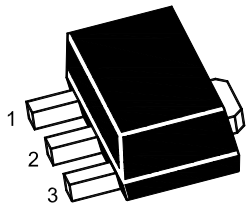
2SA514U

PNP Silicon Epitaxial Planar Transistor

Medium power transistor



1.Base 2.Collector 3.Emitter

SOT-89 Plastic Package

Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	80	V
Collector Emitter Voltage	$-V_{CEO}$	80	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	0.7	A
Collector Current [1)]	$-I_{CP}$	1.4	A
Collector Power Dissipation	P_C	0.5	W
Collector Power Dissipation [2)]	P_C	2	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

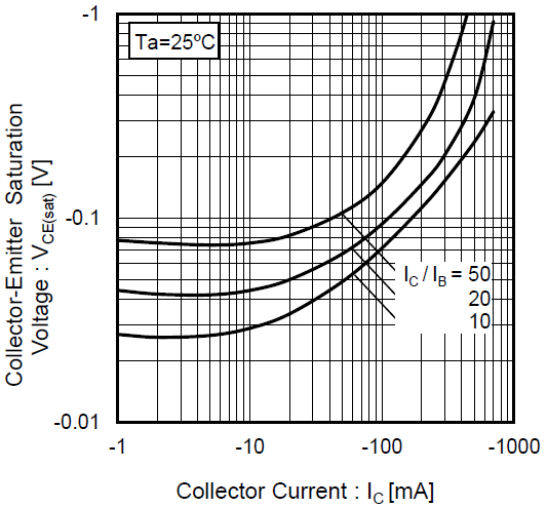
1) Pw=10ms , single pulse.

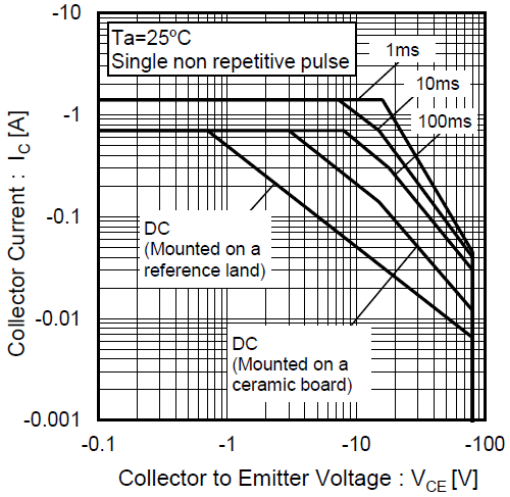
2) Mounted on a ceramic board (40×40×0.7mm).

