



**2SB647**

**PNP EPITAXIAL SILICON TRANSISTOR**

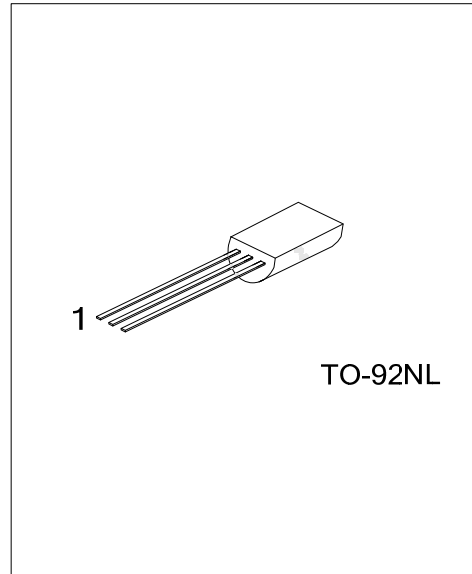
**SILICON PNP EPITAXIAL**

■ DESCRIPTION

The UTC **2SB647** is a PNP epitaxial silicon transistor, which can be used as a low frequency power amplifier.

■ APPLICATION

\* Low frequency power amplifier



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SB647L-x-T9N-B	2SB647G-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SB647L-x-T9N-K	2SB647G-x-T9N-K	TO-92NL	E	C	B	Bulk

<p>2SB647L-x-T9N-B</p>	<p>(1) B: Tape Box, K: Bulk                  (2) T9N: TO-92NL                  (3) refer to CLASSIFICATION OF <math>h_{FE1}</math>                  (4) L: Lead Free, G: Halogen Free</p>
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■ MARKING INFORMATION

PACKAGE	MARKING
TO-92NL	

■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-120	V
Collector-Emitter Voltage	$V_{CEO}$	-80	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Collector Current	$I_C$	-1	A
Collector Peak Current	$I_{CP}$	-2	A
Collector Power Dissipation	$P_C$	0.9	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2.  $PW \leq 10\text{ms}$ , Duty cycle  $\leq 20\%$

