SEMICOA SEMICONDUCTORS

Data Sheet No. 2N3737

Type 2N3737
Geometry TBD
Polarity NPN
Qual Level: Pending

Generic Part Number:
2N3737

REF: MIL-PRF-19500/395

Features:

Request Quotation

- General-purpose NPN silicon switching transistor which operates over a wide temperature range.
- Housed in a TO-46 case.
- Also it will be available in chip form using the TBD chip geometry.
- The Min and Max limits shown are per MIL-PRF-19500/395 which Semicoa meets in all cases.

TO-46

Maximum Ratings

T_C = 25°C unless otherwise specified

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	40	V
Collector-Base Voltage	V_{CBO}	75	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current, Continuous	I_C	1.5	mA
Power, T_A = +25°C	P_T	0.5	W
Power, T_C = +25°C	P_T	1.9	W
Thermal Resistance	R_{JC}	0.088	°C/mW
Operating Junction Temperature	T_J	-55 to +200	°C
Storage Temperature	T_{STG}	-55 to +200	°C

Electrical Characteristics

$T_C = 25^oC$ unless otherwise specified

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage I_C = 10 mA	$V_{(BR)CBO}$	40	---	V
Collector-Emitter Breakdown Voltage I_C = 10 µA	$V_{(BR)CEO}$	75	---	V
Emitter-Base Breakdown Voltage I_E = 10 µA	$V_{(BR)EBO}$	5.0	---	V
Collector-Base Cutoff Current V_{CB} = 30 V	I_{CBO1}	---	250	nA
Emitter-Base Cutoff Current V_{EB} = 4.0 V	I_{EBO1}	---	100	nA
Collector-Emitter Cutoff Current V_{CE} = 30 V, V_{EB} = 2.0 V V_{CB} = 30 V, V_{EB} = 2.0 V, T_A = +150°C	I_{CEX1} I_{CEX2}	--- ---	200 250	nA µA
ON Characteristics	**Symbol**	**Min**	**Max**	**Unit**
Forward Current Transfer Ratio				
I_C = 10 mA, V_{CE} = 1.0 V	h_{FE1}	30	---	---
I_C = 150 mA, V_{CE} = 1.0 V (pulse test)	h_{FE2}	40	---	---
I_C = 500 mA, V_{CE} = 1.0 V (pulse test)	h_{FE3}	40	140	---
I_C = 1.0 A, V_{CE} = 1.5 V (pulse test)	h_{FE4}	20	80	---
I_C = 1.5 A, V_{CE} = 5.0 V (pulse test)	h_{FE5}	20	---	---
I_C = 500 mA, V_{CE} = 1.0 V (pulsed), T_A = +150°C	h_{FE6}	15	---	---
Collector-Emitter Saturation Voltage				
I_C = 10 mA, I_B = 1.0 mA	$V_{CE(sat)1}$	---	0.2	V dc
I_C = 150 mA, I_B = 15 mA (pulse test)	$V_{CE(sat)2}$	---	0.3	V dc
I_C = 500 mA, I_B = 50 mA (pulse test)	$V_{CE(sat)3}$	---	0.9	V dc
I_C = 1.0 A, I_B = 100 mA (pulse test)	$V_{CE(sat)4}$	---	0.30	V dc
Base-Emitter Saturation Voltage				
I_C = 10 mA, I_B = 1.0 mA	$V_{BE(sat)1}$	---	0.8	V dc
I_C = 150 mA, I_B = 15 mA (pulse test)	$V_{BE(sat)2}$	---	1.0	V dc
I_C = 500 mA, I_B = 50 mA (pulse test)	$V_{BE(sat)3}$	---	1.2	V dc
I_C = 1.0 A, I_B = 100 mA (pulse test)	$V_{BE(sat)4}$	0.9	1.4	V dc
Small Signal Characteristics	**Symbol**	**Min**	**Max**	**Unit**
Forward Current Transfer Ratio I_C = 50 mA, V_{CE} = 10 V, f = 100 MHz	$\|h_{FE}\|$	2.5	6.0	---
Open Circuit Output Capacitance V_{CB} = 10 V, I_E = 0, 100 kHz < f < 1 MHz	C_{OBO}	---	9.0	pF
Input Capacitance, Output Open Circuited V_{EB} = 0.5 V, I_C = 0, 100 kHz < f < 1 MHz	C_{IBO}	---	80	pF
Delay Time V_{CC} = 30 V, V_{BE} = 2 V, I_C = 1 A, I_{B1} = 100 mA	t_d	---	8.0	ns
Rise Time V_{CC} = 30 V, V_{BE} = 2 V, I_C = 1 A, I_{B1} = 100 mA	t_r	---	40	ns
Turn-off Time V_{CC} = 30 V, V_{BE} = 2 V, I_C = 1 A, I_{B1} = I_{B2} = 100 mA	t_{off}	---	60	ns