SEMICOA SEMICONDUCTORS

Data Sheet No. 2N3635

Type 2N3635
Geometry TBD
Polarity PNP
Qual Level: Pending

Generic Part Number:
2N3635

REF: MIL-PRF-19500/357

Features:

Request Quotation

- General-purpose high gain, low power amplifier transistor which operates over a wide temperature range.
- Housed in a TO-39 case.
- Also it will be available in chip form using the TBD chip geometry.
- The Min and Max limits shown are per MIL-PRF-19500/357 which Semicoa meets in all cases.

TO-39

Maximum Ratings

T_C = 25°C unless otherwise specified

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	140	V
Collector-Base Voltage	V_{CBO}	140	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current, Continuous	I_C	1.0	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 = 10 µA	$V_{(BR)CBO}$	140	---	V
Collector-Emitter Breakdown Voltage I_C = 10 mA	$V_{(BR)CEO}$	140	---	V
Emitter-Base Breakdown Voltage I_E = 10 µA, pulsed	$V_{(BR)EBO}$	5.0	---	V
Collector-Base Cutoff Current V_{CB} = 100 V V_{CB} = -100 V, T_A = +150°C	 I_{CBO1} I_{CBO2}	 --- ---	 100 100	 nA µA
Emitter-Base Cutoff Current V_{EB} = 3 V	I_{EBO}	---	50	nA
Collector-Emitter Cutoff Current V_{CE} = 100 V	I_{CEO}	---	10	µA
ON Characteristics	**Symbol**	**Min**	**Max**	**Unit**
Forward Current Transfer Ratio				
I_C = 0.1 mA, V_{CE} = 10 V (pulse test)	h_{FE1}	55	---	---
I_C = 1.0 mA, V_{CE} = 1.0 V (pulse test)	h_{FE2}	90	---	---
I_C = 10 mA, V_{CE} = 10 V (pulse test)	h_{FE3}	100	---	---
I_C = 50 mA, V_{CE} = 10 V (pulse test)	h_{FE4}	100	300	---
I_C = 150 mA, V_{CE} = 10 V (pulse test)	h_{FE5}	60	---	---
I_C = 50 mA, V_{CE} = 10 V (pulsed), T_A = -55°C	h_{FE6}	50	---	---
Collector-Emitter Saturation Voltage				
I_C = 10 mA, I_B = 1 mA (pulse test)	$V_{CE(sat)1}$	---	0.3	V dc
I_C = 50 mA, I_B = 5 mA (pulse test)	$V_{CE(sat)2}$	---	0.6	V dc
Base-Emitter Saturation Voltage Non Saturated				
I_C = 10 mA, I_B = 1 mA (pulse test)	$V_{BE(sat)1}$	---	0.8	V dc
I_C = 50 mA, I_B = 5 mA (pulse test)	$V_{BE(sat)2}$	0.65	0.9	V dc

Switching Characteristics	Symbol	Min	Max	Unit
Pulse Delay Time Per Figure 3 of MIL-S-19500/357	t_d	---	100	ns
Pulse Rise Time I_C = 500 mA, I_{B1} = 50 mA, V_{EB} = 2 V	t_r	---	100	ns
Pulse Storage Time I_C = 500 mA, I_{B1} = I_{B2} = 50 mA	t_s	---	500	ns
Pulse Fall Time I_C = 500 mA, I_{B1} = I_{B2} = 50 mA	t_f	---	150	ns
t off I_C = 500 mA, I_{B1} = I_{B2} = 50 mA	t_{off}	---	600	ns

Small Signal Characteristics	Symbol	Min	Max	Unit
Magnitude of Short-Circuit Forward Current Transfer Ratio V_{CE} = 30 V, I_C = 30 mA, f = 100 MHz	$\|h_{FE}\|$	2.0	8.5	---
Magnitude of Short-Circuit Forward Current Transfer Ratio V_{CE} = 10 V, I_C = 10 mA, f = 1 kHz	h_{FE}	80	320	---
Short-Circuit Input Impedance V_{CE} = 10 V, I_C = 10 mA, f = 1 kHz	h_{IE}	200	1200	ohms
Open-Circuit, Reverse Voltage Transfer Ratio V_{CE} = 10 V, I_C = 10 mA, f = 1 kHz	h_{RE}	---	$3x10^{-4}$	---
Open Circuit Output Admittance V_{CE} = 10 V, I_C = 10 mA, f = 1 kHz	hoe	---	200	µS
Open Circuit Output Capacitance V_{CB} = 20 V, I_E = 0, 100 kHz < f < 1 MHz	C_{OBO}	---	10	pF
Input Capacitance, Output Open Circuited V_{EB} = 1 V, I_C = 0, 100 kHz < f < 1 MHz	C_{IBO}	---	75	pF
Noise Figure V_{CE} = 10 V, I_C = 0.5 mA, R_g = 1 kohm	NF			
f = 100 Hz		---	5	dB
f = 1 kHz		---	3	dB
f = 10 kHz		---	3	dB