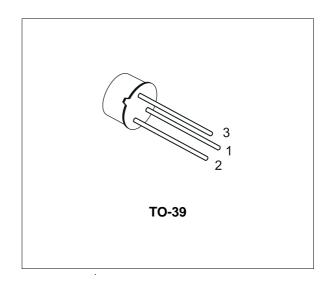


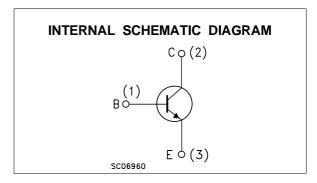
EPITAXIAL PLANAR NPN

DESCRIPTION

The 2N1711 is a silicon Planar Epitaxial NPN transistor in Jedec TO-39 metal case. It is intented for use in high performance amplifier, oscillator and switching circuits.

The 2N1711 is also used to advantage in amplifiers where low noise is an important factor.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage (I _E = 0)	75	V
V _{CER}	Collector-Emitter Voltage ($R_{BE} \le 10\Omega$)	50	V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	7	V
Ic	Collector Current	500	mA
P _{tot}	Total Dissipation at $T_{amb} \le 25$ °C at $T_C \le 25$ °C at $T_C \le 100$ °C	0.8 3 1.7	W W W
T _{stg}	Storage Temperature	-65 to 175	°C
Tj	Max. Operating Junction Temperature	175	°C

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THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-Case	Max	50	°C/W
R _{thj-amb}	Thermal Resistance Junction-Ambient	Max	187.5	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

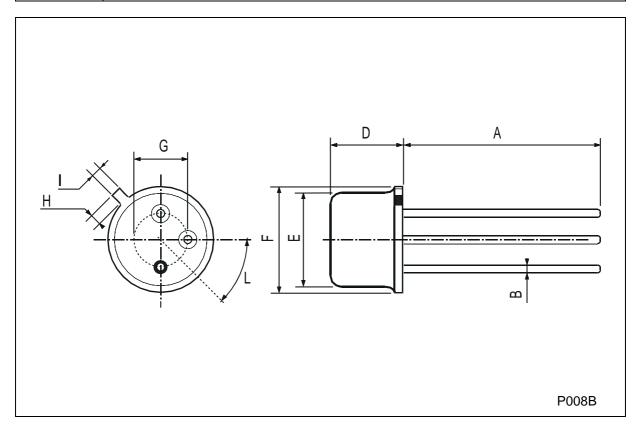
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	$V_{CB} = 60 \text{ V}$ $V_{CB} = 60 \text{ V}$ $T_{C} = 150 \text{ °C}$			10 10	nΑ μΑ
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			5	nA
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 100 μA	75			V
V _{(BR)CER*}	Collector-Emitter Breakdown Voltage $(R_{BE} \le 10\Omega)$	I _C = 10 mA	50			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _C = 0)	I _E = 100 μA	7			V
$V_{CE(sat)^*}$	Collector-Emitter Saturation Voltage	$I_C = 150 \text{ mA}$ $I_B = 15 \text{ mA}$		0.5	1.5	V
$V_{BE(sat)^*}$	Base-Emitter Saturation Voltage	$I_C = 150 \text{ mA}$ $I_B = 15 \text{ mA}$		0.95	1.3	V
h _{FE} *	DC Current Gain	$\begin{array}{llllllllllllllllllllllllllllllllllll$	20 35 75 100 40	60 80 130 130 75	300	
h _{fe}	Small Signal Current Gain	I _C = 1 mA V _{CE} = 10 V f = 1 KHz	70	135	300	
f⊤	Transition Frequency	I _C = 50 mA V _{CE} = 10 V f = 20 MHz	70	100		MHz
Сево	Emitter-Base Capacitance	I _C = 0 V _{EB} = 0.5 V f = 1 MHz		50	80	pF
Ссво	Collector-Base Capacitance	I _E = 0 V _{CB} = 10 V f = 1 MHz		18	25	pF
NF	Noise Figure	$I_C = 0.3 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $R_g = 510 \Omega$ $f = 1 \text{ KHz}$		3.5	8	dB
h _{ie}	Input Impedance	$I_C = 1 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $f = 1 \text{ KHz}$		4.4		ΚΩ
h _{re}	Reverse Voltage Ratio	$I_C = 1 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $f = 1 \text{ KHz}$		7.3 x 10 ⁻⁴		
h _{oe}	Output Admittance	I _C = 1 mA V _{CE} = 5 V f = 1 KHz		23.8		μS

^{*} Pulsed: Pulse duration = 300 μ s, duty cycle \leq 1 %

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TO-39 MECHANICAL DATA

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	12.7			0.500			
В			0.49			0.019	
D			6.6			0.260	
Е			8.5			0.334	
F			9.4			0.370	
G	5.08			0.200			
Н			1.2			0.047	
I			0.9			0.035	
L	45° (typ.)						



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