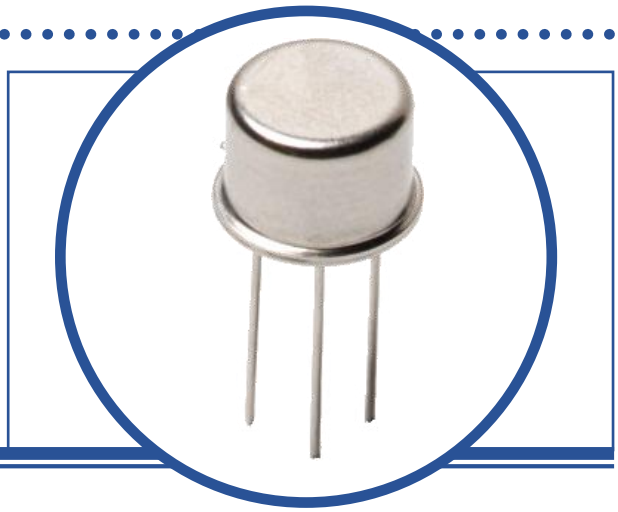
SILICON PLANAR EPITAXIAL PNP TRANSISTOR

TT electronics
Semelab Limited

2N2905A



- Hermetic TO-39 Metal package.
- High Speed Saturated Switching
- Screening Options Available

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage		-60V
V_{CEO}	Collector – Emitter Voltage		-60V
V_{EBO}	Emitter – Base Voltage		-5V
I_C	Continuous Collector Current		-600mA
P_D	Total Power Dissipation at	T_C = 25°C	3.0W
		Derate Above 25°C	22.2mW/°C
P_D	Total Power Dissipation at	T_A = 25°C	0.8W
		Derate Above 25°C	5.9mW/°C
T_J	Junction Temperature Range		-65 to +200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	195	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction To Case	50	°C/W

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
I_{CES}	Collector to emitter Cut-off current	V_{CE} = -60V				-1.0	µA
I_{CBO}	Collector Cut-Off Current		V_{CB} = -60V			-10	µA
		T_A= +150°C	V_{CB} = -50V			-10	µA
I_{EBO}	Emitter Cut-Off Current		V_{EB} = -5.0V			-10	µA
			V_{EB} = -3.5V			-50	nA
h_{FE}[1]	Forward-current transfer ratio	V_{CE} = -10V	I_C = -0.1mA	75			
			I_C = -1.0mA	100		450	
			I_C = -10mA	100			
			I_C = -150mA	100		300	
			I_C = -500mA	50			
		T_A= -55°C	I_C = -1.0mA	50			
$V_{(BR)CEO}$[1]	Collector-Emitter Breakdown Voltage	I_C = -10mA		-60			V
$V_{CE(sat)}$[1]	Collector-Emitter Saturation Voltage	I_C = -150mA	I_B = -15mA			-0.4	V
		I_C = -500mA	I_B = -50mA			-1.6	V
$V_{BE(sat)}$[1]	Base-Emitter Saturation Voltage	I_C = -150mA	I_B = -15mA			-1.3	V
		I_C = -500mA	I_B = -50mA			-2.6	V

DYNAMIC CHARACTERISTICS

t_{on}	Turn-on time	V_{CC} = -30V, I_{B1} = -15mA	I_C = -150mA			45	ns
t_{off}	Turn-off time	V_{CC} = -6V, I_{B1} = -15mA	I_C = -150mA			300	ns
C_{obo}	Output Capacitance	V_{CB} = -10V, f = 1.0MHz	I_E = 0			8	pF
C_{ibo}	Input Capacitance	V_{EB} = -10V, f = 1.0MHz	I_C = 0			30	pF
$\|h_{fe}\|$	Small Signal Current Gain	V_{CE} = -20V, f = 100MHz	I_C = -50mA	2.0			
h_{fe}	Small-signal short-circuit forward-current transfer ratio	V_{CE} = -10V, f = 1.0kHz	I_C = -1.0mA	100			

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

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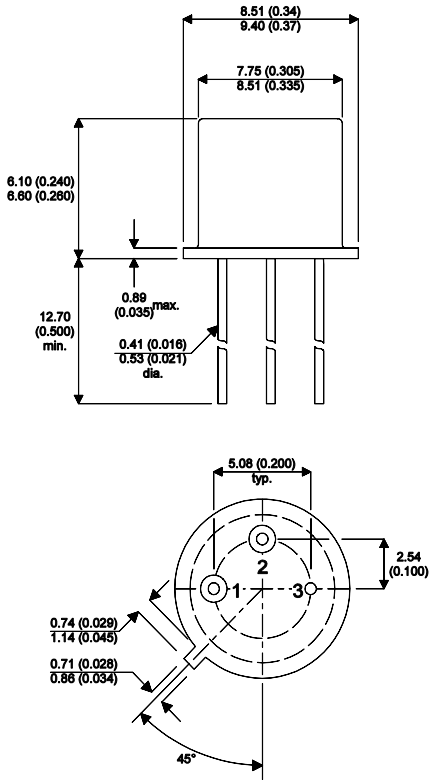
MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE

Underside View

Pin 1 - Emitter Pin 2 - Base Pin 3 - Collector