Ordering number:EN485F

NPN Epitaxial Planar Silicon Transistor

2SC2314

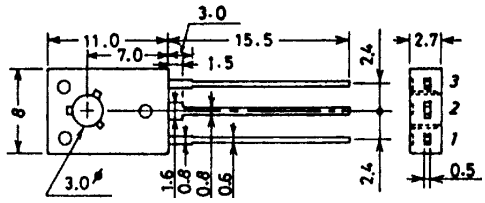
27MHz CB Transceiver Driver Applications

Package Dimensions

unit:mm

2009B

[2SC2314]



JEDEC : TO-126

1 : Emitter
2 : Collector
3 : Base

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}	R_{BE}=150Ω	75	V
Collector-to-Emitter Voltage	V_{CER}		75	V
Collector-to-Emitter Voltage	V_{CEO}		45	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		1.0	A
Collector Current (Pulse)	I_{CP}		1.5	A
Collector Dissipation	P_C		750	mW
		Tc=25˚C	5	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0			1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1.0	μA
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	75			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CER}$	I_C=1mA, R_{BE}=150Ω	75			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	45			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	5			V

* : The 2SC2314 are classified by 500mA h_{FE} as follows :

60	D	120	100	E	200	160	F	320

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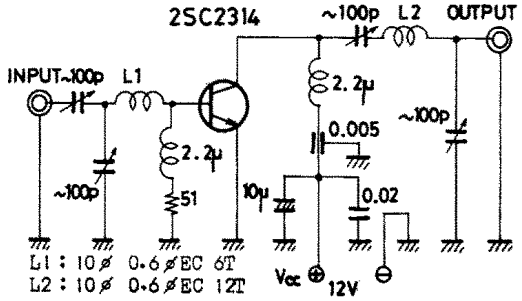
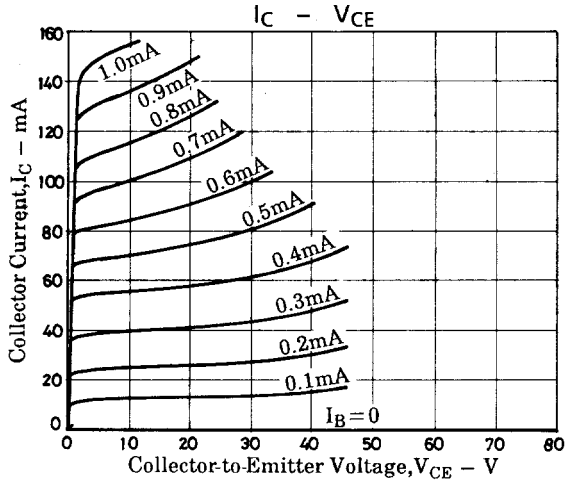
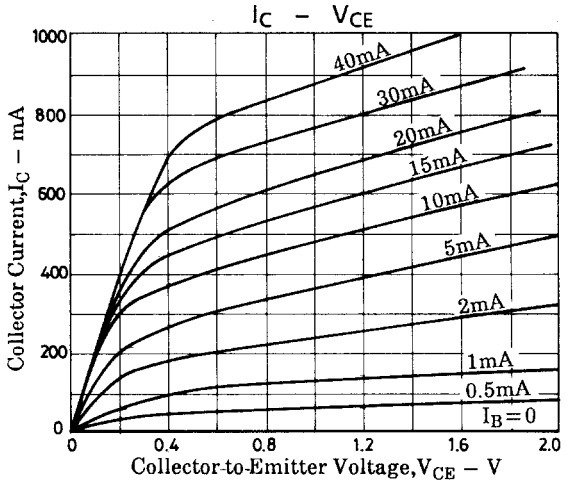
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=500mA	60*		320*	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA	180	250		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		15	25	pF
Output Power	P_O	V_{CC}=12V, f=27MHz, Pi=35mW	1.0	1.8		W
Collector Efficiency	ηc	See specified test circuit.	60			%
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=500mA, I_B=50mA		0.2	0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=500mA, I_B=50mA		0.9	1.2	V

