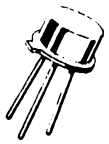
New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

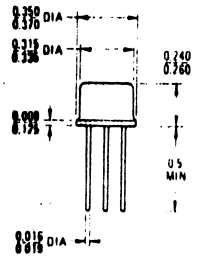
2N6190 thru 2N6193

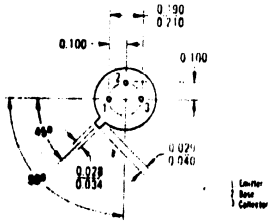


5 AMPERE POWER TRANSISTORS

PNP SILICON

80-100 VOLTS
10 WATTS





All JEDEC dimensions and notes apply

MAXIMUM RATINGS

Rating	Symbol	2N6190 2N6191	2N6192 2N6193	Unit
Collector Emitter Voltage	V_{CEO}	80	100	Vdc
Collector Base Voltage	V_{CB}	80	100	Vdc
Emitter Base Voltage	V_{EB}	6.0		Vdc
Collector Current - Continuous	I_C	5.0		Adc
Base Current	I_B	1.0		Adc
Total Device Dissipation @ T_C = 25°C	P_D	10		Watts
Derate above 25°C		57.1		mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	17.5	°C/W

* ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Fig. No.	Symbol	Min	Max	Unit
OFF CHARACTERISTICS						
Collector Emitter Sustaining Voltage (1) (I_C = 50 mAdc, I_B = 0)	2N6190, 2N6191	-	$V_{CEO(sus)}$	80	-	Vdc
	2N6192, 2N6193			100	-	
Collector Cutoff Current (V_{CE} = 75 Vdc, I_B = 0)	2N6190, 2N6191	-	I_{CEO}	-	100	μAdc
(V_{CE} = 90 Vdc, I_B = 0)	2N6192, 2N6193			-	100	
Collector Cutoff Current (V_{CE} = 75 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N6190, 2N6191	12	I_{CEX}	-	10	μAdc
(V_{CE} = 90 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N6192, 2N6193			-	10	
(V_{CE} = 75 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 150°C)	2N6190, 2N6191			-	1.0	mAdc
(V_{CE} = 90 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 150°C)	2N6192, 2N6193			-	1.0	
Collector Cutoff Current (V_{CB} = 80 Vdc, I_E = 0)	2N6190, 2N6191	-	I_{CBO}	-	10	μAdc
(V_{CB} = 100 Vdc, I_E = 0)	2N6192, 2N6193			-	10	
Emitter Cutoff Current (V_{BE} = 6.0 Vdc, I_C = 0)			I_{EBO}	-	100	μAdc
ON CHARACTERISTICS (1)						
DC Current Gain (I_C = 500 mAdc, V_{CE} = 2.0 Vdc)	2N6190, 2N6192	8	h_{FE}	30	-	-
	2N6191, 2N6193			60	-	
(I_C = 2.0 Adc, V_{CE} = 2.0 Vdc)	2N6190, 2N6192			30	120	
	2N6191, 2N6193			60	240	
(I_C = 5.0 Adc, V_{CE} = 2.0 Vdc)	2N6190, 2N6192			20	-	
	2N6191, 2N6193			40	-	
Collector Emitter Saturation Voltage (I_C = 2.0 Adc, I_B = 0.2 Adc)		9,10,11	$V_{CE(sat)}$	-	0.7	Vdc
(I_C = 5.0 Adc, I_B = 0.5 Adc)				-	1.2	
Base Emitter Saturation Voltage (I_C = 2.0 Adc, I_B = 0.2 Adc)		10,11	$V_{BE(sat)}$	-	1.2	Vdc
(I_C = 5.0 Adc, I_B = 0.5 Adc)				-	1.8	
DYNAMIC CHARACTERISTICS						
Current-Gain Bandwidth Product (2) (I_C = 0.5 Adc, V_{CE} = 10 Vdc, f_{test} = 10 MHz)			f_T	30	-	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)		7	C_{ob}	-	300	pF
Input Capacitance (V_{BE} = 2.0 Vdc, I_C = 0, f = 100 kHz)		7	C_{ib}	-	1250	pF
SWITCHING CHARACTERISTICS						
Delay Time	(V_{CC} = 40 Vdc, $V_{BE(off)}$ = 3.0 Vdc,	2,3	t_d	-	100	ns
Rise Time	I_C = 2.0 Adc, I_{B1} = 0.2 Adc)		t_r	-	100	ns
Storage Time	(V_{CC} = 40 Vdc, I_C = 2.0 Adc	2,6	t_s	-	2.0	μs
Fall Time	I_{B1} = I_{B2} = 0.2 Adc)		t_f	-	200	ns

*Indicates JEDEC Registered Data
(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%
(2) f_T = $|h_{fe}| \cdot f_{test}$