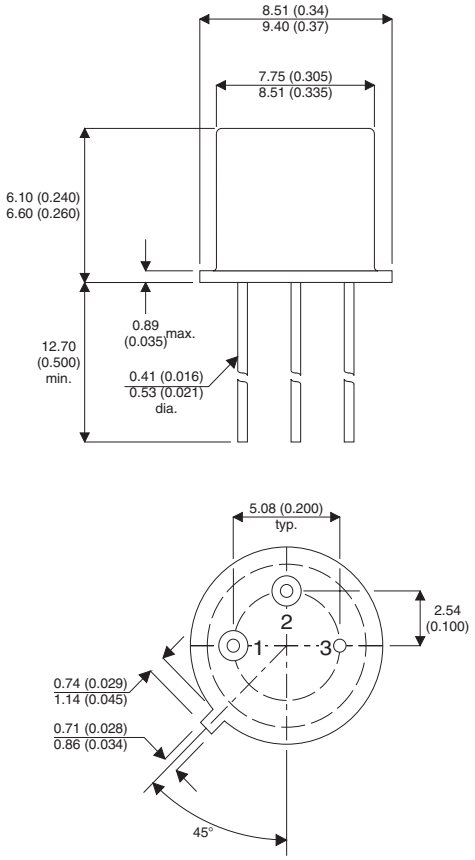
2N5781

MECHANICAL DATA

Dimensions in mm (inches)



TO39 (TO205AD) Package

PIN 1 – Emitter PIN 2 – Base PIN 3 – Case

SILICON EPITAXIAL PNP TRANSISTOR

General-Purpose types for Switching and Linear-Amplifier Applications

FEATURES

- **Low saturation voltages**
- **Maximum Safe area of operation curves**
- **High gain at high current**
- **High breakdown voltages**

The 2N5781 is intended for medium-power switching and complementary-symmetry audio amplifier applications.

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

V_{CBO}	Collector – Base Voltage		-80V
$V_{CER(BR)}$	Collector – Emitter Breakdown Voltage	R_{BE} = 100Ω	-80V
$V_{CEO(BR)}$	Collector – Emitter Breakdown Voltage		-65V
V_{EBO}	Emitter – Base Voltage		-5V
I_C	Continuous Collector Current		-3.5A
I_B	Continuous Base Current		-1A
P_T	Total Device Dissipation	At Case Temperatures up to = 25°C	10W
		At Ambient Temperatures up to = 25°C	1W
T_J , T_{STG}	Operating Junction and Storage Temperature Range		–65 to +200°C

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SEME LAB

2N5781

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

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current	V_{CE} = -65V				- 10	µA
		R_{BE} = 100Ω	T_C = 150°C			- 1.0	mA
I_{CEX}	Collector Cut-off Current	V_{CE} = - 75V	V_{BE} = -1.5V			- 10	µA
		R_{BE} = 100Ω	T_C = 150°C			- 1.0	mA
I_{CEO}	Collector Cut-off Current	V_{CE} = -50V	I_B = 0			- 100	µA
I_{EBO}	Emitter Cut-off Current	V_{BE} = - 5V	I_C = 0			- 10	µA
h_{FE*}	DC Current Gain	V_{CE} = -2V	I_C = -1.0A	20		100	—
		V_{CE} = -2V	I_C = -3.2A	4			
$V_{CEO(BR)*}$	Collector – Emitter Breakdown Voltage	I_C =- 10mA	I_B = 0	- 65			V
$V_{CER(BR)*}$	Collector – Emitter Breakdown Voltage	I_C = -10mA	R_{BE} = 100Ω	- 80			
V_{BE}	Base – Emitter Voltage	V_{CE} = -2V	I_C = -1.0A			- 1.5	V
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_C = -1.0A	I_B = - 0.1A			- 0.5	
f_T	Transition Frequency	V_{CE} = - 2V f = 4MHz	I_C = - 0.1A	8		60	MHz
h_{fe}	Small Signal Common – Emitter Current Gain	V_{CE} = -2V f = 1.0kHz	I_C = -0.1mA	25			—
t_{ON}	Saturated Switching Time	V_{CC}= -30V	I_{B1} = I_{B2}			0.5	µs
t_{OFF}	Turn-off Time	I_C = -1.0A	I_B = - 0.1A			2.5	
$R_{\theta JC}$	Thermal Resistance Junction – Case					17.5	°C/W
$R_{\theta JA}$	Thermal Resistance Junction – Ambient					175	

NOTES

1. * Pulse Test: t_p = 300µs, δ = 1.8%.

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