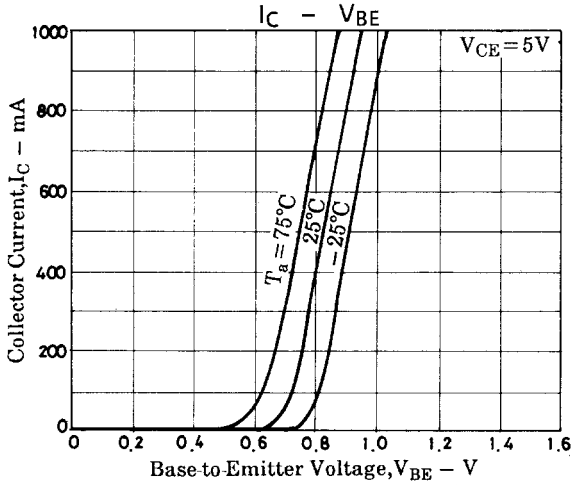
Collector Effieiency Test Circuit

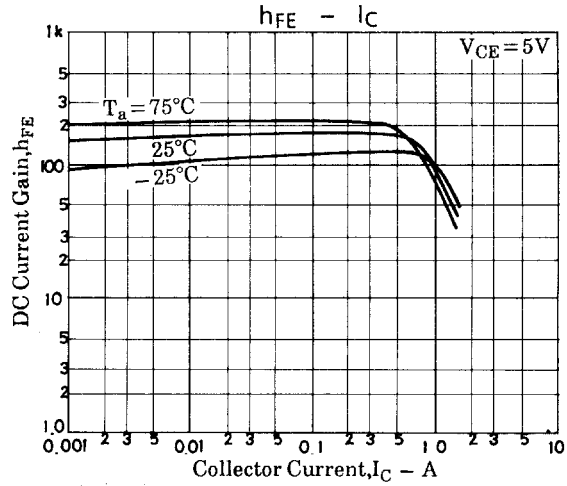


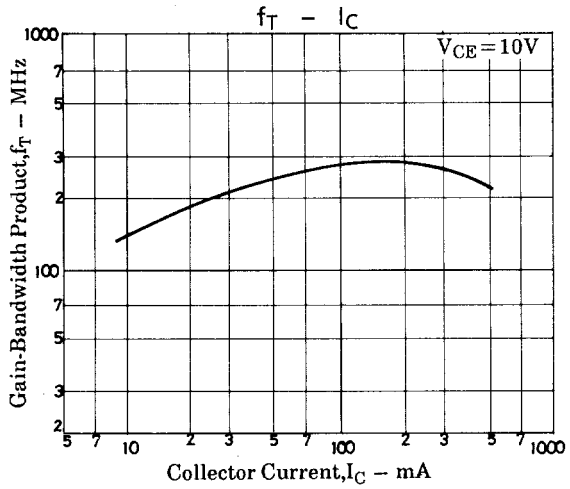
Unit (resistance : Ω, capacitance : F)

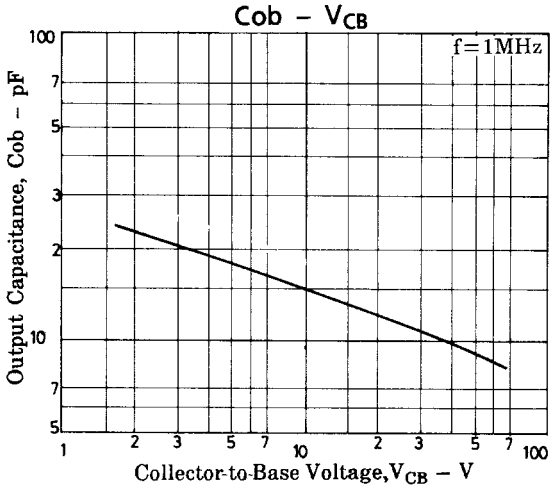


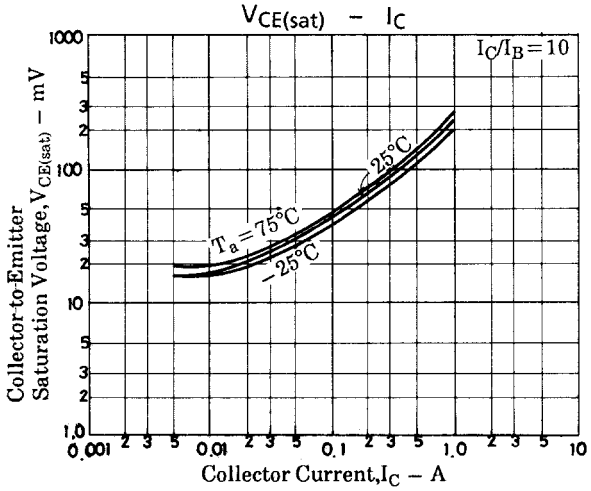


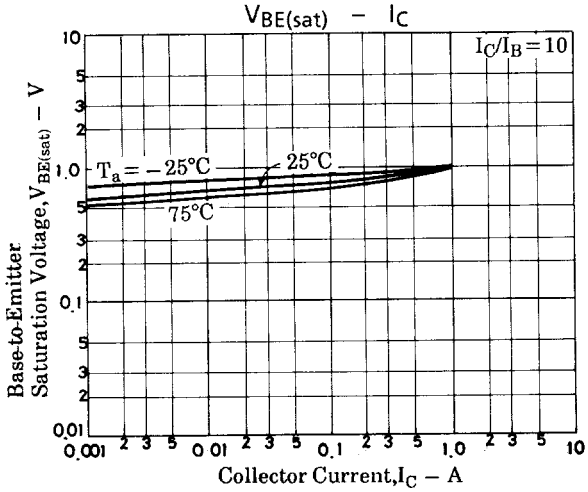


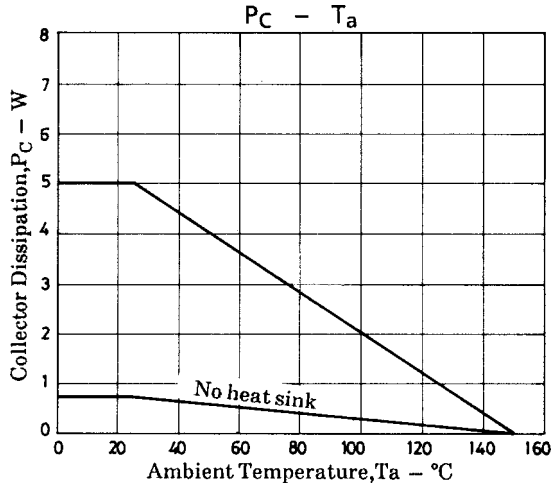



fT – IC
VCE=10V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage,VCB – V


VCE(sat) – IC
IC/IB=10
Collector-to-Emitter Saturation Voltage,VCE(sat) – mV
Ta=75°C
25°C
–25°C
Collector Current,IC – A


VBE(sat) – IC
IC/IB=10
Base-to-Emitter Saturation Voltage,VBE(sat) – V
Ta=–25°C
25°C
75°C
Collector Current,IC – A


PC – Ta
Collector Dissipation,PC – W
No heat sink
Ambient Temperature,Ta – °C

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