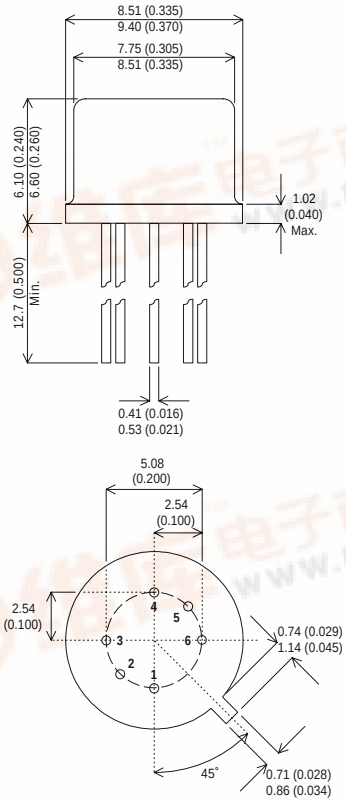
SEME LAB

2N2913
2N2915
2N2917

DUAL NPN PLANAR TRANSISTORS IN TO77 PACKAGE

MECHANICAL DATA
Dimensions in mm (inches)



TO–77 PACKAGE

PIN 1 – Collector 1	PIN 4 – Emitter 2
PIN 2 – Base 1	PIN 5 – Base 2
PIN 3 – Emitter 1	PIN 6 – Collector 2

ABSOLUTE MAXIMUM RATINGS

		(T_{amb} = 25°C unless otherwise stated)	EACH SIDE	TOTAL DEVICE
V_{CBO}	Collector – Base Voltage		45V	
V_{CEO}	Collector – Emitter Voltage [1]		45V	
V_{EBO}	Emitter – Base Voltage		6V	
I_C	Continuous Collector Current		30	
P_D	Total Device Dissipation	T_{AMB} = 25°C	300mW	500mW
		Derate above 25°C	1.72mW / °C	2.86W / °C
P_D	Total Device Dissipation	T_C = 25°C	750mW	1.5W
		Derate above 25°C	4.3mW / °C	8.6mW / °C
T_{STG}	Storage Temperature Range		–65 to 200°C	
T_L	Lead temperature (Soldering, 10 sec.)		300°C	

NOTES
1. Base – Emitter Diode Open Circuited.

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise stated)

Parameter		Test Conditions [1]		Min.	Typ.	Max.	Unit
INDIVIDUAL TRANSISTOR CHARACTERISTICS							
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 10μA	I_E = 0	45			V
$V_{(BR)CEO}$*	Collector – Emitter Breakdown Voltage	I_C = 10mA	I_B = 0	45			
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 10μA	I_C = 0	6			
I_{CBO}	Collector Cut-off Current	V_{CB} = 45V	I_E = 0			10	nA
			T_A = 150°C			10	μA
I_{CEO}	Collector Cut-off Current	V_{CE} = 5V	I_B = 0			2	nA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V	I_C = 0			2	
h_{FE}	DC Current Gain	V_{CE} = 5V	I_C = 10μA	60		240	—
			T_A = –55°C	15			
		V_{CE} = 5V	I_C = 100μA	100			
		V_{CE} = 5V	I_C = 1mA	150			
V_{BE}	Base – Emitter Voltage	V_{CE} = 5V	I_C = 100μA			0.70	V
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_B = 100μA	I_C = 1mA			0.35	
h_{ib}	Small Signal Common – Base Input Impedance	V_{CB} = 5V, f = 1kHz	I_C = 1mA	25		32	Ω
h_{ob}	Small Signal Common – Base Output Admittance	V_{CB} = 5V, f = 1kHz	I_C = 1mA			1	μmho
$\|h_{fe}\|$	Small Signal Common – Base Current Gain	V_{CE} = 5V, f = 20MHz	I_C = 500μA	3			—
C_{obo}	Common – Base Open Circuit Output Capacitance	V_{CB} = 5V, f = 140kHz to 1MHz	I_E = 0			6	pF

* Pulse Test: t_p = 300μs , δ ≤ 1%.

Parameter		Test Conditions		2N2915 Min.	2N2915 Typ.	2N2915 Max.	2N2917 Min.	2N2917 Typ.	2N2917 Max.	Unit
TRANSISTOR MATCHING CHARACTERISTICS										
$\frac{h_{FE1}}{h_{FE2}}$	Static Forward Current Gain Balance Ratio	V_{CE} = 5V, See Note 2.	I_C = 100μA	0.9		1	0.8		1	—
$\|V_{BE1} - V_{BE2}\|$	Base – Emitter Voltage Differential	V_{CE} = 5V	I_C = 100μA			3			5	mV
		V_{CE} = 5V	I_C = 10μA to 1mA			5			10	
$\|\Delta(V_{BE1} - V_{BE2})\Delta T_A\|$	Base – Emitter Voltage Differential Change With Temperature	V_{CE} = 5V, T_{A1} = 25°C	I_C = 100μA, T_{A2} = –55°C			0.8			1.6	mV
		V_{CE} = 5V, T_{A1} = 25°C	I_C = 100μA, T_{A2} = 125°C			1			2	

NOTES

1) Terminals not under test are open circuited under all test conditions.

2) The lower of the two readings is taken as h_{FE1}.