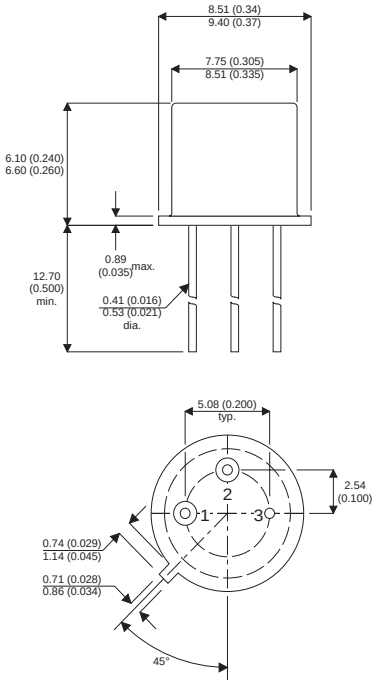
2N2219

MECHANICAL DATA
Dimensions in mm (inches)



TO–39 (TO-205AD)
Underside View

PIN 1 – Emitter PIN 2 – Base PIN 3 – Collector

HIGH SPEED MEDIUM POWER, NPN SWITCHING TRANSISTOR

FEATURES

- **SILICON PLANAR EPITAXIAL NPN TRANSISTOR**
- **HIGH SPEED SATURATED SWITCHING**
- **ALSO AVAILABLE IN CERAMIC SURFACE MOUNT PACKAGE**

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

V_{CBO}	Collector – Base Voltage		60V
V_{CEO}	Collector – Emitter Voltage		30V
V_{EBO}	Emitter – Base Voltage		5V
I_C	Collector Current		800mA
P_D	Total Device Dissipation	@ T_A = 25°C	0.8W
P_D	Total Device Dissipation	@ T_C = 25°C	3W
T_{STG}	Storage Temperature Range		–65 to +200°C
T_J	Junction Temperature		175°C
$R_{\theta ja}$	Thermal Resistance Junction to Ambient		187.5°C/W
$R_{\theta jc}$	Thermal Resistance Junction to Case		50°C/W

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SEME LAB

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

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	OFF CHARACTERISTICS						
$V_{(BR)CEO}$	Collector – Emitter Breakdown Voltage	I_C = 10mA	I_B = 0	30			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 10µA	I_E = 0	60			V
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 10µA	I_C = 0	5			V
I_{EBO}	Emitter Cut-off Current	I_C = 0	V_{EB} = 3V			10	nA
I_{CBO}	Collector – Base Cut-off Current	I_E = 0	V_{CB} = 50V			10	nA
			T_A = 150°C			10	µA
	ON CHARACTERISTICS						
$V_{CE(sat)}$ [1]	Collector – Emitter Saturation Voltage	I_C = 150mA	I_B = 15mA			0.4	V
		I_C = 500mA	I_B = 50mA			1.6	
$V_{BE(sat)}$ [1]	Base – Emitter Saturation Voltage	I_C = 150mA	I_B = 15mA			1.3	V
		I_C = 500mA	I_C = 50mA			2.6	
h_{FE}	DC Current Gain	I_C = 0.1mA	V_{CE} = 10V	35			—
		I_C = 1.0mA	V_{CE} = 10V	50			
		I_C = 10mA	V_{CE} = 10V	75			
		I_C = 150mA	V_{CE} = 10V [1]	100		300	
		I_C = 500mA	V_{CE} = 10V [1]	30			
		I_C = 150mA	V_{CE} = 1.0V [1]	50			
f_T	Transition Frequency [2]	I_C = 20mA f = 100MHz	V_{CE} = 20V	250			MHz
C_{CBO}	Collector Base Capacitance	V_{CB} = 10V f = 100kHz	I_E = 0			8	pF

NOTES:

1) Pulse test: $t_p \leq 300\mu s$, $\delta \leq 2\%$

2) f_T is defined as the frequency at which h_{FE} extrapolates to unity.

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