DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N1711

NPN SILICON LOW POWER TRANSISTORS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Ratings	Symbol	All Types	Unit
Collector-Emitter Voltage ($R_{BE} \leq 10\Omega$)	V_{CEO}	50	Vdc
Collector-Base Voltage ($I_E = 0$)	V_{CBO}	75	Vdc
Emitter-Base Voltage ($I_C = 0$)	V_{EBO}	7.0	Vdc
Collector Current	I_C	800	mAdc
Total Power Dissipation @ T_A = +25°C $T_C \leq 25°C$ $T_C \leq 100°C$	P_T	0.8 3 1.7	W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	°C

ELECTRICAL CHARACTERSITICS (T_A = 25°C unless otherwise specified)

Characteristics	Symbol	Min.	Max.	Unit
Collector-Base Cutoff Current V_{CB} = 60 Vdc V_{CB} = 60 Vdc, T_C = 150°C	I_{CBO}		10 10	ηAdc µAdc
Emitter-Base Cutoff Current V_{EB} = 5.0 Vdc, I_C = 0	I_{EBO}		5	ηAdc
Collector-Base Breakdown Voltage $R_{BE} \leq 10\Omega$, I_C = 10mA	$V_{(BR)CER}$	50		Vdc
Collector-Emitter Breakdown Voltage I_C = 0, I_E = 100µA	$V_{(BR)CEO}$	7		Vdc
Collector-Emitter Saturation Voltage I_C = 150 mAdc, I_B = 15 mAdc	$V_{CE(sat)}$		1.5	Vdc
Base-Emitter Saturation Voltage I_C = 150 mAdc, I_B = 15 mAdc	$V_{BE(sat)}$		1.3	Vdc
DC Current Gain I_C = 10µAdc, V_{CE} = 10 Vdc I_C = 0.1mAdc, V_{CE} = 10 Vdc I_C = 10 mAdc, V_{CE} = 10 Vdc I_C = 150 mAdc, V_{CE} = 10 Vdc I_C = 500 mAdc, V_{CE} = 10 Vdc I_C = 10 mAdc, V_{CE} = 10 Vdc, T_C = -55°C	h_{FE}	 20 35 75 100 40 35		
Small Signal Current Gain I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz	h_{fe}	70	300	
Transition Frequency I_C = 50mA, V_{CE} = 10V, f = 20MHz	f_T	70		MHz
Emitter Base Capacitance I_C = 0, V_{EB} = 0.5V, f = 1MHz	C_{EBO}		80	pF

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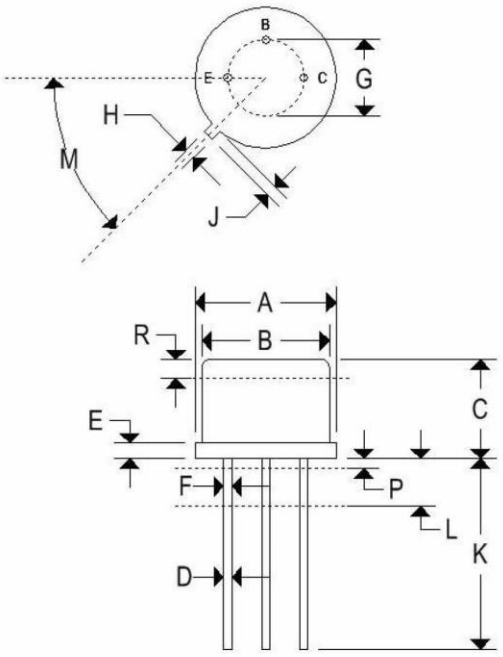
ELECTRICAL CHARACTERSITICS (T_A = 25°C unless otherwise specified)

Collector Base Capacitance I_E = 0, V_{CB} = 10V, f = 1MHz	C_{EBO}		25	pF
Noise Figure I_C = 0.3mA, V_{CE} = 10V, R_g = 510Ω, f = 1kHz	NF		8	dB
Input Impedance I_C = 1mA, V_{CE} = 5V, f 1kHz	h_{ie}		4.4	kΩ
Reverse Voltage Ratio I_C = 1mA, V_{CE} = 5V, f = 1kHz	h_{re}		$7.3x10^{-4}$	
Output Admittance	h_{oe}		23.8	µS

MECHANICAL CHARACTERISTICS

Case	TO-39
Marking	Alpha-numeric
Polarity	See below



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.350	0.370	8.890	9.400
B	0.315	0.335	8.000	8.510
C	0.240	0.260	6.10	6.60
D	0.016	0.021	0.406	0.533
E	0.009	0.125	0.2269	3.180
F	0.016	0.019	0.406	0.533
G	0.190	0.210	4.830	5.33
H	0.028	0.034	0.711	0.864
J	0.029	0.040	0.737	1.020
K	0.500	-	12.700	-
L	0.250	-	6.350	-
M	45° NOM		45° NOM	
P	-	0.050	-	1.270
Q	90° NOM		90° NOM	
R	0.100	-	2.540	-