

**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
<b>Collector-Emitter Saturation Voltage</b> $I_C = 10\ \text{mA}, I_B = 1\ \text{mA}$	$V_{CE(sat)}$	---	0.4	V dc
<b>Base-Emitter Saturation Voltage</b> $I_C = 150\ \text{mA}, I_B = 1\ \text{mA}$	$V_{BE(sat)}$	---	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	---
$I_C = 2\ \text{mA}, V_{CE} = 6\ \text{V}$ , 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