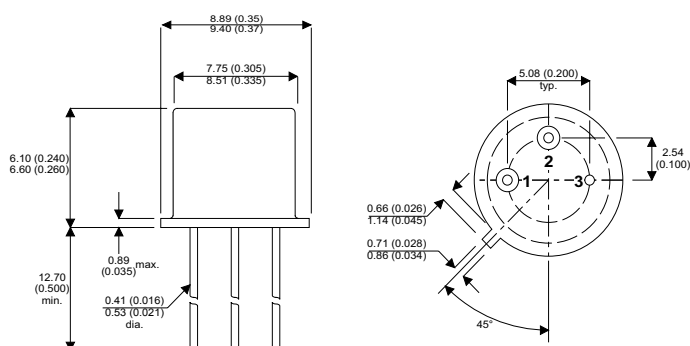


MECHANICAL DATA

Dimensions in mm (inches)



NPN SILICON TRANSISTORS

DESCRIPTION

The 2N5681 and 2N5682 are silicon epitaxial planar NPN transistors in jedec TO-39 metal case intended for use as drivers for high power transistors in general purpose, amplifier and switching circuits

The complementary PNP types are the 2N5679 and 2N5680 respectively

TO-39

Pin 1 – Emitter Pin 2 – Base Pin 3 – Collector

ABSOLUTE MAXIMUM RATINGS

$T_{CASE} = 25^{\circ}C$ unless otherwise stated

		2N5681	2N5682
V_{CBO}	Collector – Base Voltage ($I_E = 0$)	100V	120V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	100V	120V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	4V	
I_C	Continuous Collector Current	1A	
I_B	Base Current	0.5A	
P_{tot}	Total Dissipation at $T_{case} \leq 25^{\circ}C$	10W	
	$T_{amb} \leq 25^{\circ}C$	1W	
T_{stg}	Operating and Storage Temperature Range	-65 to $+200^{\circ}C$	
T_j	Junction temperature	$200^{\circ}C$	



THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	17.5	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	175	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO} Collector Cut Off Current	I _E = 0 for 2N5681 V _{CB} = 100V for 2N5682 V _{CB} = 120V			1 1	μA
I _{CEV} Collector Cut Off Current	V _{BE} = -1.5 for 2N5681 V _{CE} = 100V for 2N5682 V _{CE} = 120V			1 1	μA
	T _{case} = 150°C for 2N5681 V _{CE} = 100V for 2N5682 V _{CE} = 120V			1 1	mA
I _{CEO} Collector Cut Off Current	I _B = 0 for 2N5681 V _{CE} = 70V for 2N5682 V _{CE} = 80V			10 10	μA
I _{EBO} Emitter Cut Off Current	I _C = 0 V _{EB} = 4V			1	
V _{CEO(sus)*} Collector Emitter Sustaining Voltage	I _B = 0 I _C = -10mA for 2N5681 for 2N5682	100 120			V
V _{CE(sat)*} Collector Emitter Saturation Voltage	I _C = 250mA I _B = 25mA			0.6	
	I _C = 500mA I _B = 50mA			1	
	I _C = 1A I _B = 200mA			2	
V _{BE*} Base Emitter Voltage	I _C = 250mA V _{CE} = 2V			1	
h _{FE*} DC Current Gain	I _C = 250mA V _{CE} = 2V	40		150	
	I _C = 1A V _{CE} = 2V	5			
f _T Transistion Frequency	I _C = 100mA V _{CE} = 10V f = 10MHz	30			MHz
C _{CBO} Collector Base Capacitance	I _E = 0 V _{CB} = 20V f = 1MHz			50	pF
h _{fe} Small Signal Current Gain	I _C = 0.2A V _{CE} = 1.5V f = 1KHz	40			

* Pulse test t_p = 300μs , δ < 2%