New Jersey Semi-Conductor Products, Inc.

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

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

2N2914 2N2916 2N2918 DUAL NPN PLANAR TRANSISTORS IN TO77 PACKAGE

	(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.

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	150		600	—
		T_A = –55°C	30			
		V_{CE} = 5V I_C = 100μA	225			
		V_{CE} = 5V I_C = 1mA	300			
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 I_C = 1mA f = 1kHz	25		32	Ω
h_{ob}	Small Signal Common – Base Output Admittance	V_{CB} = 5V I_C = 1mA f = 1kHz			1	μmho
$\|h_{fe}\|$	Small Signal Common – Base Current Gain	V_{CE} = 5V I_C = 500μA f = 20MHz	3			—
C_{obo}	Common – Base Open Circuit Output Capacitance	V_{CB} = 5V I_E = 0 f = 140kHz to 1MHz			6	pF

* Pulse Test: t_p = 300μs , δ ≤ 1%.

Parameter		Test Conditions		2N2916 Min.	2N2916 Typ.	2N2916 Max.	2N2918 Min.	2N2918 Typ.	2N2918 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	—
$\lvert V_{BE1} - V_{BE2} \rvert$	Base – Emitter Voltage Differential	V_{CE} = 5V	I_C = 100μA			3			5	mV
		V_{CE} = 5V	I_C = 10μA to 1mA			5			10	
$\lvert \Delta(V_{BE1} - V_{BE2})\Delta T_A \rvert$	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	

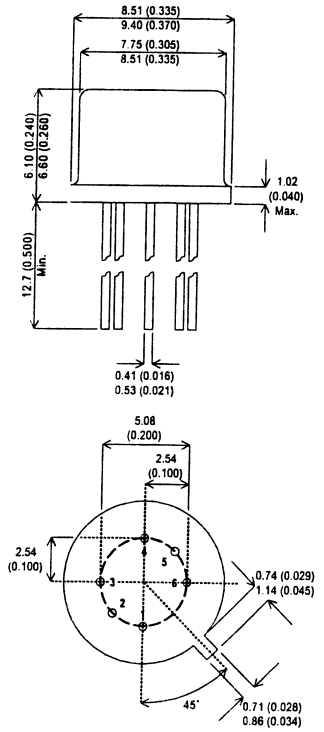
NOTES

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

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

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