

COMPLEMENTARY SILICON HIGH POWER TRANSISTORS

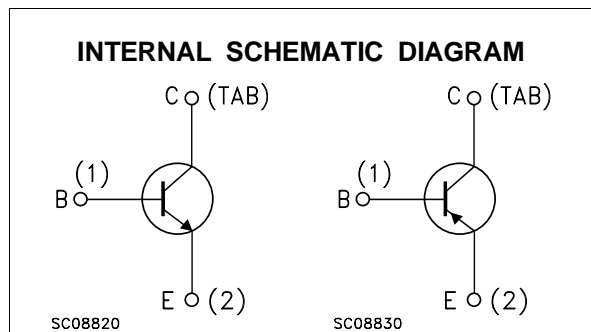
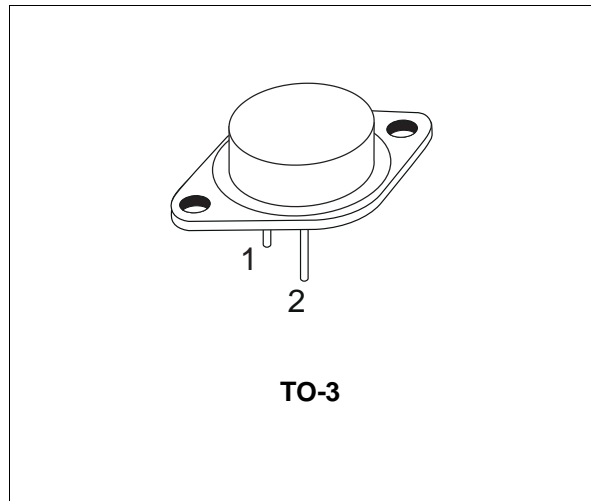
- SGS-THOMSON PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES
- HIGH CURRENT CAPABILITY

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

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.875	$^{\circ}\text{C}/\text{W}$
----------------	----------------------------------	-----	-------	-----------------------------

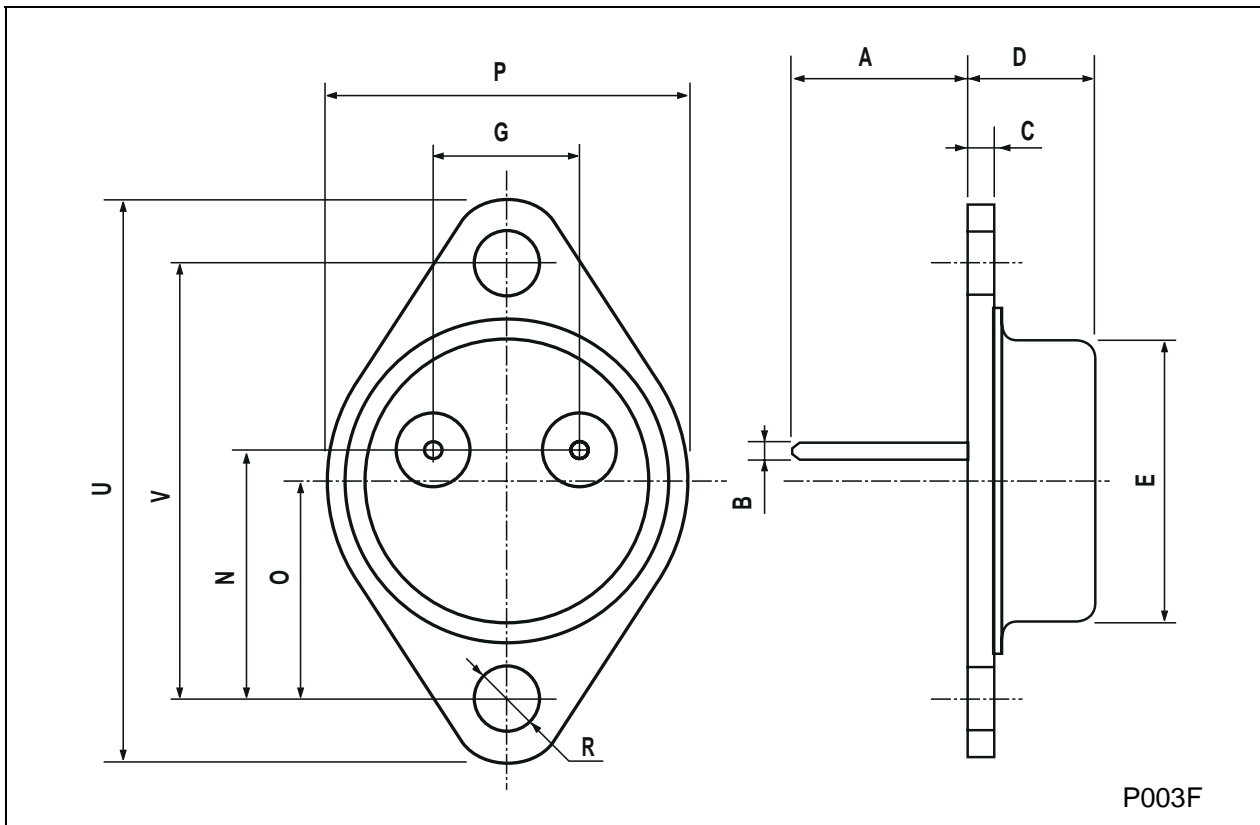
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEV}	Collector Cut-off Current ($V_{BE} = -1.5\text{V}$)	$V_{CE} = \text{rated } V_{CE0}$ $V_{CE} = \text{rated } V_{CE0} \quad T_c = 150^{\circ}\text{C}$			1 10	mA mA
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CE} = \text{rated } V_{CBO}$			1	mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 40\text{ V}$			2	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 200\text{ mA}$	80			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 15\text{ A} \quad I_B = 1.5\text{ A}$ $I_C = 25\text{ A} \quad I_B = 6.25\text{ A}$			1 4	V V
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 25\text{ A} \quad I_B = 6.25\text{ A}$			2.5	V
V_{BE*}	Base-Emitter Voltage	$I_C = 10\text{ A} \quad V_{CE} = 4\text{ V}$			1.5	V
h_{FE*}	DC Current Gain	$I_C = 3\text{ A} \quad V_{CE} = 4\text{ V}$ $I_C = 10\text{ A} \quad V_{CE} = 4\text{ V}$ $I_C = 25\text{ A} \quad V_{CE} = 4\text{ V}$	35 20 4		100	
h_{fe}	Small Signal Current Gain	$I_C = 3\text{ A} \quad V_{CE} = 4\text{ V} \quad f = 1\text{KHz}$	20			
f_T	Transition frequency	$I_C = 1\text{ A} \quad V_{CE} = 10\text{ V} \quad f = 1\text{ MHz}$	4			MHz
C_{CBO}	Collector Base Capacitance	$I_E = 0 \quad V_{CB} = 10\text{ V} \quad f = 1\text{MHz}$ for NPN type for PNP type			500 1000	pF pF
t_r	Rise Time	$I_C = 10\text{ A} \quad V_{CC} = 30\text{ V}$			0.7	μs
t_s	Storage Time	$I_{B1} = -I_{B2} = 1\text{A}$			1	μs
t_f	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



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A
...