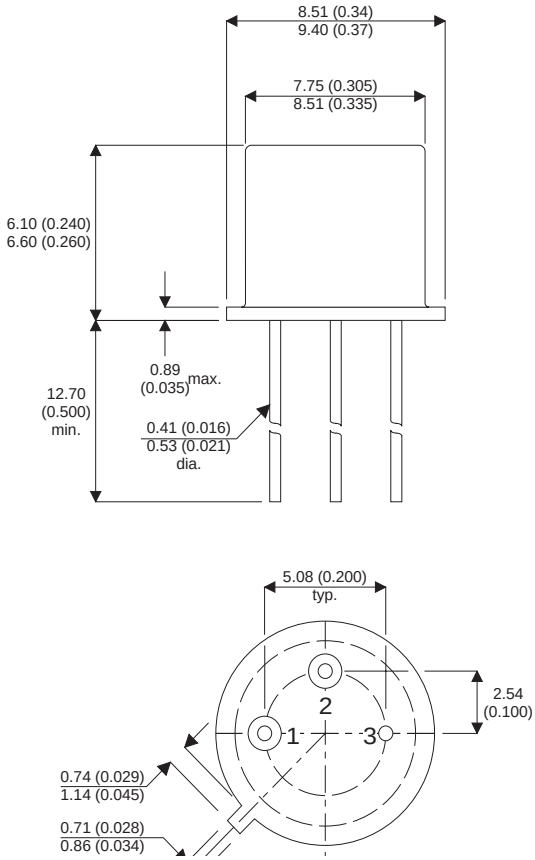
2N5784

MECHANICAL DATA

Dimensions in mm (inches)



TO–39 PACKAGE

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

SILICON EPITAXIAL NPN TRANSISTOR

FEATURES

General purpose power transistor for switching and linear applications in a hermetic TO–39 package.

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

V_{CBO}	Collector – Base Voltage		80V
$V_{CER(sus)}$	Collector – Emitter Sustaining Voltage	R_{BE} = 100Ω	80V
$V_{CEO(sus)}$	Collector – Emitter Sustaining Voltage		65V
V_{EBO}	Emitter – Base Voltage		5V
I_C	Continuous Collector Current		3.5A
I_B	Continuous Collector Current		1A
P_D	Total Device Dissipation	T_A = 25°C	10W
		Derate above 25°C	0.057W/°C
P_D	Total Device Dissipation	T_C = 25°C	1W
		Derate above 25°C	0.0057W/°C
T_J , T_{STG}	Operating Junction and Storage Temperature Range		–65 to +200°C
T_L	Lead temperature, ≥ $^1/_{32}$" (0.8mm) from seating plane for 10 s max.		230°C

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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SEME LAB

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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	mA
I_{CEX}	Collector Cut-off Current	V_{CE} = 75V	V_{BE} = -1.5V			10	µA
		R_{BE} = 100Ω	T_C = 150°C			1	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 = 1A	20		100	—
		V_{CE} = 2V	I_C = 3.2A	4			
$V_{CEO(sus)}$*	Collector – Emitter Sustaining Voltage [1]	I_C = 100mA	I_B = 0	65			V
$V_{CER(sus)}$*	Collector – Emitter Sustaining Voltage [1]	I_C = 100mA	R_{BE} = 100Ω	80			
V_{BE}	Base – Emitter Voltage	V_{CE} = 2V	I_C = 1A			1.5	V
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage [2]	I_C = 1A	I_B = 100mA			0.5	
$\lvert h_{fe} \rvert$	Small Signal Common – Emitter Current Gain	V_{CE} = -2V f = 200kHz	I_C = 100mA	5		20	—
h_{fe}	Small Signal Common – Emitter Current Gain	V_{CE} = 2V f = 1kHz	I_C = 100mA	25			—
t_{ON}	Turn-on Time	V_{CE} = 30V	I_C = 1A			5	µs
t_{OFF}	Turn-off Time	$I_{B1} = I_{B2}$ = 100mA				15	
$R_{\theta JC}$	Thermal Resistance Junction – Case					17.5	°C/W
$R_{\theta JA}$	Thermal Resistance Junction – Ambient					17.5	

NOTES

* Pulse Test: t_p = 300µs, δ = 1.8%.

1) These tests *MUST NOT* be measured on a curve tracer.
2) Measured ¼" (6.35 mm) from case. Lead resistance is critical in this test.
3) Measured at a frequency where $\lvert h_{fe} \rvert$ is decreasing at approximately 6dB per octave.

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