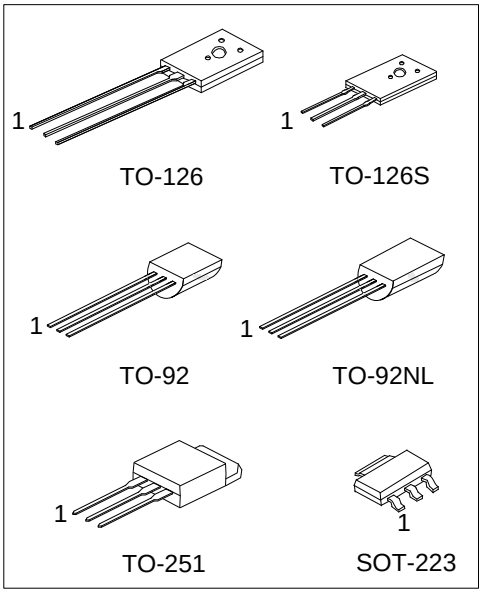
2SD1857

NPN EPITAXIAL 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)

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SD1857L-x-AA3-R	2SD1857G-x-AA3-R	SOT-223	B	C	E	Tape Reel
2SD1857L-x-AA3-A-R	2SD1857G-x-AA3-A-R	SOT-223	E	C	B	Tape Reel
2SD1857L-x-T60-K	2SD1857G-x-T60-K	TO-126	E	C	B	Bulk
2SD1857L-x-T6S-K	2SD1857G-x-T6S-K	TO-126S	E	C	B	Bulk
2SD1857L-x-TM3-T	2SD1857G-x-TM3-T	TO-251	E	C	B	Tube
2SD1857L-x-T92-B	2SD1857G-x-T92-B	TO-92	E	C	B	Tape Box
2SD1857L-x-T92-K	2SD1857G-x-T92-K	TO-92	E	C	B	Bulk
2SD1857L-x-T9N-B	2SD1857G-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SD1857L-x-T9N-K	2SD1857G-x-T9N-K	TO-92NL	E	C	B	Bulk

Note: Pin Assignment: E: Emitter C: Collector B: Base

2SD1857G-x-AA3-x-R

(1)Packing Type
(2)Pin Assignment
(3)Package Type
(4)Rank
(5)Green Package

(1) R: Tape Reel, B: Tape Box, K: Bulk, T: Tube
(2) Refer to Pin Assignment
(3) AA3: SOT-223, T60: TO-126, T6S: TO-126S, TM3: TO-251, T92:TO-92, T9N: TO-92NL
(4) x: refer to Classification of h_{FE}
(5) G: Halogen Free and Lead Free, L: Lead Free

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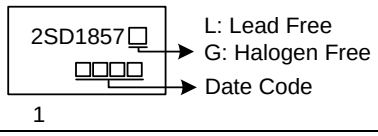
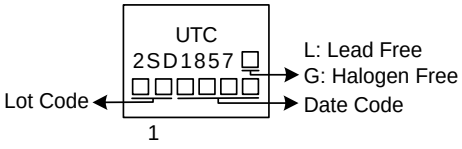
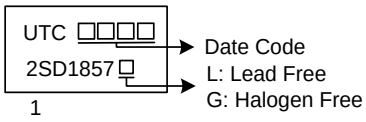
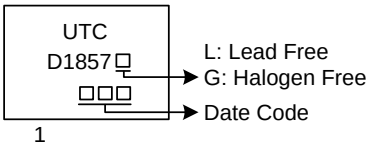
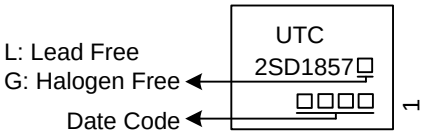
■ MARKING

PACKAGE	MARKING
SOT-223	
TO-251	
TO-126 / TO-126C	
TO-92	
TO-92NL	

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

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	SOT-223	P_C	1 (Note 2)	W
	TO-126/TO-126S		1.4	W
	TO-92		0.625	W
	TO-92 NL		0.9	W
	TO-251		2	W
Collector Current		I_C	2	A
Collector Current		I_{CP}	3	A
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-40 ~ +150	°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. When mounted on a 40×40×0.7mm ceramic board.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=50μA	120			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA	120			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=50μA	5			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=100V			1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V			1	μA
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

