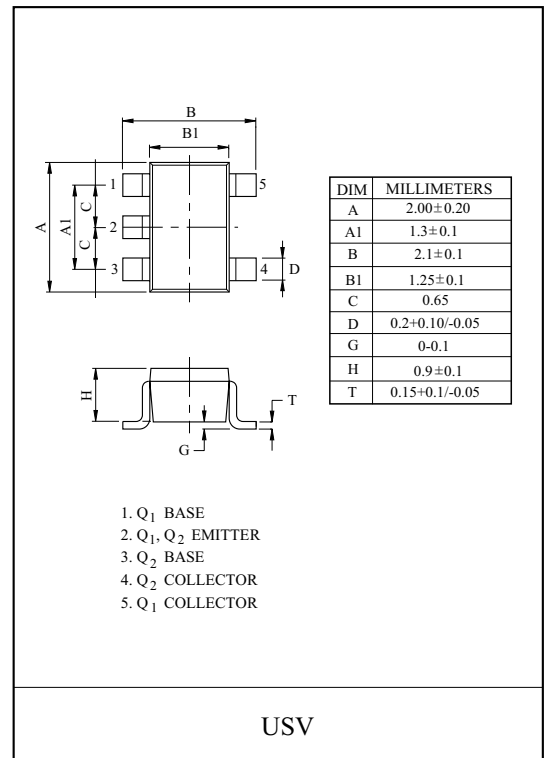


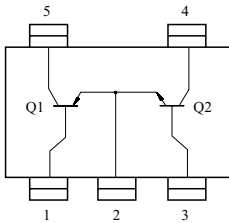
GENERAL PURPOSE APPLICATION.

FEATURES

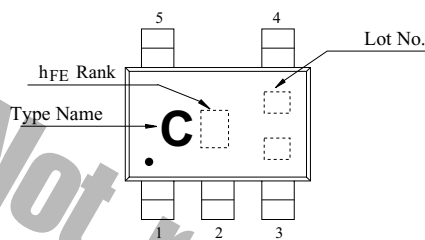
- Including two devices in USV.
(Ultra Super mini type with 5 leads)
- Simplify circuit design.
- Reduce a quantity of parts and manufacturing process



EQUIVALENT CIRCUIT(TOP VIEW)



Marking



Q₁ MAXIMUM RATING (Ta=25)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CBO}	-50	V
Collector-Emitter Voltage	V _{CEO}	-50	V
Emitter-Base Voltage	V _{EBO}	-5	V
Collector Current	I _C	-150	mA
Base Current	I _B	-30	mA

Q₂ MAXIMUM RATING (Ta=25)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	150	mA
Base Current	I _B	30	mA

Q₁,Q₂ MAXIMUM RATING (Ta=25)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P _C *	200	mW
Junction Temperature	T _j	150	
Storage Temperature Range	T _{stg}	-55 150	

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Q₁ ELECTRICAL CHARACTERISTICS (Ta=25)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut-off Current	I _{CB0}	V _{CB} =-50V, I _E =0	-	-	-0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} =-5V, I _C =0	-	-	-0.1	μA
DC Current Gain	h _{FE} (Note)	V _{CE} =-6V, I _C =-2mA	120	-	400	
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-100mA, I _B =-10mA	-	-0.1	-0.3	V
Transition Frequency	f _T	V _{CE} =-10V, I _C =-1mA	80	-	-	MHz
Collector Output Capacitance	C _{ob}	V _{CB} =-10V, I _E =0, f=1MHz	-	4.0	7.0	pF
Noise Figure	NF	V _{CE} =-6V, I _C =-0.1mA, f=1kHz, R _g =10kΩ	-	1.0	10	dB

Note)h_{FE} Classification : Y(4)120~240, GR(6)200~400

Q₂ ELECTRICAL CHARACTERISTICS (Ta=25)

