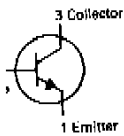


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STYLE 1
(TO-18)



GENERAL PURPOSE
TRANSISTOR

ICDN

Refer to graphs

Max	Unit
—	Vdc
—	Vdc
—	Vdc
1.0 100	μ Adc
120	—
1.5	Vdc
1.3	Vdc
35	pF
—	MHz

MAXIMUM RATINGS

Rating	Symbol	2N718A 2N956	2N1711	Unit
Collector-Emitter Voltage	V _{CE}	50	—	Vdc
Collector-Base Voltage	V _{CB}	75	—	Vdc
Emitter-Base Voltage	V _{EB}	7.0	—	Vdc
Total Device Dissipation (at T _A = 25°C) Derate above 25°C	P _D	500 2.86	800 4.57	mW mW/°C
Total Device Dissipation (at T _C = 25°C) Derate above 25°C	P _D	1.8 10.3	3.0 17.16	Watts 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

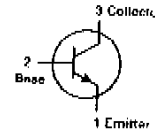
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I _C = 100 mA, pulsed; R _{θJE} = 10 ohms)(1)	V _{CE(sus)}	50	—	—	Vdc
Collector-Base Breakdown Voltage (I _C = 100 μ A, I _E = 0)	V _{(BR)CBO}	75	—	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 100 μ A, I _C = 0)	V _{(BR)EBO}	7.0	—	—	Vdc
Collector Cutoff Current (V _{CB} = 80 Vdc, I _E = 0) (V _{CB} = 60 Vdc, I _E = 0, T _A = 150°C)	I _{CBO}	—	0.001	0.01	μ Adc
Emitter Cutoff Current (V _{EB} = 5.0 Vdc, I _C = 0)	I _{EBO}	—	—	0.010 0.005	μ Adc
ON CHARACTERISTICS					
DC Current Gain (I _C = 0.01 mA, V _{CE} = 10 Vdc)	h _{FE}	2N956, 2N1711		20	—
(I _C = 0.1 mA, V _{CE} = 10 Vdc)		2N718A, 2N956, 2N1711		20 35	—
(I _C = 10 mA, V _{CE} = 10 Vdc)	h _{FE}	2N718A, 2N956, 2N1711		35 75	—
(I _C = 10 mA, V _{CE} = 10 Vdc, T _A = -55°C)		2N718A, 2N956, 2N1711		20 35	—
(I _C = 150 mA, V _{CE} = 10 Vdc)(1)	h _{FE}	2N718A, 2N956, 2N1711		40 100	120 300
(I _C = 500 mA, V _{CE} = 10 Vdc)(1)		2N718A, 2N956, 2N1711		20 40	—
Collector-Emitter Saturation Voltage(1) (I _C = 150 mA, I _B = 15 mA)	V _{CE(sat)}	—	0.24	1.5	Vdc
Base-Emitter Saturation Voltage(1) (I _C = 150 mA, I _B = 15 mA)	V _{BE(sat)}	—	1.0	1.3	Vdc

(1) Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%.

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.

2N718A, 2N956, 2N1711

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

Characteristic	Symbol	Min	Typ	Max	Unit
SMALL-SIGNAL CHARACTERISTICS					
Current Gain — Bandwidth Product (I _C = 50 mA dc, V _{CE} = 10 V dc, f = 20 MHz)	f _T	60 70	300 300	—	MHz
Output Capacitance (V _{CB} = 10 V dc, I _E = 0, f = 1 MHz)	C _{obo}	—	4.0	25	pF
Input Capacitance (V _{EB} = 0.5 V dc, I _C = 0, f = 1 MHz)	C _{ibo}	—	20	80	pF
Input Impedance (I _C = 1.0 mA dc, V _{CB} = 5.0 V dc, f = 1.0 kHz) (I _C = 5.0 mA dc, V _{CB} = 10 V dc, f = 1.0 kHz)	h _{ib}	24 4.0	—	34 8.0	ohms
Voltage Feedback Ratio (I _C = 1.0 mA dc, V _{CB} = 5.0 V dc, f = 1.0 kHz)	h _{rb}	—	—	3.0 5.0	X10 ⁻⁴
(I _C = 5.0 mA dc, V _{CB} = 10 V dc, f = 1.0 kHz)		—	—	3.0 5.0	
Small Signal Current Gain (I _C = 1.0 mA dc, V _{CE} = 5.0 V dc, f = 1.0 kHz)	h _{fe}	30 50	—	100 200	
(I _C = 5.0 mA dc, V _{CE} = 10 V dc, f = 1.0 kHz)		35 70	—	150 300	
Output Admittance (I _C = 1.0 mA dc, V _{CB} = 5.0 V dc, f = 1.0 kHz) (I _C = 5.0 mA dc, V _{CB} = 10 V dc, f = 1.0 kHz)	h _{ob}	0.05 0.05	—	0.5 0.5	μmhos
Noise Figure (I _C = 300 μA dc, V _{CE} = 10 V dc, f = 1.0 kHz)	N _F	—	—	12 8.0	dB

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MAXIMUM RATINGS

Collector-Emitter Voltage
Collector-Emitter Voltage
Collector-Base Voltage
Emitter-Base Voltage
Device Dissipation above 25°C
Device Dissipation above 25°C
Storage and Soldering Temperature Range

THERMAL CHARACTERISTICS

Thermal Resistance

ELECTRICAL CHARACTERISTICS

Collector-Emitter
Collector-Emitter
Collector-Base
Emitter-Base
Collector Cutoff

DC CHARACTERISTICS

DC Current Gain

Collector-Emitter
Base-Emitter

SMALL-SIGNAL CHARACTERISTICS

Current Gain
Output Capacitance
Input Capacitance
Input Impedance
Voltage Feedback
Small-Signal Current Gain
Output Admittance

(1) Pulse Test: P₁