



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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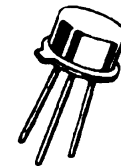
**PNP MEDIUM POWER SILICON TRANSISTOR**
*Qualified per MIL-PRF-19500/ 561*
**Devices**
**2N6193**
**Qualified Level**
**JAN, JANTX  
JANTXV**
**MAXIMUM RATINGS**

Ratings	Symbol	2N6193	Units
Collector-Emitter Voltage	$V_{CEO}$	100	Vdc
Collector-Base Voltage	$V_{CBO}$	100	Vdc
Emitter-Base Voltage	$V_{EBO}$	6.0	Vdc
Collector Current	$I_C$	5.0	Adc
Base Current	$I_B$	1.0	Adc
Total Power Dissipation	$P_T$	@ $T_A = +25^{\circ}C^{(1)}$	1.0
		@ $T_C = +25^{\circ}C^{(2)}$	10
Operating & Storage Temperature Range	$T_{op}, T_{stg}$	-65 to +200	$^{\circ}C$

**THERMAL CHARACTERISTICS**

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	17.5	$^{\circ}C/W$

 1) Derate linearly  $5.71mW/^{\circ}C$  for  $T_A > +25^{\circ}C$ 

 2) Derate linearly  $57.1mW/^{\circ}C$  for  $T_C > +25^{\circ}C$ 

 TO-39\*  
(TO-205AD)

\*See appendix A for package outline

**ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}C$  unless otherwise noted)**

Characteristics	Symbol	Min.	Max.	Unit
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**OFF CHARACTERISTICS**

Collector-Emitter Sustaining Voltage $I_C = 50$ mAdc	$V_{CEO(sus)}$	100		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 100$ Vdc	$I_{CEO}$		100	$\mu$ Adc
Emitter-Base Cutoff Current $V_{EB} = 6.0$ Vdc	$I_{EBO}$		100	$\mu$ Adc
Collector-Emitter Cutoff Current $V_{CE} = 90$ Vdc, $V_{BE} = 1.5$ Vdc	$I_{CEX}$		10	$\mu$ Adc
Collector-Base Cutoff Current $V_{CB} = 100$ Vdc	$I_{CBO}$		10	$\mu$ Adc

**2N6193 JAN SERIES**

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
<b>ON CHARACTERISTICS <sup>(3)</sup></b>				
DC Current Gain I <sub>C</sub> = 0.5 Adc, V <sub>CE</sub> = 2.0 Vdc I <sub>C</sub> = 2.0 Adc, V <sub>CE</sub> = 2.0 Vdc I <sub>C</sub> = 5.0 Adc, V <sub>CE</sub> = 2.0 Vdc	h <sub>FE</sub>	60 60 40	240	
Collector-Emitter Saturation Voltage I <sub>C</sub> = 2.0 Adc, I <sub>B</sub> = 0.2 Adc I <sub>C</sub> = 5.0 Adc, I <sub>B</sub> = 0.5 Adc	V <sub>CE(sat)</sub>		0.7 1.2	Vdc
Base-Emitter Saturation Voltage I <sub>C</sub> = 2.0 Adc, I <sub>B</sub> = 0.2 Adc I <sub>C</sub> = 5.0 Adc, I <sub>B</sub> = 0.5 Adc	V <sub>BE(sat)</sub>		1.2 1.8	Vdc

**DYNAMIC CHARACTERISTICS**

Magnitude of Common Emitter Small-Signal Short Circuit Forward-Current Transfer Ratio I <sub>C</sub> = 0.5 Adc, V <sub>CE</sub> = 10 Vdc, f = 10 MHz	h <sub>fe</sub>	3.0	15	
Output Capacitance V <sub>CB</sub> = 10 Vdc, I <sub>E</sub> = 0, 100 kHz ≤ f ≤ 1.0 MHz	C <sub>obo</sub>		300	pF
Output Capacitance V <sub>BE</sub> = 2.0 Vdc, I <sub>C</sub> = 0, 100 kHz ≤ f ≤ 1.0 MHz	C <sub>ibo</sub>		1250	pF

**SWITCHING CHARACTERISTICS**

Delay Time	V <sub>CC</sub> = -40 Vdc, V <sub>BE(off)</sub> = 3.0 Vdc	t <sub>d</sub>		100	ns
Rise Time	I <sub>C</sub> = 2.0 Adc, I <sub>B1</sub> = 0.2 Adc	t <sub>r</sub>		100	ns
Storage Time	V <sub>CC</sub> = -40 Vdc I <sub>C</sub> = 2.0 Adc,	t <sub>s</sub>		2.0	μs
Fall Time	I <sub>B1</sub> = -I <sub>B2</sub> = 0.2 Adc	t <sub>f</sub>		200	ns

**SAFE OPERATING AREA**

<b>DC Tests</b> T <sub>C</sub> = +25°C, 1 Cycle, t ≥ 0.5 s	
<b>Test 1</b> V <sub>CE</sub> = 2.0 Vdc, I <sub>C</sub> = 5.0 Adc	
<b>Test 2</b> V <sub>CE</sub> = 90 Vdc, I <sub>C</sub> = 55 mAdc	

(3) Pulse Test: Pulse Width = 300μs, Duty Cycle ≤ 2.0%.