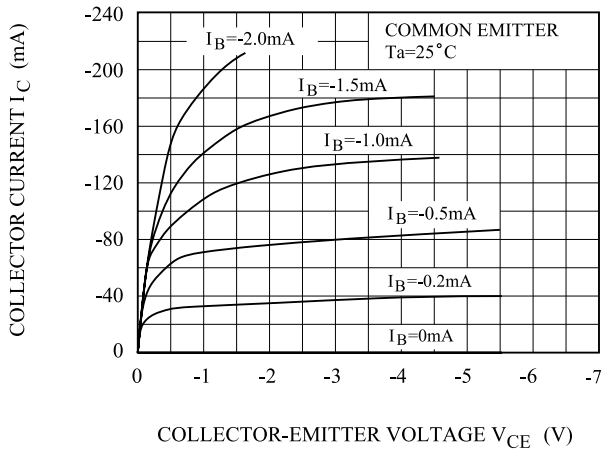
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut-off Current	I _{CB0}	V _{CB} =60V, I _E =0	-	-	0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} =5V, I _C =0	-	-	0.1	μA
DC Current Gain	h _{FE} (Note)	V _{CE} =6V, I _C =2mA	120	-	400	
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =100mA, I _B =10mA	-	0.1	0.25	V
Transition Frequency	f _T	V _{CE} =10V, I _C =1mA	80	-	-	MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz	-	2.0	3.5	pF
Noise Figure	NF	V _{CE} =6V, I _C =0.1mA, f=1kHz, R _g =10kΩ	-	1.0	10	dB

Note)h_{FE} Classification : Y(4)120~240, GR(6)200~400

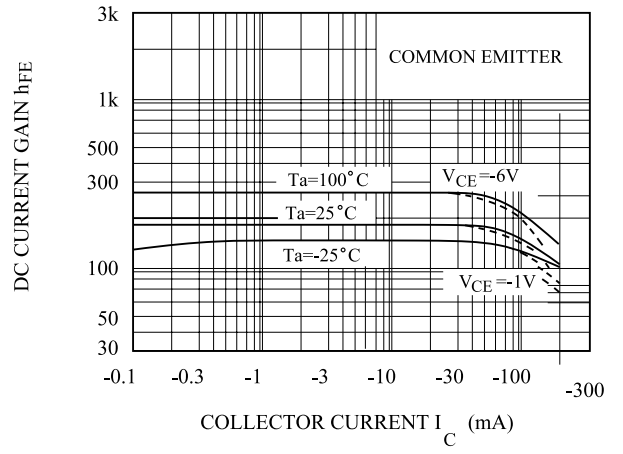
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Q₁ (PNP TRANSISTOR)

