



# UNISONIC TECHNOLOGIES CO., LTD

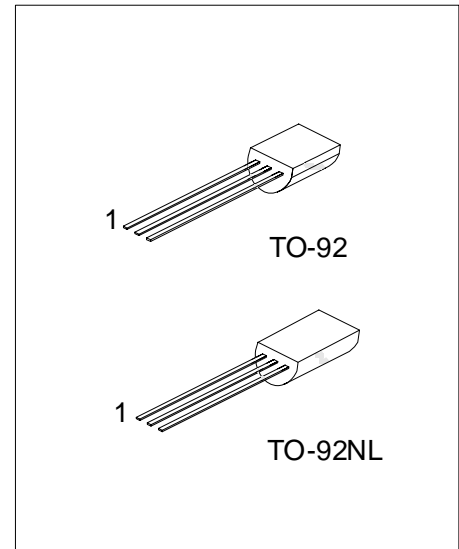
## 2SD1857

## NPN SILICON TRANSISTOR

### POWER TRANSISTOR

#### ■ FEATURES

- \* High breakdown voltage. ( $BV_{CEO}=120V$ )
- \* Low collector output capacitance. (Typ. 20pF at  $V_{CB}=10V$ )
- \* High transition frequency. ( $f_T=80MHz$ )



\*Pb-free plating product number: 2SD1857L

#### ■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SD1857-x-T92-B	2SD1857L-x-T92-B	TO-92	E	C	B	Tape Box
2SD1857-x-T92-K	2SD1857L-x-T92-K	TO-92	E	C	B	Bulk
2SD1857-x-T9N-B	2SD1857L-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SD1857-x-T9N-K	2SD1857L-x-T9N-K	TO-92NL	E	C	B	Bulk
2SD1857-x-T9N-R	2SD1857L-x-T9N-R	TO-92NL	E	C	B	Tape Reel

<p>2SD1857L-x-T92-B</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) T92: TO-92, T9N: TO-92NL</p> <p>(3) x: refer to Classification of <math>h_{FE}</math></p> <p>(4) L: Lead Free Plating, Blank: Pb/Sn</p>
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# 2SD1857

## NPN SILICON TRANSISTOR

### ■ ABSOLUTE MAXIMUM RATING (Ta=25 )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	120	V
Collector-Emitter Voltage	V <sub>CEO</sub>	120	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Power Dissipation	P <sub>C</sub>	1	W
Collector Current	I <sub>C</sub>	2	A
Collector Current	I <sub>CP</sub>	3	A
Junction Temperature	T <sub>J</sub>	+150	
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	

Note: 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.

### ■ ELECTRICAL CHARACTERISTICS (Ta=25 )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	I <sub>C</sub> =50μA	120			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =1mA	120			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =50μA	5			V
Collector Cut-off Current	I <sub>CB0</sub>	V <sub>CB</sub> =100V			1	μA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V			1	μA
DC Current Transfer Ratio	h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.1A	82		390	
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =I <sub>B</sub> =1A/0.1A(Note)			0.4	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>E</sub> =-0.1A, f=30MHz.		80		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz(Note)		20		pF

Note: Measured using pulse current.

### ■ CLASSIFICATION OF h<sub>FE</sub>

RANK	P	Q	R
RANGE	82-180	120-270	180-390

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