



Data Sheet No. 2N3737

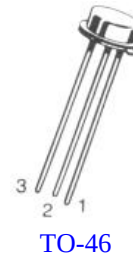
Type 2N3737
Geometry TBD
Polarity NPN
Qual Level: Pending

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.

**Maximum Ratings** $T_C = 25^{\circ}\text{C}$ 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, $T_A = +25^{\circ}\text{C}$	P_T	0.5	W
Power, $T_C = +25^{\circ}\text{C}$	P_T	1.9	W
Thermal Resistance	R_{JC}	0.088	$^{\circ}\text{C}/\text{mW}$
Operating Junction Temperature	T_J	-55 to +200	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 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 $I_C = 10\text{ mA}$	$V_{(BR)CBO}$	40	---	V
Collector-Emitter Breakdown Voltage $I_C = 10\text{ }\mu\text{A}$	$V_{(BR)CEO}$	75	---	V
Emitter-Base Breakdown Voltage $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	5.0	---	V
Collector-Base Cutoff Current $V_{CB} = 30\text{ V}$	I_{CBO1}	---	250	nA
Emitter-Base Cutoff Current $V_{EB} = 4.0\text{ V}$	I_{EBO1}	---	100	nA
Collector-Emitter Cutoff Current $V_{CE} = 30\text{ V}, V_{EB} = 2.0\text{ V}$	I_{CEX1}	---	200	nA
$V_{CB} = 30\text{ V}, V_{EB} = 2.0\text{ V}, T_A = +150^{\circ}\text{C}$	I_{CEX2}	---	250	μA
ON Characteristics	Symbol	Min	Max	Unit
Forward Current Transfer Ratio $I_C = 10\text{ mA}, V_{CE} = 1.0\text{ V}$	h_{FE1}	30	---	---
$I_C = 150\text{ mA}, V_{CE} = 1.0\text{ V}$ (pulse test)	h_{FE2}	40	---	---
$I_C = 500\text{ mA}, V_{CE} = 1.0\text{ V}$ (pulse test)	h_{FE3}	40	140	---
$I_C = 1.0\text{ A}, V_{CE} = 1.5\text{ V}$ (pulse test)	h_{FE4}	20	80	---
$I_C = 1.5\text{ A}, V_{CE} = 5.0\text{ V}$ (pulse test)	h_{FE5}	20	---	---
$I_C = 500\text{ mA}, V_{CE} = 1.0\text{ V}$ (pulsed), $T_A = +150^{\circ}\text{C}$	h_{FE6}	15	---	---
Collector-Emitter Saturation Voltage $I_C = 10\text{ mA}, I_B = 1.0\text{ mA}$	$V_{CE(sat)1}$	---	0.2	V dc
$I_C = 150\text{ mA}, I_B = 15\text{ mA}$ (pulse test)	$V_{CE(sat)2}$	---	0.3	V dc
$I_C = 500\text{ mA}, I_B = 50\text{ mA}$ (pulse test)	$V_{CE(sat)3}$	---	0.9	V dc
$I_C = 1.0\text{ A}, I_B = 100\text{ mA}$ (pulse test)	$V_{CE(sat)4}$	---	0.30	V dc
Base-Emitter Saturation Voltage $I_C = 10\text{ mA}, I_B = 1.0\text{ mA}$	$V_{BE(sat)1}$	---	0.8	V dc
$I_C = 150\text{ mA}, I_B = 15\text{ mA}$ (pulse test)	$V_{BE(sat)2}$	---	1.0	V dc
$I_C = 500\text{ mA}, I_B = 50\text{ mA}$ (pulse test)	$V_{BE(sat)3}$	---	1.2	V dc
$I_C = 1.0\text{ A}, I_B = 100\text{ mA}$ (pulse test)	$V_{BE(sat)4}$	0.9	1.4	V dc
Small Signal Characteristics	Symbol	Min	Max	Unit
Forward Current Transfer Ratio $I_C = 50\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$	$ h_{FE} $	2.5	6.0	---
Open Circuit Output Capacitance $V_{CB} = 10\text{ V}, I_E = 0, 100\text{ kHz} < f < 1\text{ MHz}$	C_{OBO}	---	9.0	pF
Input Capacitance, Output Open Circuited $V_{EB} = 0.5\text{ V}, I_C = 0, 100\text{ kHz} < f < 1\text{ MHz}$	C_{IBO}	---	80	pF
Delay Time $V_{CC} = 30\text{ V}, V_{BE} = 2\text{ V}, I_C = 1\text{ A}, I_{B1} = 100\text{ mA}$	t_d	---	8.0	ns
Rise Time $V_{CC} = 30\text{ V}, V_{BE} = 2\text{ V}, I_C = 1\text{ A}, I_{B1} = 100\text{ mA}$	t_r	---	40	ns
Turn-off Time $V_{CC} = 30\text{ V}, V_{BE} = 2\text{ V}, I_C = 1\text{ A}, I_{B1} = I_{B2} = 100\text{ mA}$	t_{off}	---	60	ns

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