

## SILICON PNP SWITCHING TRANSISTORS

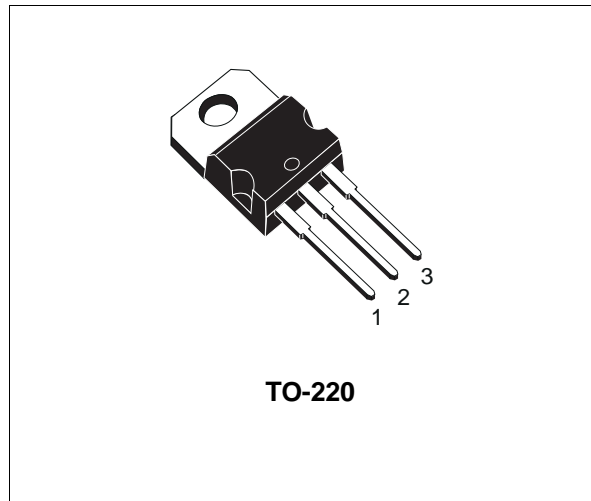
- SGS-THOMSON PREFERRED SALESTYPES
- PNP TRANSISTORS

### APPLICATIONS:

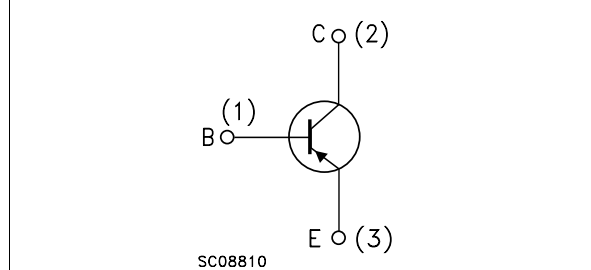
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

### DESCRIPTION

The 2N6107 and 2N6111 are epitaxial-base PNP silicon transistors in Jedec TO-220 plastic package. They are intended for a wide variety of medium power switching and linear applications.



### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		2N6107	2N6111	
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	80	40	V
$V_{CEX}$	Collector-Emitter Voltage ( $R_{BE} = 100 \Omega$ )	80	40	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	70	30	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	5		V
$I_C$	Collector Current	7		A
$I_B$	Base Current	3		A
$P_{tot}$	Total Dissipation at $T_c = 25^\circ C$	40		W
$T_{stg}$	Storage Temperature	-65 to 150		$^\circ C$
$T_j$	Max. Operating Junction Temperature	150		$^\circ C$

For PNP devices voltage and current values are negative

## 2N6107/2N6111

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	3.12	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	70	°C/W

