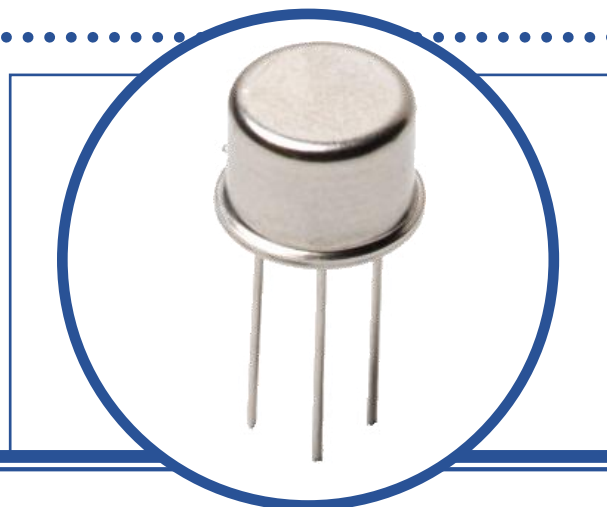


SILICON PLANAR EPITAXIAL NPN TRANSISTOR

2N5682X

- Hermetic TO-39 Metal package.
- Ideally Suited For High Power Amplifier And Switching Applications
- Screening Options Available



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

V _{CBO}	Collector – Base Voltage		120V
V _{CEO}	Collector – Emitter Voltage		120V
V _{EBO}	Emitter – Base Voltage		4V
I _C	Continuous Collector Current		1.0A
I _B	Base Current		0.5A
P _D	Total Power Dissipation at	T _C = 25°C	8W
		Derate Above 25°C	45.7mW/°C
P _D	Total Power Dissipation at	T _A = 25°C	1.0W
		Derate Above 25°C	5.7mW/°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 _{θJA}	Thermal Resistance, Junction To Ambient	175	°C/W
R _{θJC}	Thermal Resistance, Junction To Case	21.9	°C/W

Semelab Limited 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.

SILICON PLANAR EPITAXIAL NPN TRANSISTOR 2N5682X

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I_{CEV}	Collector Cut-Off Current	$V_{CE} = 120\text{V}$ $V_{BE} = -1.5\text{V}$			1.0	μA
		$T_C = 150^\circ\text{C}$			1.0	mA
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 80\text{V}$ $I_B = 0$			10.0	μA
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 120\text{V}$			1.0	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 4\text{V}$ $I_C = 0$			1.0	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 250\text{mA}$ $V_{CE} = 2\text{V}$	40		230	
		$I_C = 1.0\text{A}$ $V_{CE} = 2\text{V}$	5			
$V_{BE}^{(1)}$	Base-Emitter Voltage	$I_C = 250\text{mA}$ $V_{CE} = 2\text{V}$			1	V
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	120			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 250\text{mA}$ $I_B = 25\text{mA}$			0.6	
		$I_C = 500\text{mA}$ $I_B = 50\text{mA}$			1.0	
		$I_C = 1.0\text{A}$ $I_B = 200\text{mA}$			2.0	
$V_{BE}^{(1)}$	Base-Emitter Voltage	$I_C = 250\text{mA}$ $V_{CE} = 2\text{V}$			1.0	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 100\text{mA}$ $V_{CE} = 10\text{V}$ $f = 10\text{MHz}$	30			MHz
C_{OBO}	Output Capacitance	$V_{CB} = 20\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			50	pF
h_{fe}	Small Signal Current Gain	$V_{CE} = 1.5\text{V}$ $I_C = 0.2\text{A}$ $f = 1.0\text{KHz}$	40			

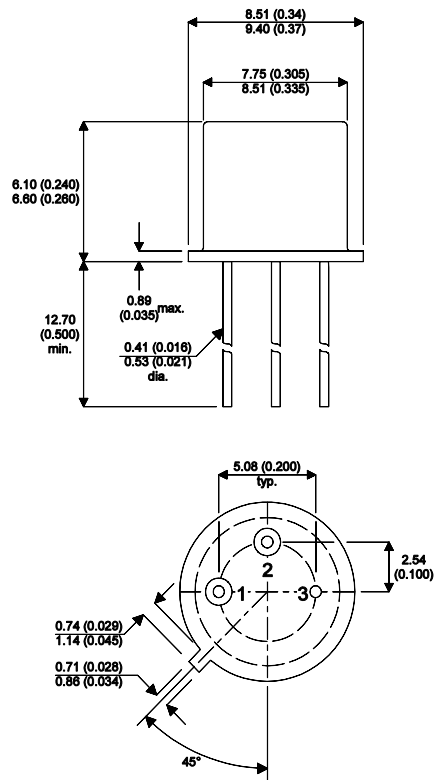
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

SILICON PLANAR EPITAXIAL NPN TRANSISTOR 2N5682X

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector