

Type 2N3498
Geometry 5620
Polarity NPN

Qual Level: JAN - JANTXV

Generic Part Number: 2N3498

REF: MIL-PRF-19500/366

Request Quotation

Features:

 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

 $T_C = 25^{\circ}C$ 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°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

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

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage $I_C = 10 \mu A$	V _{(BR)CBO}	100		V
Collector-Emitter Breakdown Voltage $I_C = 10 \text{ mA}$	V _{(BR)CEO}	100		V
Emitter-Base Breakdown Voltage $I_C = 10 \mu A$	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				
$I_C = 100 \mu A, V_{CE} = 10 V \text{ (pulsed)}$	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	AC h _{FE}	50	300	
$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}, f = 1 \text{ kHz}$				
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 V, I _E = 0, 100 kHz < f < 1 MHz	C _{OBO}	-	10	pF
Input Capacitance, Output Open Circuited V _{EB} = 0.5 V, IC = 0, 100 kHz < f < 1 MHz	C_{IBO}	-	80	pF
Noise Figure $V_{CE} = 10 \text{ V, IC} = 0.5 \text{ mA, Rg} = 1 \text{ kOhm, 1 kHz}$	NF		16	dB
Noise Figure $V_{CE} = 10 \text{ V, IC} = 0.5 \text{ mA, Rg} = 1 \text{ kOhm, 1 kHz}$	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% $I_C = 150 \text{ mA}, I_{B2} = -I_{B1} = 15 \text{ mA}$	t _{OFF}		1150	ns