DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N917-2N918

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

Parameters	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	15	V
Emitter-base voltage	V_{EBO}	3	V
Collector current	I_C	50	mA
Power dissipation T_{amb} = 25°C T_{case} = 25°C	P_{tot}	200 300	mW
Maximum junction temperature	T_J	200	°C
Storage temperature range	t_{stg}	-65 to +200	°C

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

Parameter	Test Conditions	Symbol	Part Number	Min	Typ	Max	Unit
Collector base cutoff current	V_{CB} = 15V, I_E = 0	I_{CBO}	2N917 2N918	- -	- -	1 10	nA
	V_{CB} = 15V, I_E = 0, T_{amb} = 150°C		2N917 2N918	- -	- -	0.1 1.0	µA
Collector base breakdown voltage	I_E = 0, I_C = 1µA	$V_{(BR)CBO}$		30	-	-	V
Collector emitter breakdown voltage	I_B = 0, I_C = 3mA	$V_{BR(CEO)}$*		15	-	-	V
Emitter base breakdown voltage	I_C = 0, I_E = 10µA	$V_{(BR)EBO}$		3	-	-	V
Static forward current transfer ratio	V_{CE} = 1V, I_C = 3mA	H_{21E}	2N917 2N918	20 20	- -	200	
Collector emitter saturation voltage	I_C = 3mA, I_B = 0.15mA	V_{CEsat}	2N917	-	-	0.5	V
	I_C = 10mA, I_B = 1mA		2N918	-	-	0.4	V
Base emitter saturation voltage	I_C = 3mA, I_B = 0.15mA	V_{BEsat}	2N917	-	-	0.87	V
	I_C = 10mA, I_B = 1mA		2N918	-	-	1	V
Transition frequency	V_{CE} = 10V, I_C = 4mA, f = 100MHz	f_T	2N917 2N918	500 600	- -	- -	MHz
Output capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz	C_{22b}	2N917 2N918	- -	- -	1.7	pF
	V_{CB} = 0, I_E = 0, f = 1MHz		2N918	-	-	3	pF
Input capacitance	V_{EB} = 0.5V, I_C = 0, f = 1MHz	C_{11b}	2N917 2N918	- -	- -	1.6 2	pF
Feedback time constant	V_{CB} = 10V, I_C = 4mA, f = 40MHz	$\frac{\lvert h_{12b}\rvert}{\omega}$	2N917	-	-	75	ps
Noise figure	V_{CE} = 6V, I_C = 1mA, R_g = 400Ω, f = 60MHz	F		-	-	6	dB

- **Pulsed t_p = 300µs, duty cycle ≤ 2%.**

DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

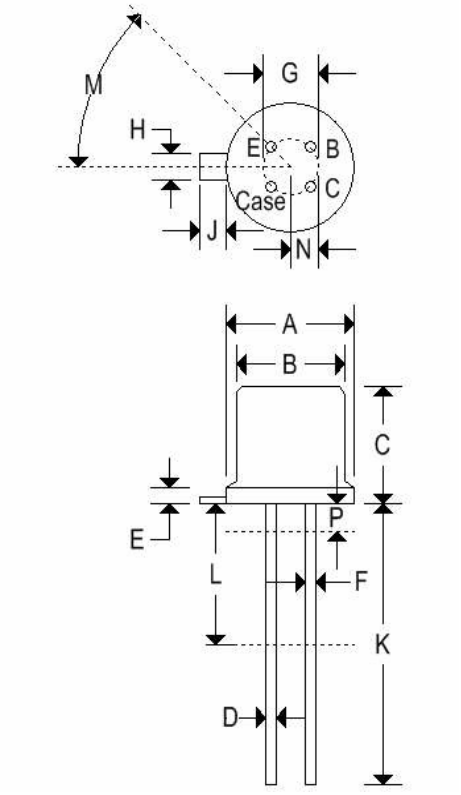
2N917-2N918

NPN SILICON LOW POWER TRANSISTORS

Parameter	Test Conditions	Symbol	Part Number	Min	Typ	Max	Unit
Power gain (neutralized)	V_{CE} = 10V, I_C = 5mA, f = 200MHz	G_P	2N917	9	-	-	dB
	V_{CE} = 12V, I_C = 6mA f = 200MHz, $R_G = R_L = 50\Omega$		2N918	15	-	-	
Collector efficiency	V_{CE} = 15V, I_C = 8mA, f = 500MHz	η_C	2N918	25	-	-	%
Oscillator output power	V_{CE} = 15V, I_C = 8mA, f = 500MHz	P_{osc}	2N917 2N918	10 30	- -	- -	mW

