

# -2A / -30V Bipolar transistor

## 2SB1714

### ●Applications

Low frequency amplification, driver

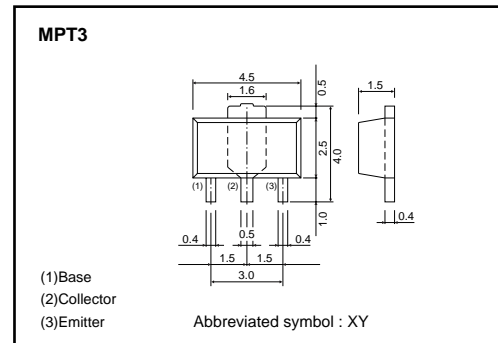
### ●Features

- 1) Collector current is high.
- 2) Low collector-emitter saturation voltage.  
( $V_{CE(sat)} \leq -370\text{mV}$ , at  $I_C = -1.5\text{A}$ ,  $I_B = -75\text{mA}$ )

### ●Structure

PNP epitaxial planar silicon transistor

### ●External dimensions (Unit : mm)



### ●Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	-30	V
Collector-emitter voltage	$V_{CE0}$	-30	V
Emitter-base voltage	$V_{EB0}$	-6	V
Collector current	DC	$I_C$	-2
	Pulse	$I_{CP}$	-4 *1
Power dissipation	$P_C$	0.5 *2	W
		2 *3	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*1  $P_w=1\text{ms}$ , Pulsed.

\*2 Each terminal mounted on a recommended land.

\*3 Mounted on a 40x40x0.7mm ceramic board.

### ●Packaging specifications

Package	MPT3
Package	MPT3
Packaging type	Taping
Code	T100
Part No.	Basic ordering unit (pieces)
2SB1714	1000
	○

### ●Electrical characteristics ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	$BV_{CE0}$	-30	-	-	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	$BV_{CB0}$	-30	-	-		$I_C = -10\mu\text{A}$
Emitter-base breakdown voltage	$BV_{EB0}$	-6	-	-		$I_E = -10\mu\text{A}$
Collector cut-off current	$I_{CBO}$	-	-	-100	nA	$V_{CB} = -30\text{V}$
Emitter cut-off current	$I_{EBO}$	-	-	-100		$V_{EB} = -6\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$ *	-	-180	-370	mV	$I_C/I_B = -1.5\text{A} / -75\text{A}$
DC current gain	$h_{FE}$	270	-	680	-	$V_{CE} = -2\text{V}$ , $I_C = -200\text{mA}$
Transition frequency	$f_T$	-	280	-	MHz	$V_{CE} = -2\text{V}$ , $I_E = 200\text{mA}$ , $f = 100\text{MHz}$
Collector output capacitance	$C_{ob}$	-	20	-	pF	$V_{CB} = -10\text{V}$ , $I_E = 0\text{mA}$ , $f = 1\text{MHz}$

\* Pulsed

Transistors

●Electrical characteristics curves

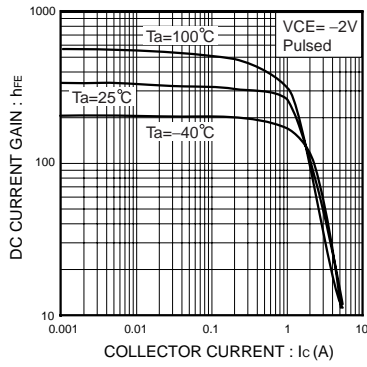


Fig.1 DV current gain vs. collector current

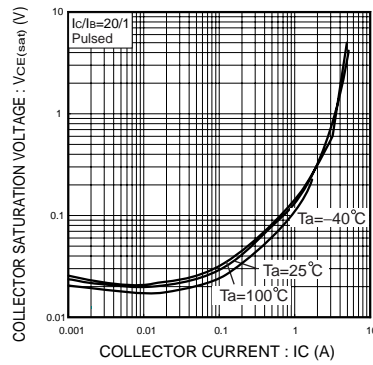


Fig.2 Collector-emitter saturation voltage vs. collector current

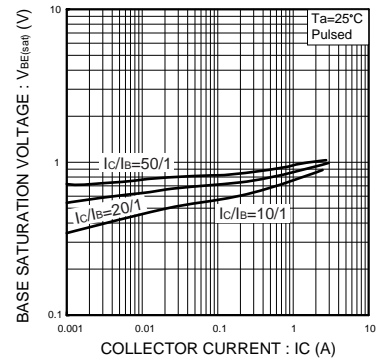


Fig.3 Base-emitter saturation voltage vs. collector current

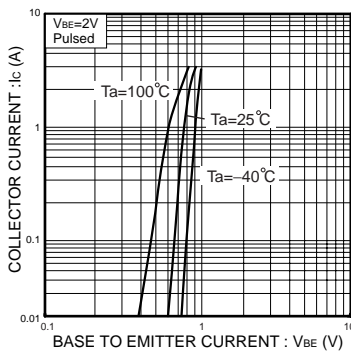


Fig.4 Grounded emitter propagation characteristics

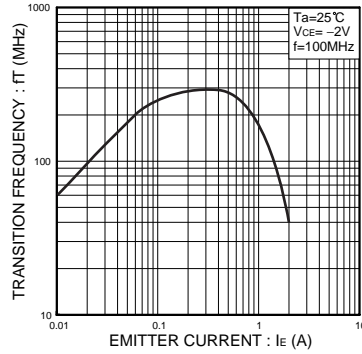


Fig.5 Gain bandwidth product vs. emitter current

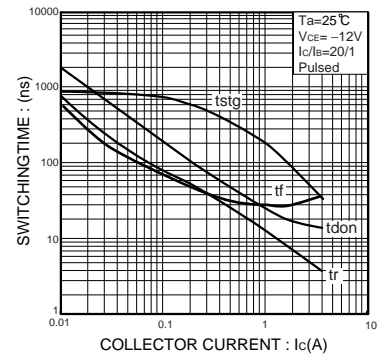


Fig.6 Switching time

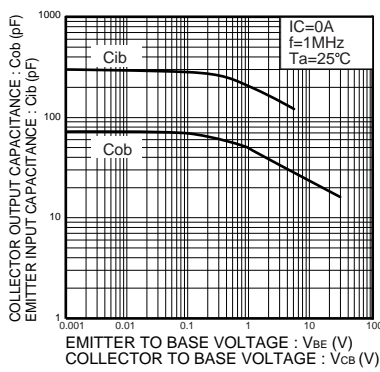


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

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