〈SMALL-SIGNAL TRANSISTOR〉

2SC3245,2SC3245A

FOR PRE-DRIVE APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

2SC3245,2SC3245A is a silicon NPN epitaxial type transistor. Designed with high voltage, high h_{FE}, high f_T, low C_{ob} and excellent h_{FE} linearity.

Complementary with 2SA1285,2SA1285A.

FEATURE

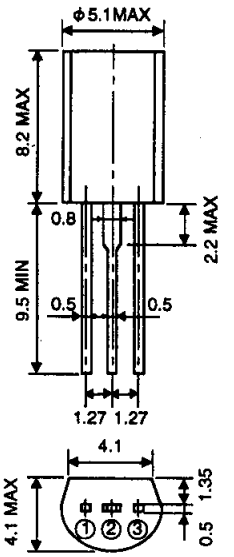
- High voltage $V_{CEO(sat)}$=120,150V
- High f_T f_T=200MHz, low C_{ob} C_{ob}=2.3pF typ
- High h_{FE} h_{FE}=150 to 800
- High collector dissipation P_C=900mW

APPLICATION

Pre-drive stage of output 40 to 80W main amplifier. Final stage of tone control amplifier.

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

① : EMITTER
② : COLLECTOR EIAJ : —
③ : BASE JEDEC : —

Note)
The dimension without tolerance represent central value.

MAXIMUM RATINGS (Ta=25℃)

Symbol	Parameter	Ratings		Unit
		2SC3245	2SC3245A	
V_{CBO}	Collector to Base voltage	120	150	V
V_{EBO}	Emitter to Base voltage	5	5	V
V_{CEO}	Collector to Emitter voltage	120	150	V
I_C	Collector current	100		mA
P_C	Collector dissipation	900		mW
T_j	Junction temperature	+150		℃
T_{stg}	Storage temperature	-55 to +150		℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

Symbol	Parameter	Test conditions	Limits						Unit
			2SC3245			2SC3245A			
			Min	Typ	Max	Min	Typ	Max	
$V_{(BR)CBO}$	C to B break down voltage	I_C=10μA,I_E=0	120			150			V
$V_{(BR)EBO}$	E to B break down voltage	I_E=10μA,I_C=0	5			5			V
$V_{(BR)CEO}$	C to E break down voltage	I_C=1mA,R_{BE}=∞	120			150			V
I_{CBO}	Collector cut off current	V_{CB}=100V,I_E=0			0.1			0.1	μA
I_{EBO}	Emitter cut off current	V_{EB}=4V,I_C=0			0.1			0.1	μA
h_{FE} *	DC forward current gain	V_{CE}=10V,I_C=10mA	150		800	150		500	—
$V_{CE(sat)}$	C to E saturation voltage	I_C=50mA,I_B=2.5mA		0.17	0.6		0.17	0.6	V
f_T	Gain band width product	V_{CE}=10V,I_E=-10mA		200			200		MHz
C_{ob}	Collector output capacitance	V_{CB}=-10V,I_E=0,f=1MHz		2.3			2.3		pF

* : It shows h_{FE} classification in right table.

Item	E	F	G
h_{FE}	150 to 300	250 to 500	400 to 800

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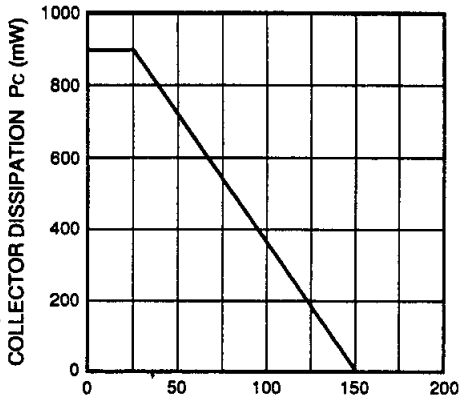
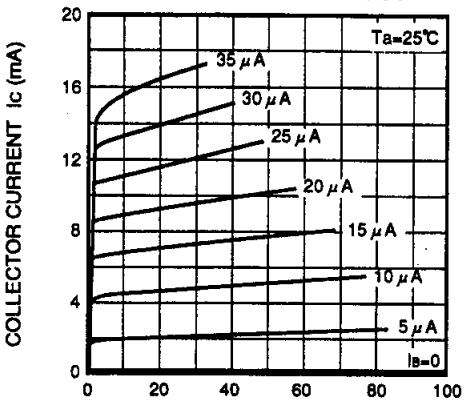
TYPICAL CHARACTERISTICS