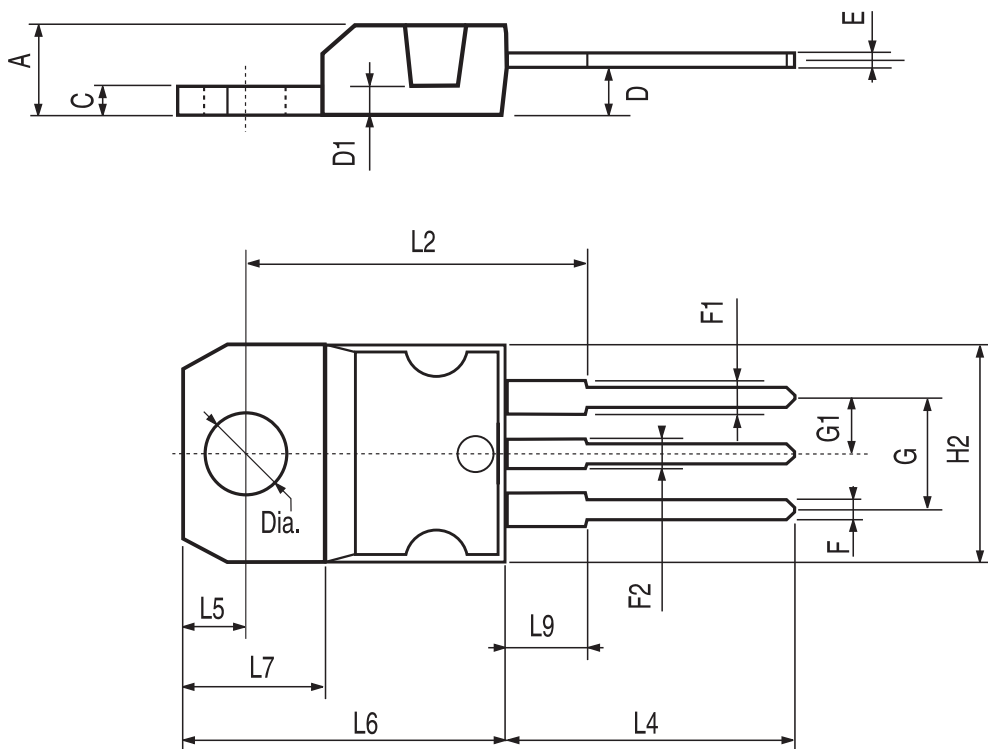
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CEX</sub>	Collector Cut-off Current (V <sub>BE</sub> = - 1.5V)	for <b>2N6107</b> V <sub>CE</sub> = 80 V			0.1	mA
		for <b>2N6111</b> V <sub>CE</sub> = 40 V			0.1	mA
		for <b>2N6107</b> V <sub>CE</sub> = 70 V			2	mA
		for <b>2N6111</b> V <sub>CE</sub> = 30 V			2	mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	for <b>2N6107</b> V <sub>CE</sub> = 60 V			1	mA
		for <b>2N6111</b> V <sub>CE</sub> = 20 V			1	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			1	mA
V <sub>CEO(sus)*</sub>	Collector-emitter Sustaining Voltage	I <sub>C</sub> = 0.1 A for <b>2N6107</b> for <b>2N6111</b>	70 30			V V
V <sub>CER(sus)*</sub>	Collector-emitter Sustaining Voltage	I <sub>C</sub> = 0.1 A R <sub>BE</sub> = 100 Ω for <b>2N6107</b> for <b>2N6111</b>	80 40			V V
V <sub>CE(sat)*</sub>	Collector-emitter Saturation Voltage	I <sub>C</sub> = 3 A I <sub>B</sub> = 0.3 A for <b>2N6107</b>			1	V
		I <sub>C</sub> = 2 A I <sub>B</sub> = 0.2 A for <b>2N6111</b>			1	V
		I <sub>C</sub> = 7 A I <sub>B</sub> = 3.0 A			3.5	V
V <sub>BE(on)*</sub>	Base-emitter Voltage	I <sub>C</sub> = 3 A V <sub>CE</sub> = 4 V for <b>2N6107</b>			1.5	V
		I <sub>C</sub> = 2 A V <sub>CE</sub> = 4 V for <b>2N6111</b>			1.5	V
		I <sub>C</sub> = 7 A V <sub>CE</sub> = 4 V			3	V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 3 A V <sub>CE</sub> = 4 V for <b>2N6107</b>	30		150	
		I <sub>C</sub> = 2 A V <sub>CE</sub> = 4 V for <b>2N6111</b>	30		150	
		I <sub>C</sub> = 7 A V <sub>CE</sub> = 4 V	2.3			
h <sub>fe</sub>	Small Signal Current Gain	I <sub>C</sub> = 0.5 A V <sub>CE</sub> = 4 V f = 50 KHz	20			
f <sub>T</sub>	Transition-Frequency	I <sub>C</sub> = 0.5 A V <sub>CE</sub> = 4 V	4			MHz
C <sub>cbo</sub>	Collector-base Capacitance	V <sub>CB</sub> = 10 V f = 1 MHz			250	pF

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %.  
For PNP types voltage and current values are negative.  
For characteristic curves see the bd534 (PNP) series.

## TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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