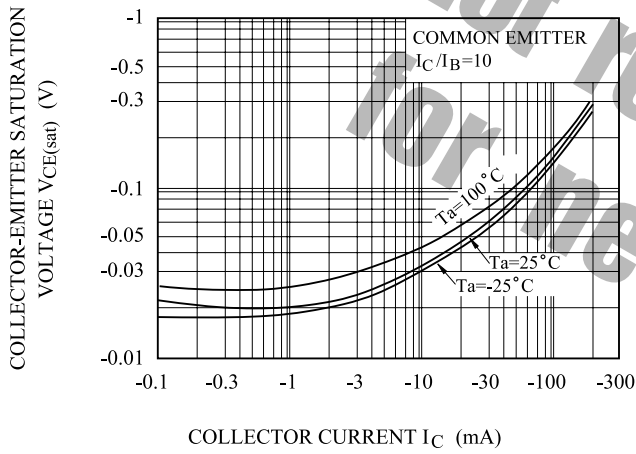
$I_C - V_{CE}$



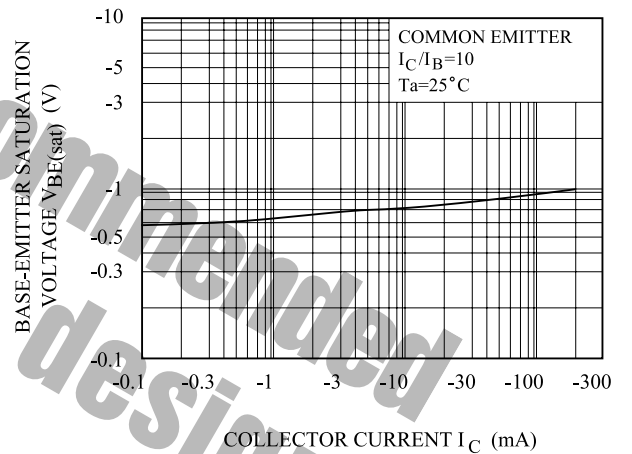
$h_{FE} - I_C$



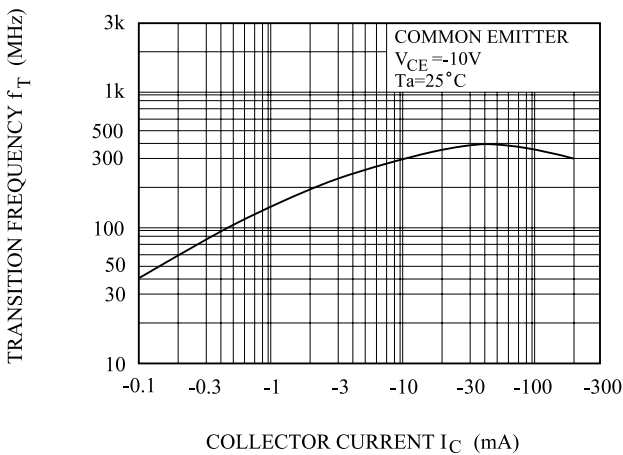
$V_{CE(sat)} - I_C$



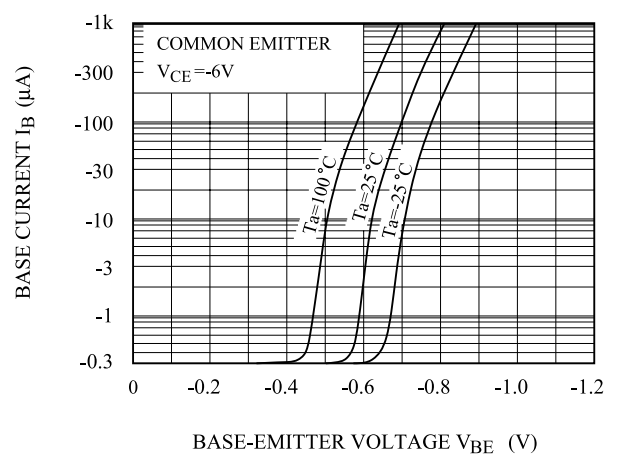
$V_{BE(sat)} - I_C$



$f_T - I_C$



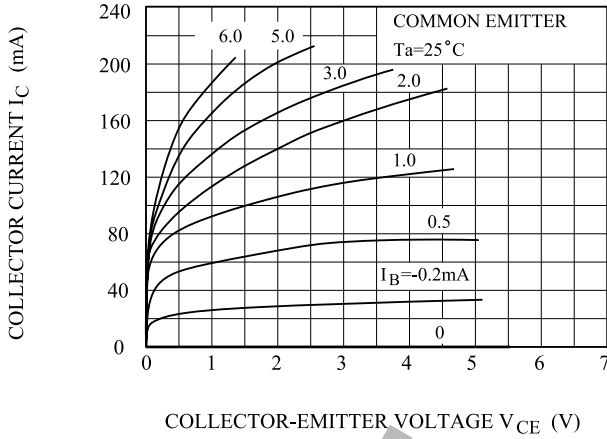
$I_B - V_{BE}$



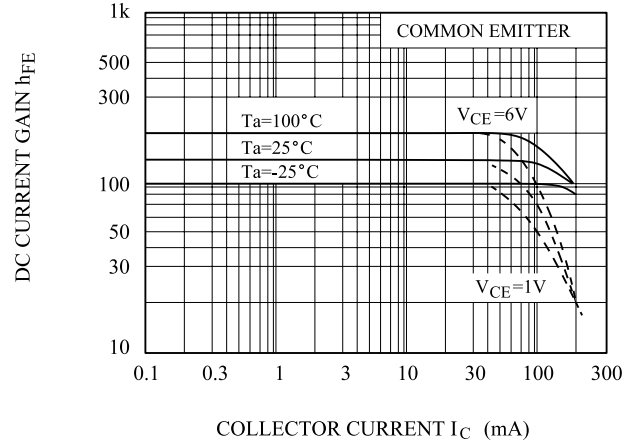
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Q₂ (NPN TRANSISTOR)