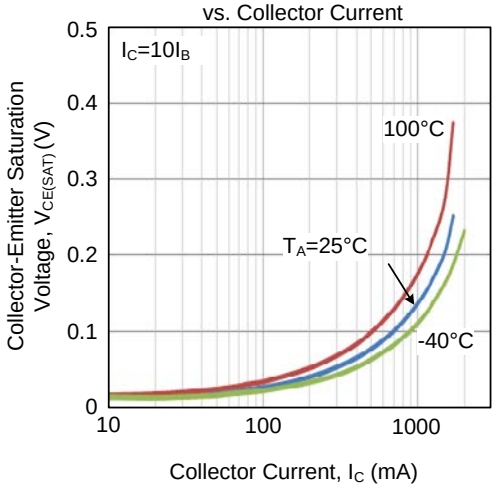
Note: Measured using pulse current.

■ CLASSIFICATION OF h_{FE}

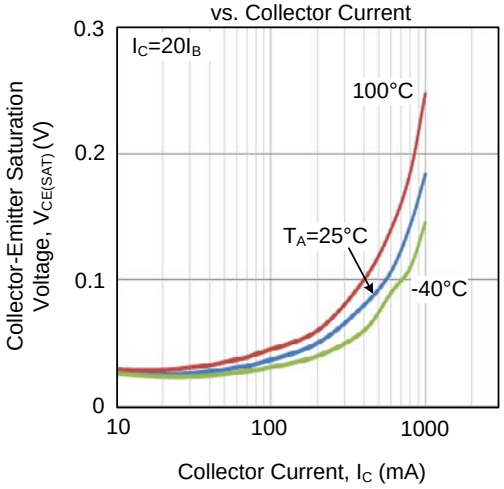
RANK	P	Q	R
RANGE	82-180	120-270	180-390

■ TYPICAL CHARACTERISTICS

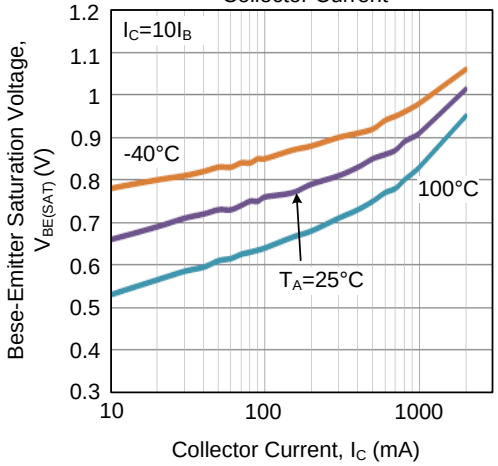
Collector-Emitter Saturation Voltage vs. Collector Current



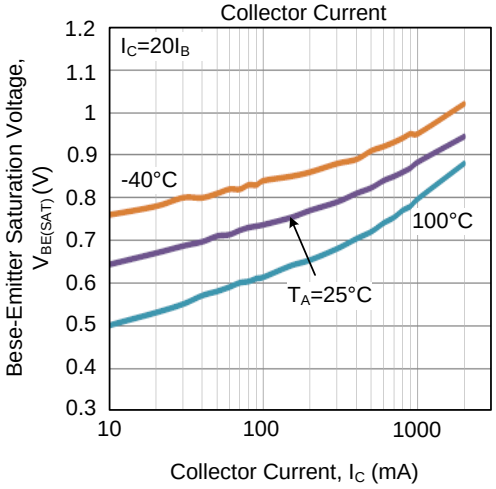
Collector-Emitter Saturation Voltage vs. Collector Current



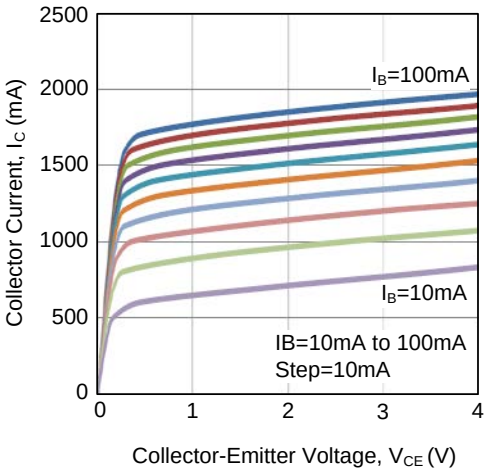
Bese-Emitter Saturation Voltage vs. Collector Current