MECHANICAL CHARACTERSITICS

Case	TO-72
Marking	Alpha-numeric
Polarity	See below



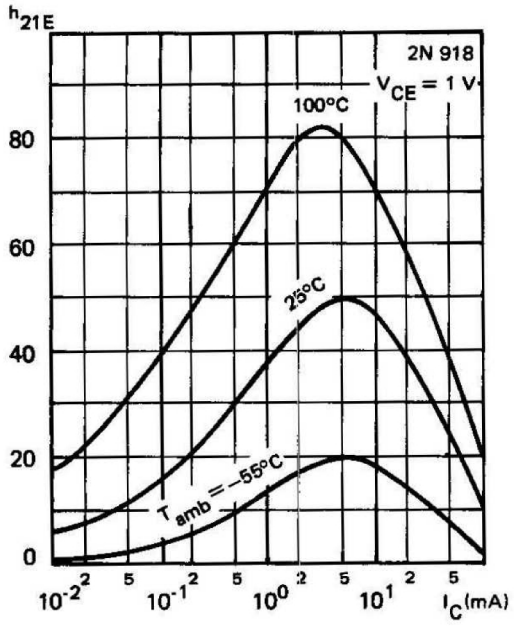
	TO-72			
	Inches		Millimeters	
	Min	Max	Min	Max
A	-	0.230	-	5.840
B	-	0.195	-	4.950
C	-	0.210	-	5.330
D	-	0.021	-	0.530
E	-	0.030	-	0.760
F	-	0.019	-	0.480
G	0.100 BSC		2.540 BSC	
H	-	0.046	-	1.170
J	-	0.048	-	1.220
K	0.500	-	12.700	-
L	0.250	-	-	6.350
M	45° BSC		45° BSC	
N	0.050 BSC		1.270 BSC	
P	-	0.050	-	1.270

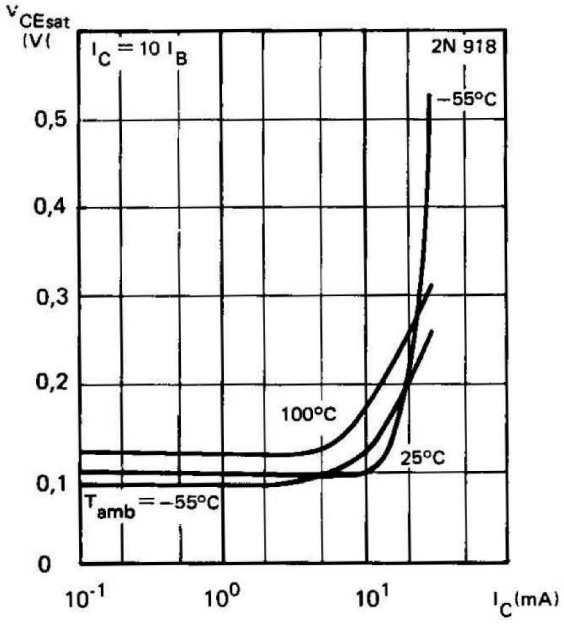
DIGITRON™ Semiconductors

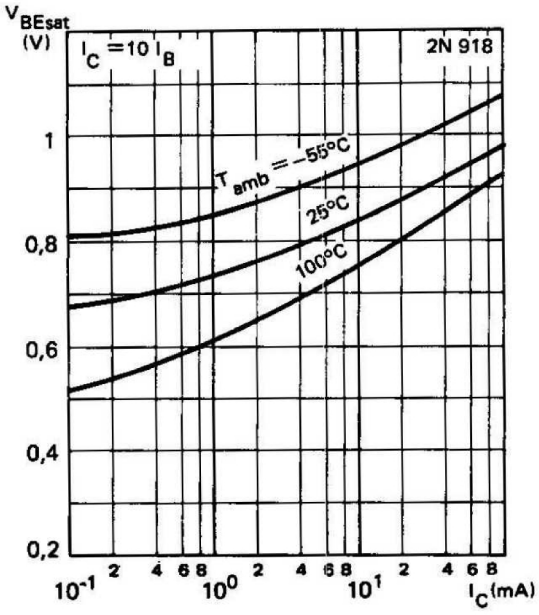
High-reliability discrete products and engineering services since 1977

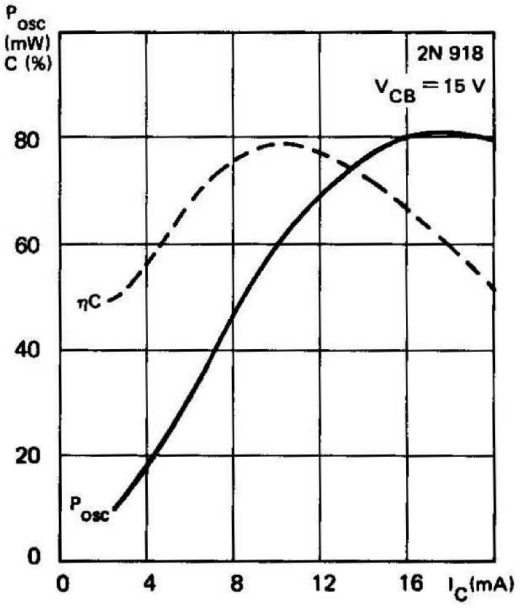
2N917-2N918

NPN SILICON LOW POWER TRANSISTORS









DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N917-2N918

NPN SILICON LOW POWER TRANSISTORS