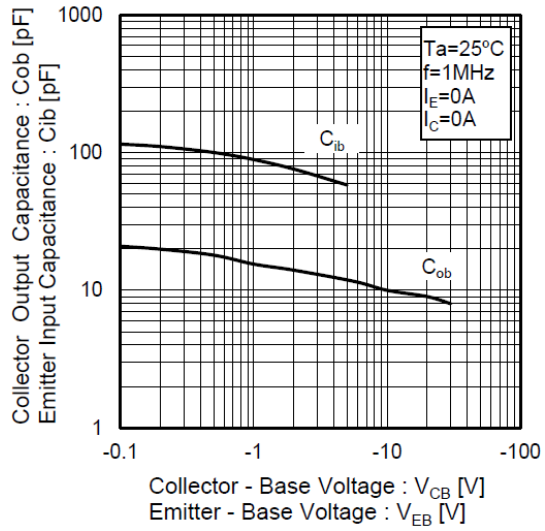
Dated：10/01/2020 Rev : 01

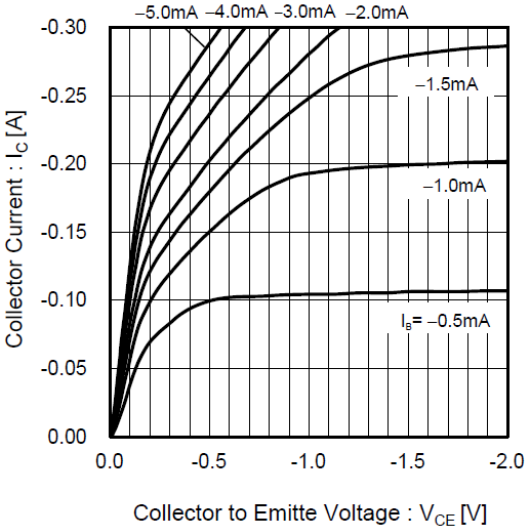
Characteristics at T_a = 25℃

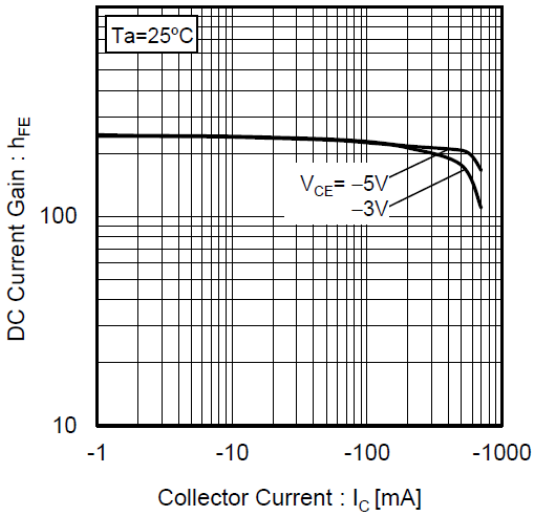
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 3 V, $-I_C$ = 100 mA	h_{FE}	120	-	390	-
Collector Base Cutoff Current at $-V_{CB}$ = 80 V	$-I_{CBO}$	-	-	1	μA
Emitter Base Cutoff Current at $-V_{EB}$ = 4 V	$-I_{EBO}$	-	-	1	μA
Collector Emitter Breakdown Voltage at $-I_C$ = 1 mA	$-V_{(BR)CEO}$	80	-	-	V
Collector Base Breakdown Voltage at $-I_C$ = 100 μA	$-V_{(BR)CBO}$	80	-	-	V
Emitter Base Breakdown Voltage at $-I_E$= 100 μA	$-V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 300 mA, $-I_B$ = 15 mA	$-V_{CE(sat)}$	-	-	0.4	V
Transition Frequency at $-V_{CE}$ = 10 V, $-I_E$ = 200 mA , f = 100 MHz	f_T	-	380	-	MHz
Collector Output Capacitance at $-V_{CB}$ = 10 V, I_E = 0 A , f = 1 MHz	C_{ob}	-	10	-	pF
Turn-on Time at $-V_{CC}$ = 30 V, $-I_{B1}$ = 35 mA , I_{B2} = 35 mA , $-I_C$ = 0.35 A	t_{on}	-	50	-	ns
Storage Time at $-V_{CC}$ = 30 V, $-I_{B1}$ = 35 mA , I_{B2} = 35 mA , $-I_C$ = 0.35 A	t_{stg}	-	350	-	ns
Fall Time at $-V_{CC}$ = 30 V, $-I_{B1}$ = 35 mA , I_{B2} = 35 mA , $-I_C$ = 0.35 A	t_f	-	50	-	ns

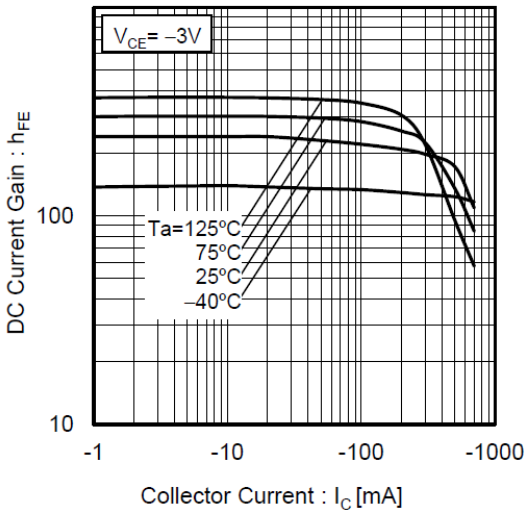

Ta=25°C
Collector-Emitter Saturation Voltage : $V_{CE(sat)}$ [V]
I_C / I_B = 50
20
10
Collector Current : I_C [mA]