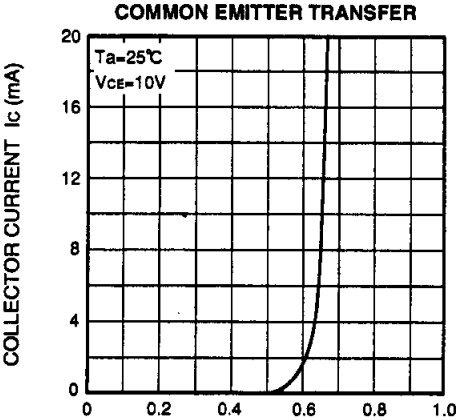
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



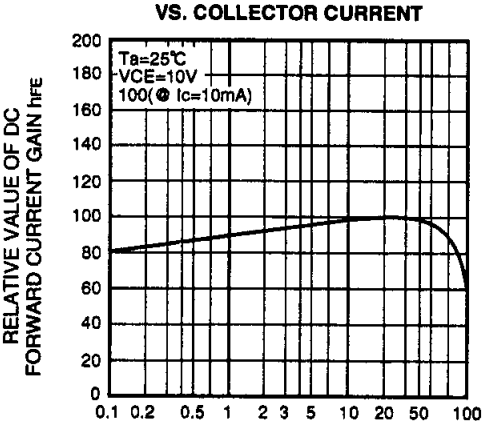
COMMON EMITTER OUTPUT



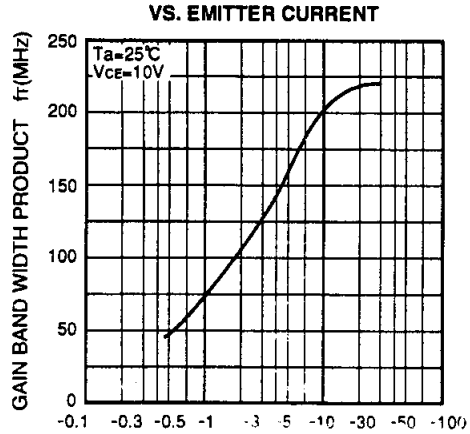
COMMON EMITTER TRANSFER



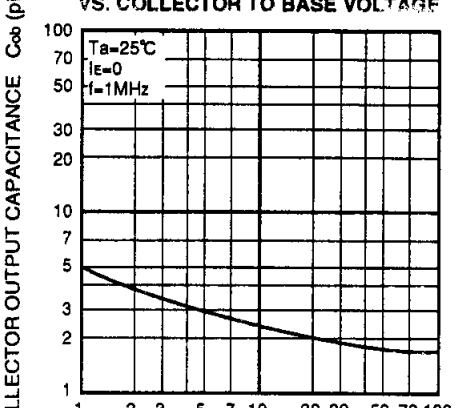
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



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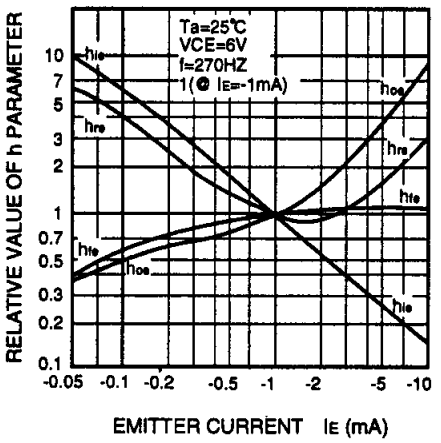
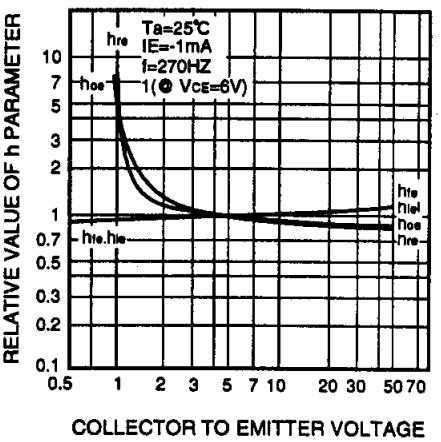
h PARAMETER VS. EMITTER CURRENT



h PARAMETER VS. COLLECTOR TO EMITTER VOLTAGE



COMMON EMITTER h PARAMETER (TYPICAL VALUE)

Symbol	Parameter	Test conditions	Limits	Unit
hie	Closed loop small signal input impedance	Ta=25℃ VCE=6V IE=-1mA f=270Hz	18	kΩ
hre	Open loop small signal reverse voltage amplification factor		0.08	$\times 10^{-3}$
hfe	Closed loop small signal forward current amplification factor		600	—
hoe	Open loop small signal output admittance		10	μS

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