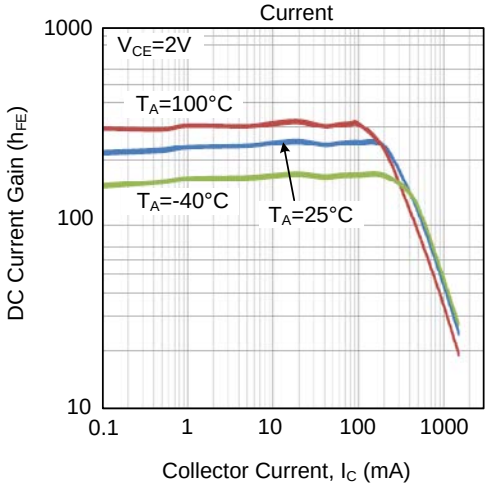
Bese-Emitter Saturation Voltage vs. Collector Current



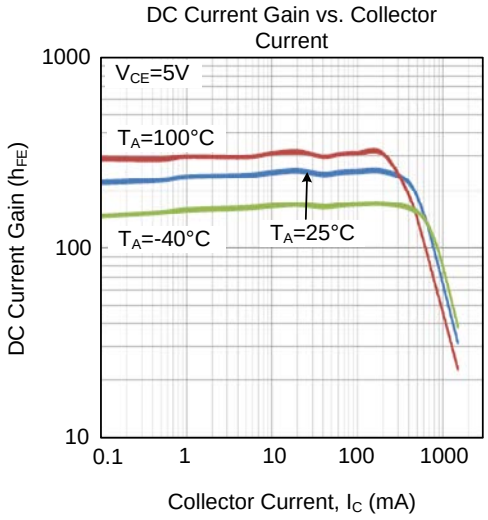
Static Characteristic

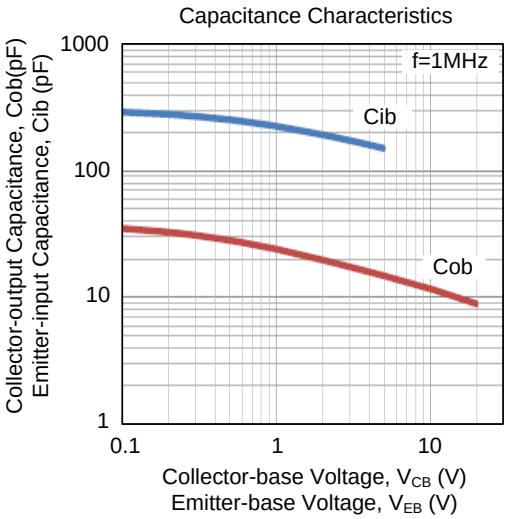


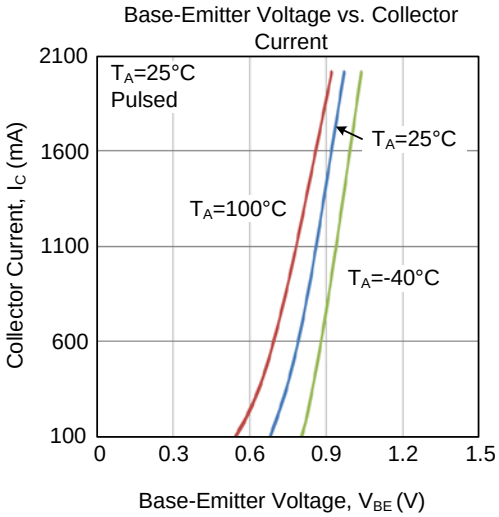
DC Current Gain vs. Collector Current

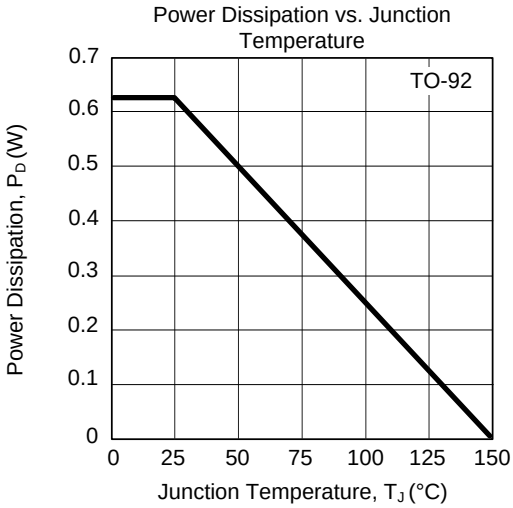


■ TYPICAL CHARACTERISTICS (Cont.)









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