SEMICOA SEMICONDUCTORS

Data Sheet No. 2N2857

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°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	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Electrical Characteristics

T_C = 25°C unless otherwise specified

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

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

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