

**2N5190 thru 2N5192**  
SILICON NPN POWER TRANSISTORS

**\*MAXIMUM RATINGS**

Rating	Symbol	2N5190	2N5191	2N5192	Unit
Collector-Emitter Voltage	V <sub>CE0</sub>	40	60	80	Vdc
Collector-Base Voltage	V <sub>CB</sub>	40	60	80	Vdc
Emitter-Base Voltage	V <sub>EB</sub>	5.0			Vdc
Collector Current	I <sub>C</sub>	4.0			Adc
Base Current	I <sub>B</sub>	1.0			Adc
Total Power Dissipation @ T <sub>C</sub> = 25°C	P <sub>D</sub>	40	320		Watts
Derate above 25°C					mW/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-65 to +150			°C

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ <sub>JC</sub>	3.17	°C/W

**\*ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted)**

Characteristic	Symbol	Min	Max	Unit
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**OFF CHARACTERISTICS**

Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Sustaining Voltage (1) (I <sub>C</sub> = 0.1 Adc, I <sub>B</sub> = 0)	V <sub>CE0(sus)</sub>	40	-	Vdc
	2N5190	40	-	
	2N5191	60	-	
	2N5192	80	-	
Collector Cutoff Current (V <sub>CE</sub> = 40 Vdc, I <sub>B</sub> = 0)	I <sub>CEO</sub>	-	1.0	mAdc
	2N5190	-	1.0	
	2N5191	-	1.0	
	2N5192	-	1.0	
Collector Cutoff Current (V <sub>CE</sub> = 40 Vdc, V <sub>EB(off)</sub> = 1.5 Vdc)	I <sub>CEX</sub>	-	0.1	mAdc
	2N5190	-	0.1	
	2N5191	-	0.1	
	2N5192	-	0.1	
	2N5190	-	2.0	
	2N5191	-	2.0	
	2N5192	-	2.0	
Collector Cutoff Current (V <sub>CE</sub> = 40 Vdc, I <sub>B</sub> = 0)	I <sub>CBO</sub>	-	0.1	mAdc
	2N5190	-	0.1	
	2N5191	-	0.1	
	2N5192	-	0.1	
Emitter Cutoff Current (V <sub>BE</sub> = 5.0 Vdc, I <sub>C</sub> = 0)	I <sub>EBO</sub>	-	1.0	mAdc

**ON CHARACTERISTICS**

Characteristic	Symbol	Min	Max	Unit
DC Current Gain (1) (I <sub>C</sub> = 1.5 Adc, V <sub>CE</sub> = 2.0 Vdc)	h <sub>FE</sub>	25	100	-
	2N5190	25	100	
	2N5191	25	100	
	2N5192	20	80	
	2N5190	10	-	
	2N5191	10	-	
	2N5192	7.0	-	
Collector-Emitter Saturation Voltage (1) (I <sub>C</sub> = 1.5 Adc, I <sub>B</sub> = 0.15 Adc)	V <sub>CE(sat)</sub>	-	0.6	Vdc
	2N5190	-	0.6	
	2N5191	-	1.4	
	2N5192	-	1.4	
Base-Emitter On Voltage (1) (I <sub>C</sub> = 1.5 Adc, V <sub>CE</sub> = 2.0 Vdc)	V <sub>BE(on)</sub>	-	1.7	Vdc

**DYNAMIC CHARACTERISTICS**

Characteristic	Symbol	Min	Max	Unit
Current-Gain-Bandwidth Product (I <sub>C</sub> = 1.0 Adc, V <sub>CE</sub> = 10 Vdc, f = 1.0 MHz)	f <sub>T</sub>	2.0	-	MHz

(1) Pulse Test: Pulse Width < 300 μs, Duty Cycle < 2.0%.  
\*Indicates JEDEC Registered Data