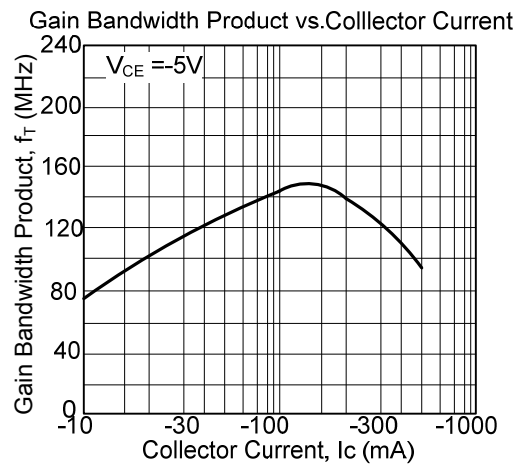
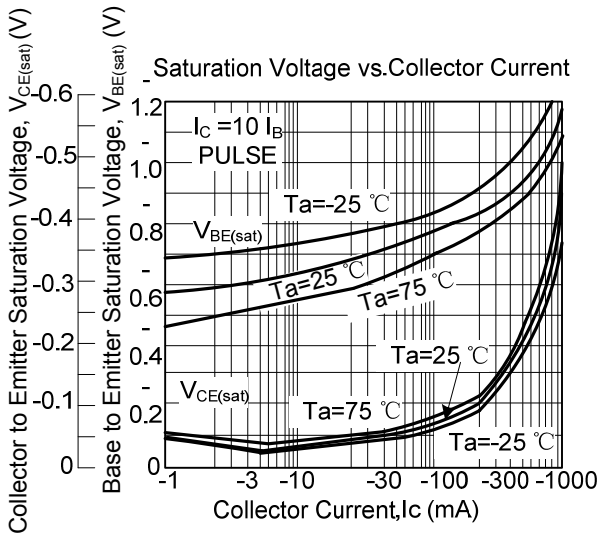
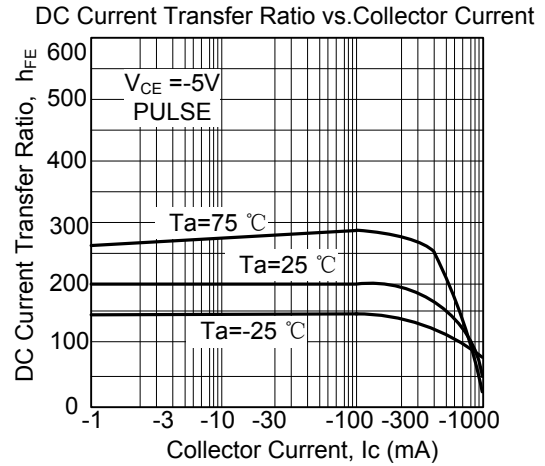
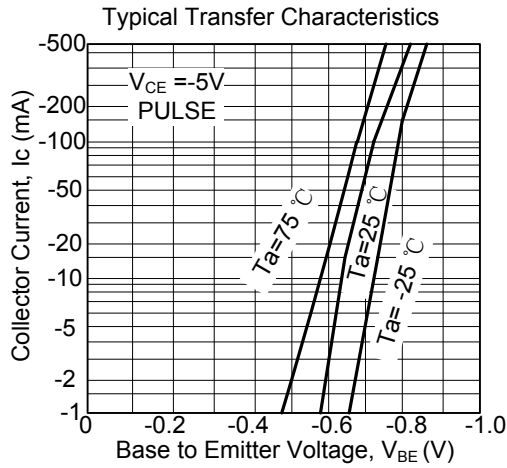
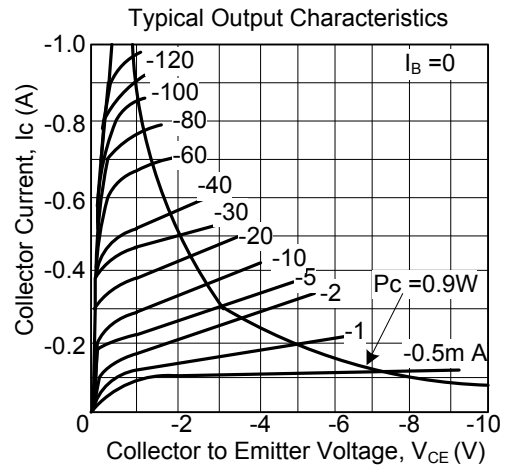
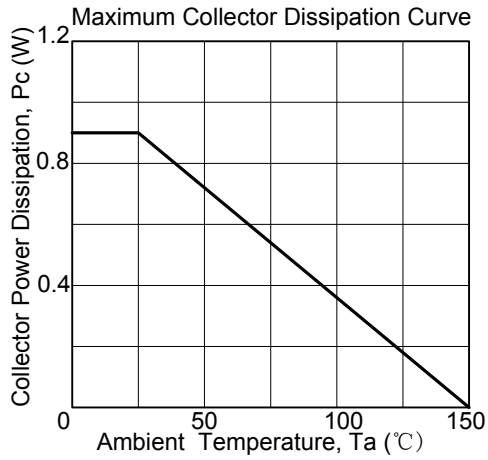
■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = -10\mu\text{A}$ , $I_E = 0$	-120			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -1\text{mA}$ , $R_{BE} = \infty$	-80			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -10\mu\text{A}$ , $I_C = 0$	-6			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB} = -120\text{V}$ , $I_E = 0$			-500	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -6\text{V}$ , $I_C = 0$			-500	nA
DC Current Transfer Ratio	$h_{FE1}$	$V_{CE} = -5\text{V}$ , $I_C = -150\text{mA}$ (note)	60		320	
	$h_{FE2}$	$V_{CE} = -5\text{V}$ , $I_C = -500\text{mA}$ (note)	40			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -500\text{mA}$ , $I_B = -50\text{mA}$ (note)			-0.5	V
Base to Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 500\text{mA}$ , $I_B = 50\text{mA}$			-1.1	V
Gain Bandwidth Product	$f_T$	$V_{CE} = -5\text{V}$ , $I_C = -150\text{mA}$		140		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$		20		pF

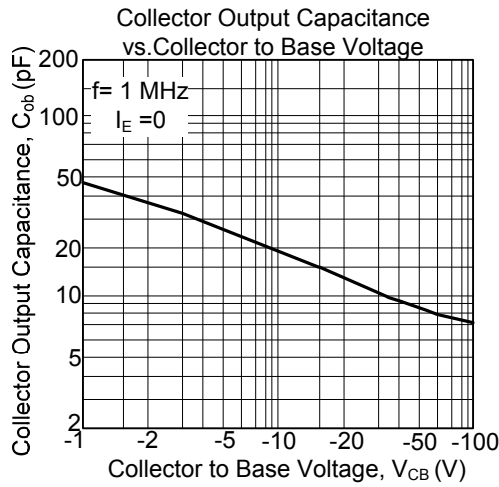
■ CLASSIFICATION OF  $h_{FE1}$

RANK	B	C	D
RANGE	60-120	100-200	160-320

## TYPICAL CHARACTERISTICS



### ■ TYPICAL CHARACTERISTICS (Cont.)



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