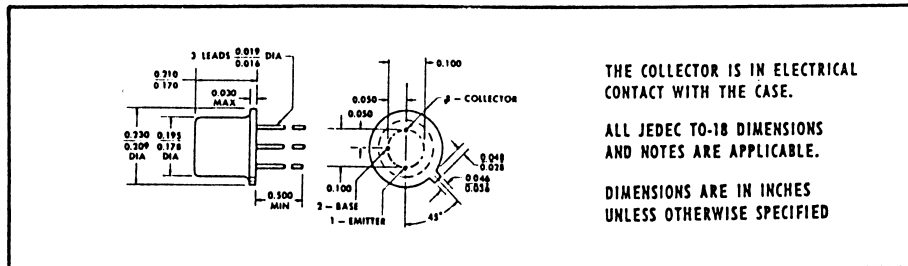


20 STERN AVE.
 SPRINGFIELD, NEW JERSEY 07081
 U.S.A.

TELEPHONE: (201) 376-2922
 (212) 227-6005
 TELEX: 13-8720

2N709 N-P-N EPITAXIAL PLANAR SILICON TRANSISTOR

mechanical data



absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)

Collector-Base Voltage	15 v
Collector-Emitter Voltage (See Note 1)	6 v
Emitter-Base Voltage	4 v
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 2)	0.3 w
Continuous Device Dissipation at (or below) 100°C Case Temperature (See Note 3)	0.5 w
Storage Temperature Range	-65°C to +200°C
Lead Temperature 1/8 Inch from Case for 10 Seconds	300°C

electrical characteristics at 25°C free-air temperature (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CBO}$ Collector-Base Breakdown Voltage	$I_C = 10 \mu a, I_E = 0$	15		v
$V_{(BR)CEO}$ Collector-Emitter Breakdown Voltage	$I_C = 10 ma, I_B = 0, \text{ See Note 4}$	6		v
$V_{(SR)EBO}$ Emitter-Base Breakdown Voltage	$I_E = 10 \mu a, I_C = 0$	4		v
I_{CBO} Collector Cutoff Current	$V_{CB} = 5 v, I_E = 0$		50	na
	$V_{CB} = 5 v, I_E = 0, T_A = 125^\circ C$		5	μa
h_{FE} Static Forward Current Transfer Ratio	$V_{CE} = 0.5 v, I_C = 10 ma, \text{ See Note 4}$	30	90	
	$V_{CE} = 1 v, I_C = 30 ma, \text{ See Note 4}$	15		
	$V_{CE} = 0.5 v, I_C = 10 ma, T_A = -55^\circ C, \text{ See Note 4}$	10		
	$V_{CE} = 3 v, I_C = 100 \mu a,$	45		
V_{BE} Base-Emitter Voltage	$I_B = 0.15 ma, I_C = 3 ma$	0.7	0.85	v
$V_{CE(sat)}$ Collector-Emitter Saturation Voltage	$I_B = 0.15 ma, I_C = 3 ma$		0.3	v
f_T Transition Frequency	$V_{CE} = 4 v, I_C = 5 ma, \text{ See Note 5}$	600		Mc
C_{obo} Common-Base Open-Circuit Output Capacitance	$V_{CB} = 5 v, I_E = 0, f = 140 kc$		3	pf
C_{ibo} Common-Base Open-Circuit Input Capacitance	$V_{EB} = 0.5 v, I_C = 0, f = 140 kc$		2	pf

- NOTES: 1. This value applies when the base-emitter diode is open circuited.
 2. Derate linearly to 200°C free-air temperature at the rate of 1.71 mw/C°.
 3. Derate linearly to 200°C case temperature at the rate of 5 mw/C°.
 4. These parameters must be measured using pulse techniques. PW = 300 μ sec, Duty Cycle \leq 2%.
 5. To obtain f_T , the $|h_{fe}|$ response with frequency is extrapolated at the rate of -6db per octave from $f = 100$ Mc to the frequency at which $|h_{fe}| = 1$.

