

Type 2N3507L Geometry 1506 **Polarity NPN**

Qual Level: JAN - JANTXV

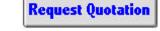
Data Sheet No. 2N3507L

Generic Part Number: 2N3507L

REF: MIL-PRF-19500/349

Features:

- General-purpose silicon transistor for switching and amplifier applications.
- Housed in TO-5 case.
- Also available in chip form using the 1506 chip geometry.
- The Min and Max limits shown are per MIL-PRF-19500/349 which Semicoa meets in all cases.





TO-5

Maximum Ratings

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

Rating	Symbol Rating		Unit	
Collector-Emitter Voltage	V_{CEO}	50	V	
Collector-Base Voltage	V_{CBO}	80	V	
Emitter-Base Voltage	V_{EBO}	5.0	V	
Collector Current, Continuous	I _C	3.0	А	
Power Dissipation, T _A = 25°C	P_T	1.0	W	
Derate above 25°C	·	5.71	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	V _{(BR)CBO}	80		V
I _C = 10 μA	▼ (BR)CBO			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50		V
I _C = 10 mA	(BIT)OLO			
Emitter-Base Breakdown Voltage I _E = 10 µA	$V_{(BR)EBO}$	5.0		V
Collector-Emitter Cutoff Current				
$V_{CE} = 60 \text{ V}, V_{EB} = 4 \text{ V}$	I _{CEX1}		1.0	μΑ
Collector-Emitter Cutoff Current				
$V_{CE} = 60 \text{ V}, V_{EB} = 4 \text{ V}, T_A = +150^{\circ}\text{C}$	I _{CEX2}		1.0	μA
Collector Current Continuous	1	3.0		٨
$V_{CB} = 50 \text{ V}$	I _C			А
ON Characteristics	Symbol	Min	Max	Unit
DC Current Gain				
$I_C = 500 \text{ mA}, V_{CE} = 1 \text{ V (pulsed)}$	h _{FE1}	35	175	
$I_C = 1.5 \text{ A}, V_{CE} = 2 \text{ V (pulsed)}$	h _{FE2}	30	150	
$I_C = 2.5 \text{ A}, V_{CE} = 3 \text{ V (pulsed)}$	h _{FE3}	25		
$I_C = 3.0 \text{ A}, V_{CE} = 5 \text{ V (pulsed)}$	h _{FE4}	20		
$I_C = 500 \text{ mA}, V_{CE} = 1 \text{ V (pulsed)}, T_A = -55^{\circ}\text{C}$	h _{FE5}	17		
Base-Emitter Saturation Voltage				
$I_C = 500 \text{ mA}, I_B = 50 \text{ mA (pulsed)}$	$V_{BE(sat)1}$		1.0	V dc
$I_C = 1.5 \text{ A}, I_B = 150 \text{ mA (pulsed)}$	$V_{BE(sat)2}$	0.9	1.4	V dc
$I_C = 2.5 \text{ A}, I_B = 250 \text{ mA (pulsed)}$	V _{BE(sat)3}		2.0	V dc
Collector-Emitter Saturation Voltage				
$I_C = 500 \text{ mA}, I_B = 50 \text{ mA (pulsed)}$	V _{CE(sat)1}		0.5	V dc
$I_C = 1.5 \text{ A}, I_B = 150 \text{ mA (pulsed)}$	V _{CE(sat)2}		1.0	V dc
$I_C = 2.5 \text{ A}, I_B = 250 \text{ mA (pulsed)}$	V _{CE(sat)3}		1.5	V dc
Small Signal Characteristics	Symbol	Min	Max	Unit
Magnitude of Common Emitter, Small Signal, Short Circuit				
Forward Current Transfer Ratio	h _{FE}	3.0	15	
$V_{CE} = 5 \text{ V}, I_C = 100 \text{ mA}, f = 20 \text{ MHz}$				
Open Circuit Output Capacitance $V_{CB} = 10 \text{ V}, I_E = 0, 100 \text{ kHz} < f < 1 \text{ MHz}$	C_{OBO}		40	рF
Input Capacitance, Output Open Circuited				
$V_{EB} = 3 \text{ V}, I_C = 0, 100 \text{ kHz} < f < 1 \text{ MHz}$	C_{IBO}		300	pF
Pulse Response Characteristics	Symbol	Min	Max	Unit
Delay Time			45	
$I_C = 1.5 \text{ A}, I_{B1} = 150 \text{ mA}$	t _d		15	ns
Rise Time	t _r		30	ns
$I_C = 1.5 \text{ A}, I_{B1} = 150 \text{ mA}$	ч			110
Storage Time	t _s		55	ns
$I_C = 1.5 \text{ mA}, I_{B2} = I_{B1} = 150 \text{ mA}$				
Fall Time $I_C = 1.5 \text{ mA}, I_{B2} = I_{B1} = 150 \text{ mA}$	t _f		35	ns
IC - 1.0 IIIA, IB2 - IB1 - 100 IIIA	ļ		ļ	

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