

**SILICON PNP TRANSISTOR**

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

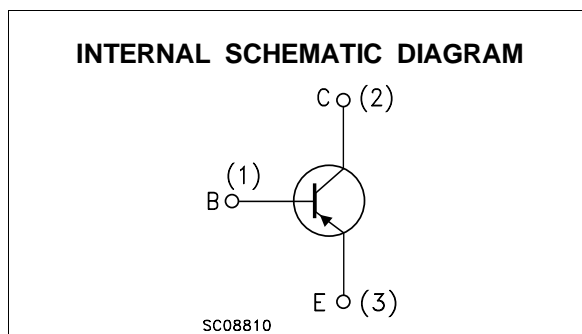
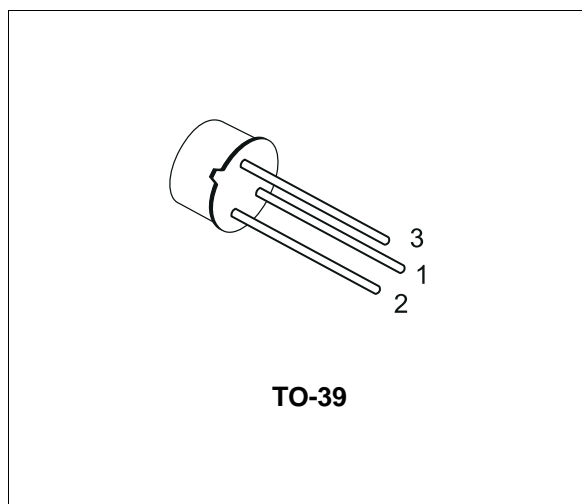
**APPLICATIONS**

- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIERS

**DESCRIPTION**

The 2N5680 is high voltage silicon epitaxial planar PNP transistors in Jedec TO-39 metal case intended for use as drivers for high power transistors in general purpose, amplifier and switching circuit.

The 2N5680 complementary NPN type is the 2N5682.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	-120	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	-120	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	-4	V
$I_C$	Collector Current	-1	A
$I_B$	Base Current	-0.5	A
$P_{tot}$	Total Dissipation at $T_c \leq 25\text{ }^\circ\text{C}$	10	W
$P_{tot}$	Total Dissipation at $T_{amb} \leq 50\text{ }^\circ\text{C}$	1	W
$T_{stg}$	Storage Temperature	-65 to 200	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	200	$^\circ\text{C}$

## THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	17.5	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	175	$^{\circ}C/W$

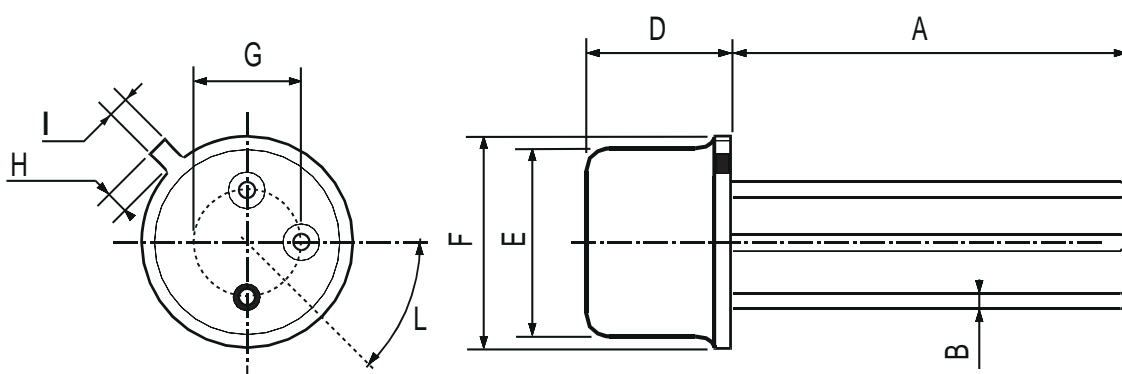
ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEV}$	Collector Cut-off Current ( $V_{BE} = -1.5V$ )	for <b>2N5679</b> $V_{CE} = -100 V$ for <b>2N5680</b> $V_{CE} = -120 V$ $T_c = 150^{\circ}C$ for <b>2N5679</b> $V_{CE} = -100 V$ for <b>2N5680</b> $V_{CE} = -120 V$			-1 -1 -1 -1	$\mu A$ $\mu A$ $\mu A$ $\mu A$
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	for <b>2N5679</b> $V_{CB} = -100 V$ for <b>2N5680</b> $V_{CB} = -120 V$			-1 -1	$\mu A$ $\mu A$
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	for <b>2N5679</b> $V_{CB} = -70 V$ for <b>2N5680</b> $V_{CB} = -80 V$			-10 -10	$\mu A$ $\mu A$
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = -4 V$			-1	$\mu A$
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = -10 mA$ for <b>2N5679</b> for <b>2N5680</b>	-100 -120			V V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = -250 mA$ $I_B = -25 mA$ $I_C = -500 mA$ $I_B = -50 mA$ $I_C = -1 A$ $I_B = -200 mA$			-0.6 -1 -2	V V V
$V_{BE*}$	Base-Emitter Voltage	$I_C = -250 mA$ $V_{CE} = -2 V$			-1	V
$h_{FE*}$	DC Current Gain	$I_C = -250 mA$ $V_{CE} = -2 V$ $I_C = -1 A$ $V_{CE} = -2 V$	40 5		150	
$h_{fe}$	Small Signal Current Gain	$I_C = -0.2 A$ $V_{CE} = -1.5 V$ $f = 1KHz$	40			
$f_T$	Transition frequency	$I_C = -100 mA$ $V_{CE} = -10 V$ $f = 10MHz$	30			MHz
$C_{CBO}$	Collector Base Capacitance	$I_E = 0$ $V_{CB} = -20 V$ $f = 1MHz$			50	pF

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle 1.5 %

## TO-39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



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