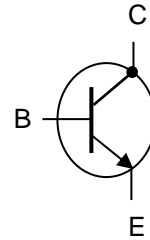


## 2N5681 – 2N5682

### NPN SWITCHING TRANSISTORS

The 2N5681 and 2N5682 are silicon epitaxial planar PNP transistors in jedec TO-39 metal case. They are intended for use as drivers for high power transistors in general purpose, amplifier and switching circuit. The complementary PNP types are the 2N5679 and 2N5680 . Compliance to RoHS.



#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value		Unit
			25681	2N5682	
$V_{CEO}$	Collector-Emitter Voltage	$I_B = 0$	100	120	V
$V_{CBO}$	Collector-Base Voltage	$I_E = 0$	100	120	V
$V_{EBO}$	Emitter-Base Voltage	$I_C = 0$	4		V
$I_C$	Collector Current		1		A
$I_B$	Base Current		500		mA
$P_D$	Total Power Dissipation	$T_{amb} = 25^\circ\text{C}$	1		W
		$T_{case} = 25^\circ\text{C}$	10		
$T_J$	Junction Temperature		200		$^\circ\text{C}$
$T_{Stg}$	Storage Temperature range		-65 to +150		

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-a}$	Thermal Resistance, Junction to ambient	175	$^\circ\text{C/W}$
$R_{thJ-c}$	Thermal Resistance, Junction to case	17.5	$^\circ\text{C/W}$

## 2N5681 – 2N5682

### ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

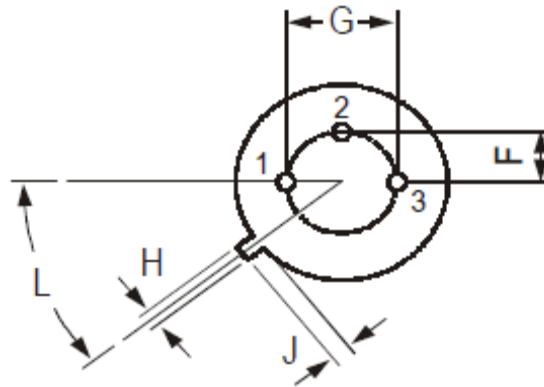
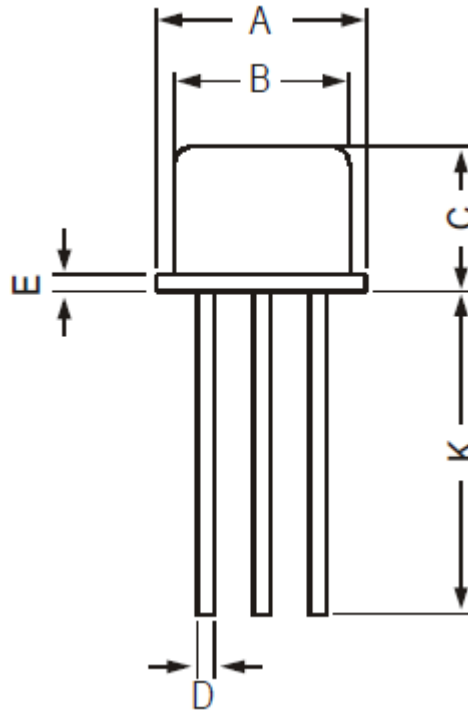
Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 100 V, I <sub>E</sub> = 0	2N5679	-	-	1	μA
		V <sub>CB</sub> = 120 V, I <sub>E</sub> = 0	2N5680				
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 70 V, I <sub>B</sub> = 0	2N5679	-	-	10	μA
		V <sub>CE</sub> = 80 V, I <sub>B</sub> = 0	2N5680				
I <sub>CEV</sub>	Collector Cutoff Current	V <sub>CE</sub> = 100 V, V <sub>BE</sub> = -1.5 V	2N5679	-	-	1	μA
		V <sub>CE</sub> = 120 V, V <sub>BE</sub> = -1.5 V	2N5680				
		V <sub>CE</sub> = 100 V, V <sub>BE</sub> = -1.5 V T <sub>C</sub> = 150°C	2N5679	-	-	1	mA
		V <sub>CE</sub> = 120 V, V <sub>BE</sub> = -1.5 V T <sub>C</sub> = 150°C	2N5680				
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>BE</sub> = 4.0 V, I <sub>C</sub> = 0	2N5679	-	-	1	μA
			2N5680				
V <sub>CEO(sus)</sub>	Collector Emitter Sustaining voltage (*)	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	2N5679	100	-	-	V
			2N5680	120	-	-	
V <sub>CE(SAT)</sub>	Collector-Emitter saturation Voltage (*)	I <sub>C</sub> = 250 mA I <sub>B</sub> = 25 mA	2N5679	-	-	0.6	V
			2N5680				
		I <sub>C</sub> = 500 mA I <sub>B</sub> = 50 mA	2N5679	-	-	1	
			2N5680				
I <sub>C</sub> = 1 A I <sub>B</sub> = 200 mA	2N5679	-	-	2			
	2N5680						
V <sub>BE</sub>	Base-Emitter Voltage (*)	I <sub>C</sub> = 250 mA, V <sub>CE</sub> = 2 V	2N5679	-	-	1	V
			2N5680				
h <sub>FE</sub>	DC Current Gain (*)	I <sub>C</sub> = 250 mA, V <sub>CE</sub> = 2 V	2N5679	40	-	150	V
			2N5680				
		I <sub>C</sub> = 1 A, V <sub>CE</sub> = 2 V	2N5679	5	-	-	
			2N5680				
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 10 V f = 10 MHz	2N5679	30	-	-	MHz
			2N5680				
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0, V <sub>CB</sub> = 20 V f = 1MHz	2N5679	-	-	50	pF
			2N5680				
h <sub>fe</sub>	Small Signal Current Gain	I <sub>C</sub> = 200 mA, V <sub>CE</sub> = 1.5 V f = 1 kHz	2N5679	40	-	-	-
			2N5680				

(\*) Pulse Width ≈ 300 μs, Duty Cycle < 2.0%

## 2N5681 – 2N5682

### MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°



Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector

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