

## COMPLEMENTARY SILICON HIGH POWER TRANSISTORS

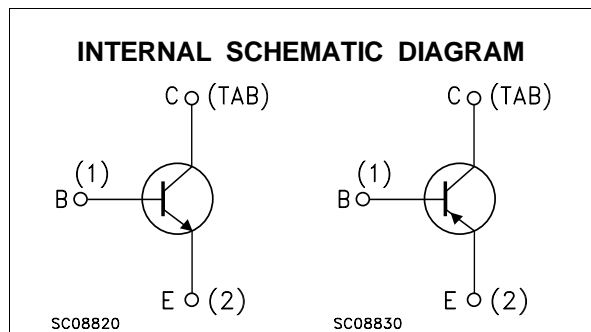
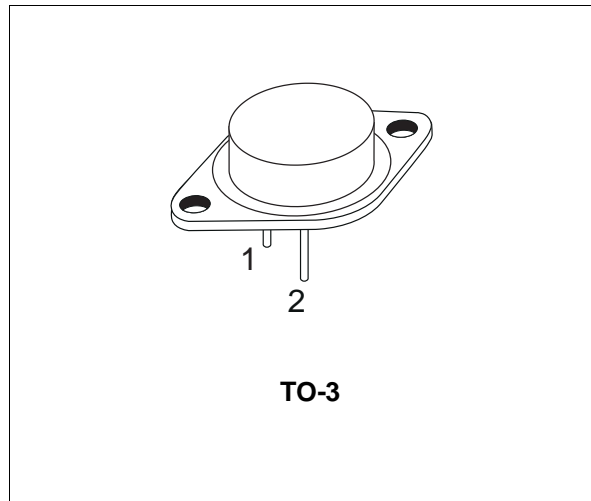
- SGS-THOMSON PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES
- HIGH CURRENT CAPABILITY

### APPLICATIONS

- GENERAL PURPOSE SWITCHING AND AMPLIFIER
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

### DESCRIPTION

The 2N5884 and 2N5886 are complementary silicon power transistor in Jedec TO-3 metal case intended for use in power linear amplifiers and switching applications.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		PNP	2N5884	
		NPN	2N5886	
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )		80	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )		80	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )		5	V
$I_C$	Collector Current		25	A
$I_{CM}$	Collector Peak Current		50	A
$I_B$	Base Current		7.5	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ\text{C}$		200	W
$T_{stg}$	Storage Temperature		-65 to 200	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature		200	$^\circ\text{C}$

For PNP types voltage and current values are negative.

## THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	0.875	°C/W
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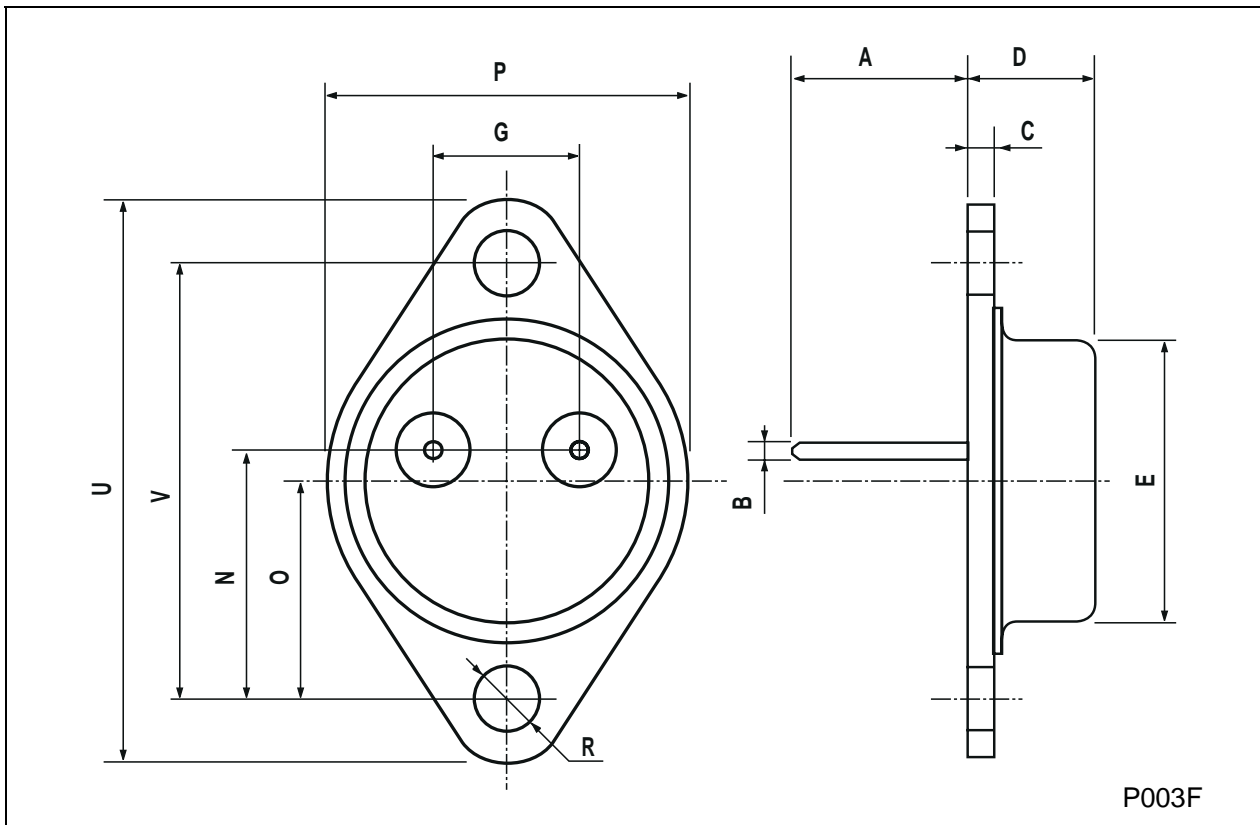
ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CEV</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = rated V <sub>CEO</sub> V <sub>CE</sub> = rated V <sub>CEO</sub> T <sub>C</sub> = 150 °C			1 10	mA mA
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CE</sub> = rated V <sub>CBO</sub>			1	mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 40 V			2	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> = 200 mA	80			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 15 A I <sub>B</sub> = 1.5 A I <sub>C</sub> = 25 A I <sub>B</sub> = 6.25 A			1 4	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 25 A I <sub>B</sub> = 6.25 A			2.5	V
V <sub>BE*</sub>	Base-Emitter Voltage	I <sub>C</sub> = 10 A V <sub>CE</sub> = 4 V			1.5	V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 3 A V <sub>CE</sub> = 4 V I <sub>C</sub> = 10 A V <sub>CE</sub> = 4 V I <sub>C</sub> = 25 A V <sub>CE</sub> = 4 V	35 20 4		100	
h <sub>fe</sub>	Small Signal Current Gain	I <sub>C</sub> = 3 A V <sub>CE</sub> = 4 V f = 1KHz	20			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = 1 A V <sub>CE</sub> = 10 V f = 1 MHz	4			MHz
C <sub>CBO</sub>	Collector Base Capacitance	I <sub>E</sub> = 0 V <sub>CB</sub> = 10 V f = 1MHz for <b>NPN type</b> for <b>PNP type</b>			500 1000	pF pF
t <sub>r</sub>	Rise Time	I <sub>C</sub> = 10 A V <sub>CC</sub> = 30 V			0.7	μs
t <sub>s</sub>	Storage Time	I <sub>B1</sub> = -I <sub>B2</sub> = 1A			1	μs
t <sub>f</sub>	Fall Time				0.8	μs

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

## TO-3 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



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