Ta=25°C
Single non repetitive pulse
1ms
10ms
100ms
DC
(Mounted on a reference land)
DC
(Mounted on a ceramic board)
Collector Current : I_C [A]
Collector to Emitter Voltage : V_{CE} [V]

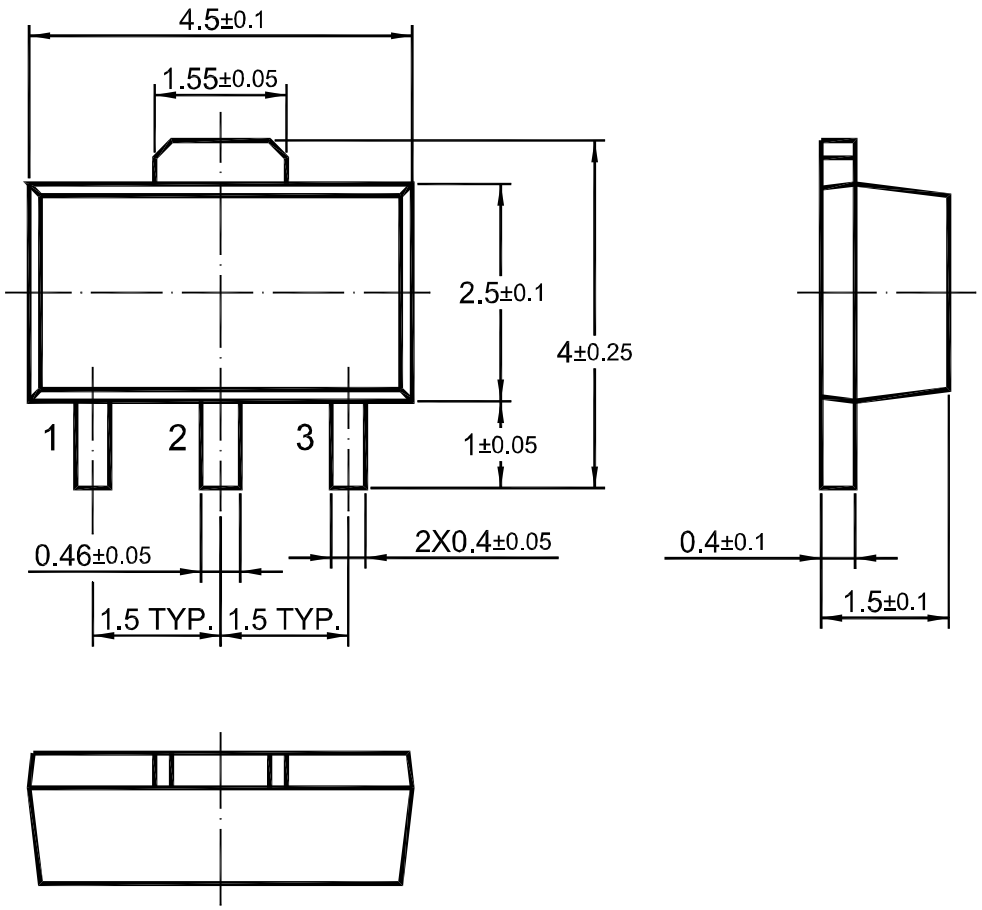

Ta=25°C
f=1MHz
I_E=0A
I_C=0A
C_{ib}
C_{ob}
Collector Output Capacitance : Cob [pF]
Emitter Input Capacitance : Cib [pF]
Collector - Base Voltage : V_{CB} [V]
Emitter - Base Voltage : V_{EB} [V]


−5.0mA −4.0mA −3.0mA −2.0mA
−1.5mA
−1.0mA
I_B= −0.5mA
Collector Current : I_C [A]
Collector to Emitte Voltage : V_{CE} [V]


Ta=25°C
V_{CE}= −5V
−3V
DC Current Gain : h_{FE}
Collector Current : I_C [mA]


V_{CE}= −3V
Ta=125°C
75°C
25°C
−40°C
DC Current Gain : h_{FE}
Collector Current : I_C [mA]

SOT-89 PACKAGE OUTLINE



Dimensions in mm