

2N6193 JANTX, JTXV

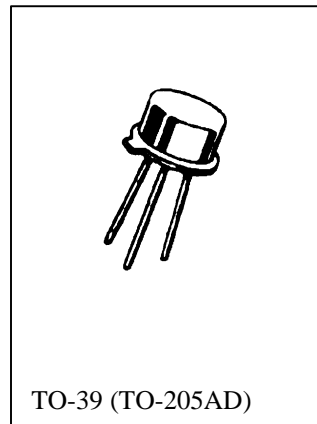
Processed per MIL-PRF-19500/561



PNP MEDIUM-POWER SILICON TRANSISTOR

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 Junction Temperature Range	T_J, T_{stg}	-55 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 $T_C > +25^{\circ}C$

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	μ Adc
Emitter-Base Cutoff Current $V_{EB} = 6.0$ Vdc	I_{EBO}		100	μ Adc
Collector-Emitter Cutoff Current $V_{CE} = 90$ Vdc, $V_{BE} = 1.5$ Vdc	I_{CEX}		10	μ Adc
Collector-Base Cutoff Current $V_{CB} = 100$ Vdc	I_{CBO}		10	μ Adc

ON CHARACTERISTICS ⁽³⁾

DC Current Gain $I_C = 0.5$ Adc, $V_{CE} = 2.0$ Vdc $I_C = 2.0$ Adc, $V_{CE} = 2.0$ Vdc $I_C = 5.0$ Adc, $V_{CE} = 2.0$ Vdc	h_{FE}	60 60 40	240	
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2N6193 JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
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ON CHARACTERISTICS (con't)

Collector-Emitter Saturation Voltage $I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{CE(sat)}$		0.7 1.2	Vdc
Base-Emitter Saturation Voltage $I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{BE(sat)}$		1.2 1.8	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short Circuit Forward-Current Transfer Ratio $I_C = 0.5 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 10 \text{ MHz}$	$ h_{fe} $	3.0	15	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}		300	pF
Output Capacitance $V_{BE} = 2.0 \text{ Vdc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{ibo}		1250	pF

SWITCHING CHARACTERISTICS

Delay Time	$V_{CC} = -40 \text{ Vdc}, V_{BE(off)} = 3.0 \text{ Vdc}$	t_d	100	ηs
Rise Time	$I_C = 2.0 \text{ Adc}, I_{B1} = 0.2 \text{ Adc}$	t_r	100	ηs
Storage Time	$V_{CC} = -40 \text{ Vdc}, I_C = 2.0 \text{ Adc},$	t_s	2.0	μs
Fall Time	$I_{B1} = -I_{B2} = 0.2 \text{ Adc}$	t_f	200	ηs

SAFE OPERATING AREA

DC Tests $T_C = +25^{\circ}C, 1 \text{ Cycle}, t \geq 0.5 \text{ s}$ Test 1 $V_{CE} = 2.0 \text{ Vdc}, I_C = 5.0 \text{ Adc}$ Test 2 $V_{CE} = 90 \text{ Vdc}, I_C = 55 \text{ mAdc}$

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