

2N1711

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
VCER	Collector-Emitter Voltage ($R_{BE} \leq 10\Omega$)	50	V
V _{EBO}	Emitter-Base Voltage $(I_C = 0)$	7	V
lc	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	\$ \$ \$
T _{stg}	Storage Temperature	-65 to 175	°C
Tj	Max. Operating Junction Temperature	175	°C

THERMAL DATA

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

ELECTRICAL CHARACTERISTICS ($T_{case} = 25 \ ^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
Ісво	Collector Cut-off Current (I _E = 0)	$V_{CB} = 60 V$ $V_{CB} = 60 V$ $T_{C} = 150 \ ^{\circ}C$			10 10	nA μA
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 mA I _B = 15 mA		0.5	1.5	V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = 150 mA I _B = 15 mA		0.95	1.3	V
h _{FE} *	DC Current Gain		20 35 75 100 40 35	60 80 130 130 75 65	300	
h _{fe}	Small Signal Current Gain	I _C = 1 mA V _{CE} = 10 V f = 1 KHz	70	135	300	
f⊤	Transition Frequency	$I_{C} = 50 \text{ mA} \text{ V}_{CE} = 10 \text{ V} \text{ f} = 20 \text{ MHz}$	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	$I_E = 0 \qquad \qquad V_{CB} = 10 \ V f = 1 \ MHz$		18	25	pF
NF	Noise Figure	$ I_{C} = 0.3 \text{ mA} \qquad V_{CE} = 10 \text{ V} \\ R_{g} = 510 \Omega \qquad \qquad 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		KΩ
h _{re}	Reverse Voltage Ratio	$I_{C} = 1 \text{ mA}$ $V_{CE} = 5 \text{ V}$ f = 1 KHz		7.3 x 10 ⁻⁴		
h _{oe}	Output Admittance	$I_{C} = 1 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $f = 1 \text{ KHz}$		23.8		μS

 \ast Pulsed: Pulse duration = 300 $\mu s,$ duty cycle \leq 1 %

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DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
А	12.7			0.500		
В			0.49			0.019
D			6.6			0.260
E			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°	(tvp.)	•	•





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