
$I_B - V_{BE}$



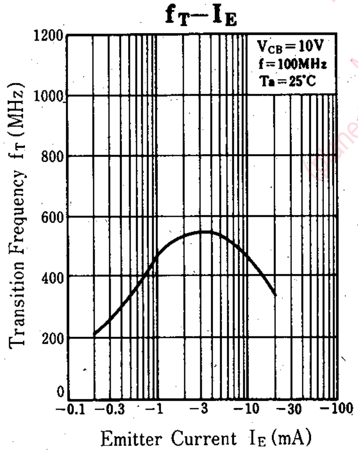
$V_{CE(sat)} - I_C$



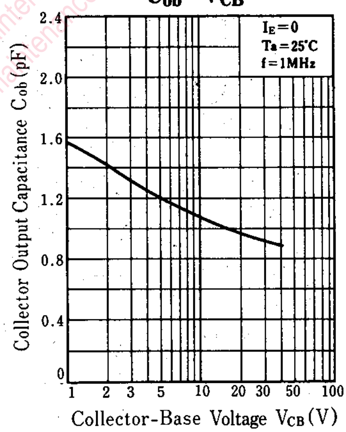
$h_{FE} - I_C$



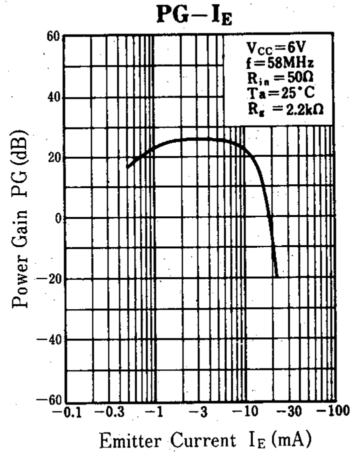
$f_T - I_E$

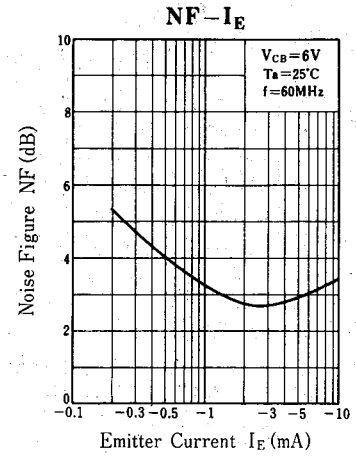


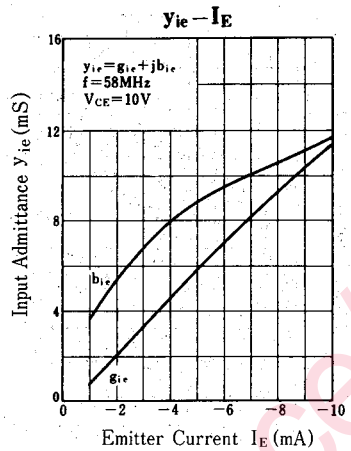
$C_{ob} - V_{CB}$

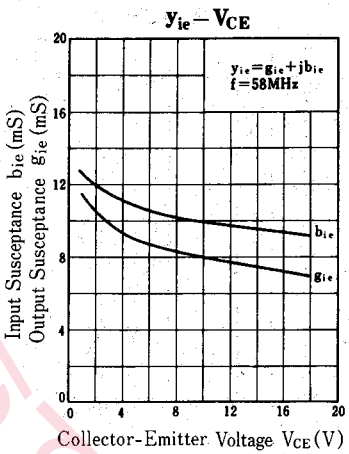


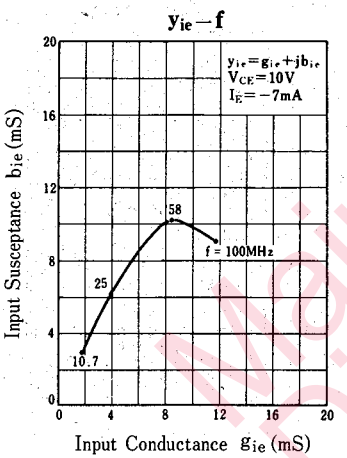
$PG - I_E$

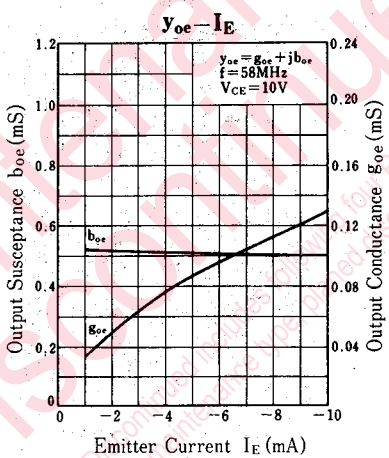


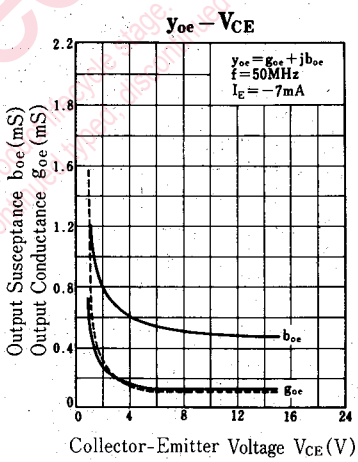


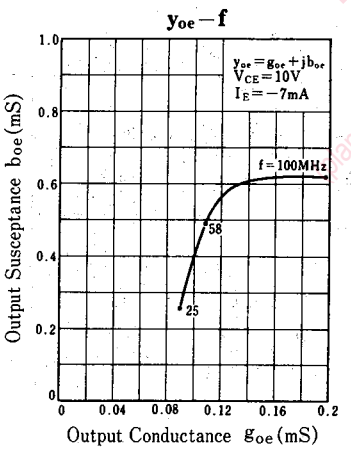


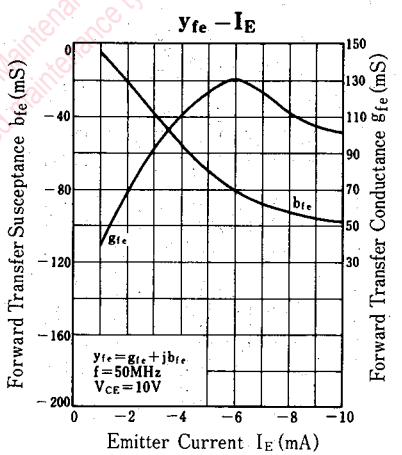


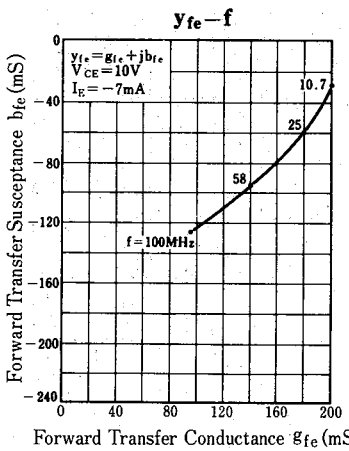












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