



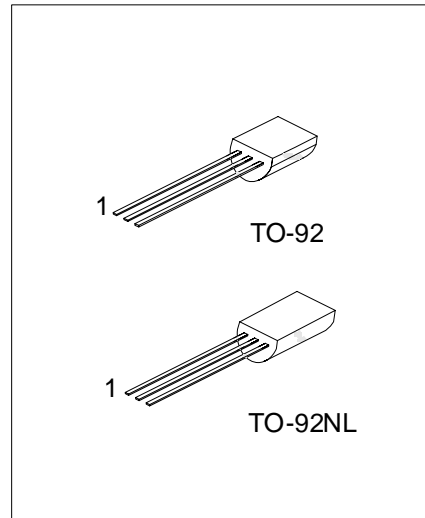
## 2SD1857

## 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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■ ABSOLUTE MAXIMUM RATING (Ta=25 )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	120	V
Collector-Emitter Voltage	$V_{CEO}$	120	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Power Dissipation	$P_C$	1	W
Collector Current	$I_C$	2	A
Collector Current	$I_{CP}$	3	A
Junction Temperature	$T_J$	+150	
Storage Temperature	$T_{STG}$	-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	$BV_{CBO}$	$I_C=50\mu A$	120			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1mA$	120			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=50\mu A$	5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=100V$			1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=4V$			1	$\mu A$
DC Current Transfer Ratio	$h_{FE}$	$V_{CE}=5V, I_C=0.1A$	82		390	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C/I_B=1A/0.1A$ (Note)			0.4	V
Transition Frequency	$f_T$	$V_{CE}=5V, I_E=-0.1A, f=30MHz.$		80		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0A, f=1MHz$ (Note)		20		pF

Note: Measured using pulse current.

■ CLASSIFICATION OF  $h_{FE}$

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

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