

Type 2N2857
Geometry 0011
Polarity NPN
Qual Level: JAN - JANS

Generic Part Number:
2N2857

REF: MIL-PRF-19500/343

Features:

[Request Quotation](#)

- Low power, ultra-high frequency transistor.
- Housed in [TO-72](#) case.
- Also available in chip form using the [0011](#) chip geometry.
- The Min and Max limits shown are per [MIL-PRF-19500/343](#) which Semicoa meets in all cases.



[TO-72](#)

Maximum Ratings

$T_C = 25^{\circ}\text{C}$ unless otherwise specified

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	15	V
Collector-Base Voltage	V_{CBO}	30	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current, Continuous	I_C	40	mA
Operating Junction Temperature	T_J	-65 to +200	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65 to +200	$^{\circ}\text{C}$

Electrical Characteristics

$T_C = 25^\circ\text{C}$ unless otherwise specified

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage $I_C = 1 \mu\text{A}$	$V_{(BR)CBO}$	30	---	V
Collector-Emitter Breakdown Voltage $I_C = 3 \text{ mA}$	$V_{(BR)CEO}$	15	---	V
Emitter-Base Breakdown Voltage $I_E = 10 \mu\text{A}$	$V_{(BR)EBO}$	3.0	---	V
Collector-Emitter Cutoff Current $V_{CB} = 15 \text{ V}$	I_{CES}	---	100	nA
Collector-Base Cutoff Current $V_{CB} = 15 \text{ V}$	I_{CBO}	---	10	nA

ON Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Saturation Voltage $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$	$V_{CE(sat)}$	---	0.4	V dc
Base-Emitter Saturation Voltage $I_C = 150 \text{ mA}, I_B = 1 \text{ mA}$	$V_{BE(sat)}$	---	1.0	V dc

Small Signal Characteristics	Symbol	Min	Max	Unit
<i>Forward Current Transfer Ratio</i> $I_C = 3 \text{ mA}, V_{CE} = 1 \text{ V}$	h_{FE}	30	150	---
$I_C = 2 \text{ mA}, V_{CE} = 6 \text{ V}, \text{ case lead floating}$	h_{FE}	50	220	---
<i>Magnitude of Common Emitter Short Circuit Forward Current Transfer Ratio</i> $V_{CE} = 6 \text{ V}, I_C = 5 \text{ mA}, f = 100 \text{ MHz}$	$ h_{FE} $	10	21	---
Small Signal Power Gain	G_{PE}	12.5	21	dB
<i>Collector-Base Feedback Capacitance</i> $V_{CB} = 10 \text{ V}, I_E = 2 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$	C_{CB}	---	1.0	pF
<i>Collector-Base Time Constant</i> $V_{CE} = 6 \text{ V}, I_E = 2 \text{ mA}, f = 31.9 \text{ MHz}$	$r_b C_C$	4.0	15	ps
<i>Noise Figure</i> $V_{CE} = 6 \text{ V}, I_C = 1.5 \text{ mA}, r_g = 50 \text{ ohms}, 450 \text{ MHz}$	NF	---	4.5	dB