

MAXIMUM RATINGS

Rating	Symbol	2N718A	2N956	2N1711	Unit
Collector-Emitter Voltage	V _{CE}	50			V _{dc}
Collector-Base Voltage	V _{CB}	75			V _{dc}
Emitter-Base Voltage	V _{EB}	7.0			V _{dc}
Total Device Dissipation (at T _A = 25°C Derate above 25°C)	P _D	500	800	800	mW
		2.86	4.57	4.57	mW/°C
Total Device Dissipation (at T _C = 25°C Derate above 25°C)	P _D	1.8	3.0	3.0	Watts
		10.3	17.15	17.15	mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	65 to +200			°C

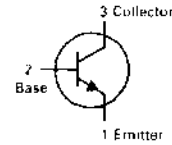
THERMAL CHARACTERISTICS

Characteristic	Symbol	2N718A 2N956	2N1711	Unit
Thermal Resistance, Junction to Ambient	R _{θJA}	350	58	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	97	219	°C/W

2N718A

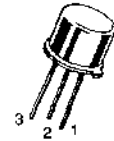
2N956

**CASE 22-03, STYLE 1
TO-18 (TO-206AA)**



2N1711

**CASE 79-04, STYLE 1
TO-39 (TO-205AD)**



**GENERAL PURPOSE
TRANSISTORS**

NPN SILICON

Refer to 2N3019 for graphs.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I _C = 100 mA _{dc} , pulsed; R _{BE} ≈ 10 ohms)(1)	V _{CE(sus)}	50	—	—	V _{dc}
Collector-Base Breakdown Voltage (I _C = 100 μA _{dc} , I _E = 0)	V _{(BR)CB}	75	—	—	V _{dc}
Emitter-Base Breakdown Voltage (I _E = 100 μA _{dc} , I _C = 0)	V _{(BR)EB}	7.0	—	—	V _{dc}
Collector Cutoff Current (V _{CB} = 60 V _{dc} , I _E = 0) (V _{CB} = 60 V _{dc} , I _E = 0, T _A = 150°C)	I _{CBO}	—	0.001	0.01	μA _{dc}
		—	—	10	
Emitter Cutoff Current (V _{EB} = 5.0 V _{dc} , I _C = 0)	I _{EBO}	—	—	0.010	μA _{dc}
		—	—	0.005	

ON CHARACTERISTICS

DC Current Gain (I _C = 0.01 mA _{dc} , V _{CE} = 10 V _{dc})	2N956, 2N1711	h _{FE}	20	—	—	—
(I _C = 0.1 mA _{dc} , V _{CE} = 10 V _{dc})	2N718A, 2N956, 2N1711		20	—	—	—
			35	—	—	—
(I _C = 10 mA _{dc} , V _{CE} = 10 V _{dc})	2N718A, 2N956, 2N1711		35	—	—	—
			75	—	—	—
(I _C = 10 mA _{dc} , V _{CE} = 10 V _{dc} , T _A = 55°C)	2N718A, 2N956, 2N1711		20	—	—	—
			35	—	—	—
(I _C = 150 mA _{dc} , V _{CE} = 10 V _{dc})(1)	2N718A, 2N956, 2N1711		40	—	120	—
			100	—	300	—
(I _C = 500 mA _{dc} , V _{CE} = 10 V _{dc})(1)	2N718A, 2N956, 2N1711		20	—	—	—
			40	—	—	—
Collector-Emitter Saturation Voltage(1) (I _C = 150 mA _{dc} , I _B = 15 mA _{dc})		V _{CE(sat)}	—	0.24	1.5	V _{dc}
Base-Emitter Saturation Voltage(1) (I _C = 150 mA _{dc} , I _B = 15 mA _{dc})		V _{BE(sat)}	—	1.0	1.3	V _{dc}

(1) Pulse Test: Pulse Width ≈ 300 μs, Duty Cycle ≈ 2.0%.

2N718A, 2N956, 2N1711

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

Characteristic	Symbol	Min	Typ	Max	Unit
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product ($I_C = 5.0 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 20 \text{ MHz}$)	f_T	60 70	300 300	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 1 \text{ MHz}$)	C_{obo}	—	4.0	25	pF
Input Capacitance ($V_{EB} = 0.5 \text{ Vdc}$, $I_C = 0$, $f = 1 \text{ MHz}$)	C_{ibo}	—	20	80	pF
Input Impedance ($I_C = 1.0 \text{ mAdc}$, $V_{CB} = 5.0 \text{ Vdc}$, $f = 1.0 \text{ kHz}$) ($I_C = 5.0 \text{ mAdc}$, $V_{CB} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{ib}	24 4.0	— —	34 8.0	ohms
Voltage Feedback Ratio ($I_C = 1.0 \text{ mAdc}$, $V_{CB} = 5.0 \text{ Vdc}$, $f = 1.0 \text{ kHz}$) ($I_C = 5.0 \text{ mAdc}$, $V_{CB} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{rb}	— —	— —	3.0 5.0	$\times 10^{-4}$
Small-Signal Current Gain ($I_C = 1.0 \text{ mAdc}$, $V_{CE} = 5.0 \text{ Vdc}$, $f = 1.0 \text{ kHz}$) ($I_C = 5.0 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{fe}	30 50	— —	100 200	—
Output Admittance ($I_C = 1.0 \text{ mAdc}$, $V_{CB} = 5.0 \text{ Vdc}$, $f = 1.0 \text{ kHz}$) ($I_C = 5.0 \text{ mAdc}$, $V_{CB} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{ob}	0.05 0.05	— —	0.5 0.5	μmhos
Noise Figure ($I_C = 300 \mu\text{A}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	NF	— —	— —	12 8.0	dB