



Data Sheet No. 2N3498

Type 2N3498
Geometry 5620
Polarity NPN
Qual Level: JAN - JANTXV

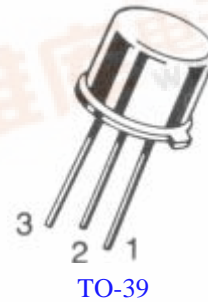
Generic Part Number:
2N3498

REF: MIL-PRF-19500/366

Features:

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- General-purpose silicon transistor for switching and amplifier applications.
- Housed in **TO-39** case.
- Also available in chip form using the **5620** chip geometry.
- The Min and Max limits shown are per **MIL-PRF-19500/366** 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}	100	V
Collector-Base Voltage	V_{CBO}	100	V
Emitter-Base voltage	V_{EBO}	6.0	V
Collector Current, Continuous	I_C	500	mA
Power Dissipation, $T_A = 25^\circ\text{C}$	P_D	5.0	mW
Derate above 25°C		28.8	mW/°C
Operating Junction Temperature	T_J	-65 to +200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Electrical Characteristics
 $T_C = 25^\circ\text{C}$ unless otherwise specified

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage $I_C = 10 \mu\text{A}$	$V_{(BR)CBO}$	100	---	V
Collector-Emitter Breakdown Voltage $I_C = 10 \text{ mA}$	$V_{(BR)CEO}$	100	---	V
Emitter-Base Breakdown Voltage $I_C = 10 \mu\text{A}$	$V_{(BR)CEO}$	6.0	---	V
Collector-Base Cutoff Current $V_{CB} = 50 \text{ V}$	I_{CBO}	---	50	nA
Emitter-Base Cutoff Current $V_{EB} = 4 \text{ V}$	I_{EBO}	---	25	nA

ON Characteristics	Symbol	Min	Max	Unit
Forward Current Transfer Ratio				
$I_C = 100 \mu\text{A}, V_{CE} = 10 \text{ V}$ (pulsed)	h_{FE1}	20	---	---
$I_C = 1.0 \text{ mA}, V_{CE} = 10 \text{ V}$ (pulsed)	h_{FE2}	25	---	---
$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ (pulsed)	h_{FE3}	35	---	---
$I_C = 150 \text{ mA}, V_{CE} = 10 \text{ V}$ (pulsed)	h_{FE4}	40	120	---
$I_C = 500 \text{ mA}, V_{CE} = 10 \text{ V}$ (pulsed)	h_{FE6}	15	---	---
Base-Emitter Saturation Voltage				
$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$	$V_{BE(sat)1}$	---	0.8	V dc
$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$	$V_{BE(sat)3}$	---	1.4	V dc
Collector-Emitter Saturation Voltage				
$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$	$V_{CE(sat)1}$	---	0.2	V dc
$I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$	$V_{CE(sat)3}$	---	0.6	V dc

Small Signal Characteristics	Symbol	Min	Max	Unit
Short Circuit Forward Current Transfer Ratio Forward Current Transfer Ratio $I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}, f = 1 \text{ kHz}$	AC $ h_{FE} $	50	300	---
Magnitude of Common Emitter Short Circuit Forward Current Transfer Ratio $V_{CE} = 20 \text{ V}, I_C = 20 \text{ mA}, f = 100 \text{ MHz}$	$ h_{FE} $	1.5	8.0	---
Open Circuit Output Capacitance $V_{CB} = 10 \text{ V}, I_E = 0, 100 \text{ kHz} < f < 1 \text{ MHz}$	C_{OBO}	---	10	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
Noise Figure $V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ mA}, R_g = 1 \text{ k}\Omega, 1 \text{ kHz}$	NF	---	16	dB
Noise Figure $V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ mA}, R_g = 1 \text{ k}\Omega, 1 \text{ kHz}$	NF	---	6.0	dB

Switching Characteristics	Symbol	Min	Max	Unit
Saturated Turn On Switching time to 90% $I_C = 150 \text{ mA}, I_{B1} = 15 \text{ mA}, V_{EB} = 2 \text{ V}$	t_{ON}	---	115	ns
Saturated Turn Off Switching time to 10% $I_C = 150 \text{ mA}, I_{B1} = 15 \text{ mA}$	t_{OFF}	---	1150	ns