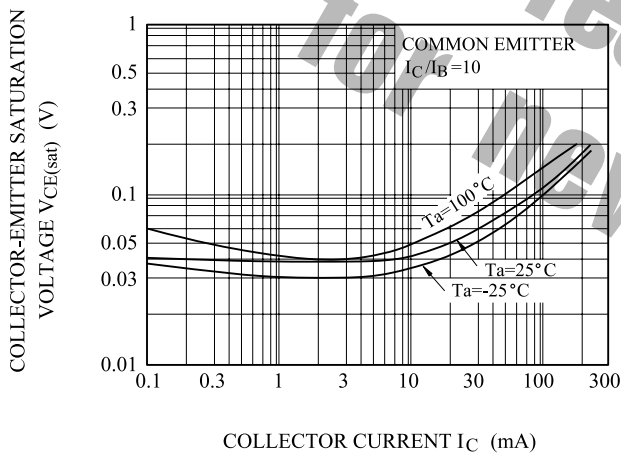
$I_C - V_{CE}$



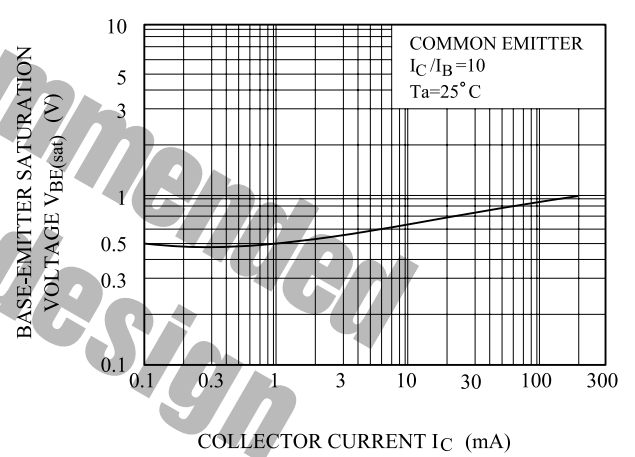
$h_{FE} - I_C$



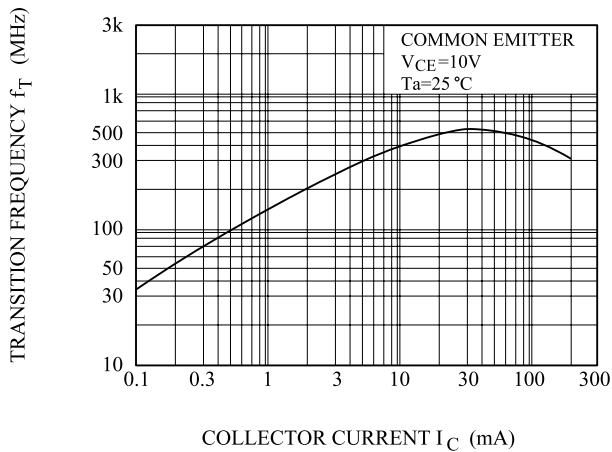
$V_{CE(sat)} - I_C$



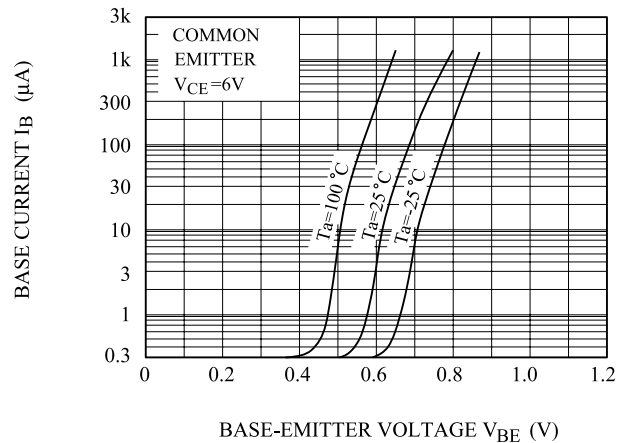
$V_{BE(sat)} - I_C$



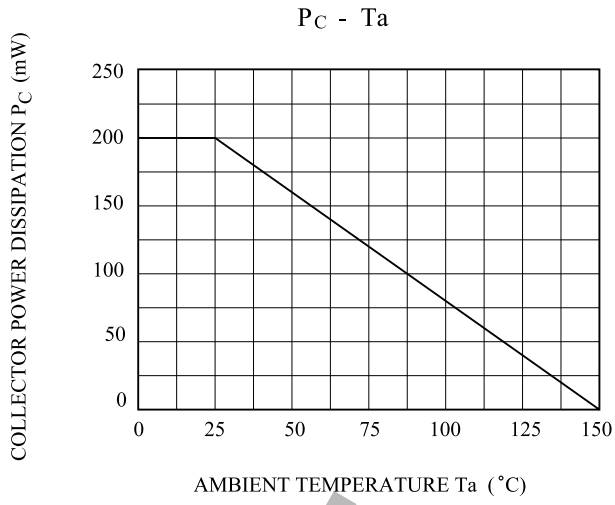
$f_T - I_C$



$I_B - V_{BE}$



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**Not recommended
for new design**