

COMPLEMENTARY SILICON HIGH POWER TRANSISTORS

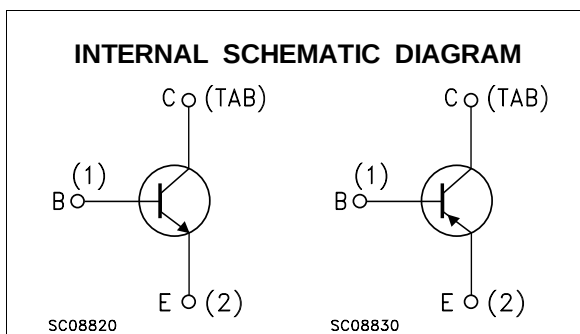
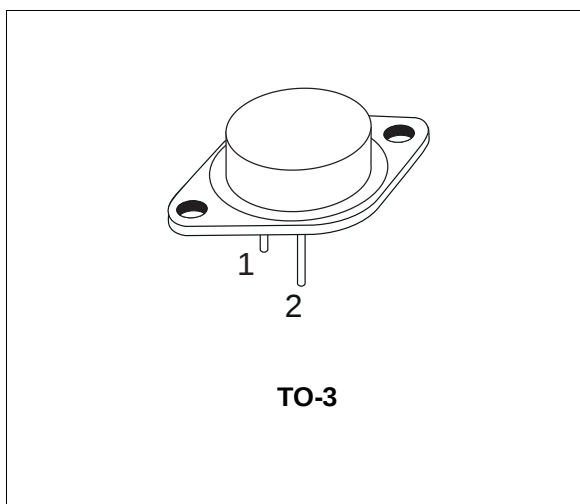
- SGS-THOMSON PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES
- HIGH CURRENT CAPABILITY

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	°C/W
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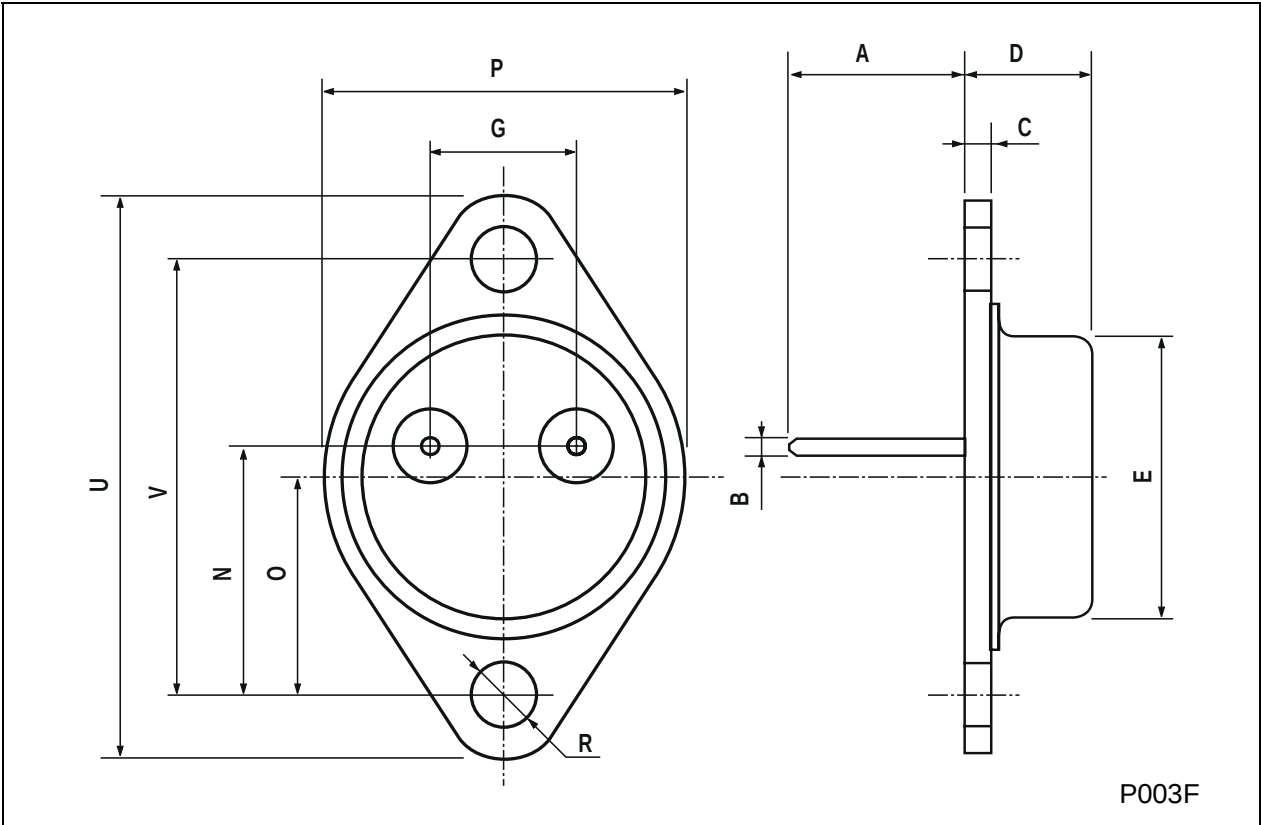
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEV}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = rated V _{CEO} V _{CE} = rated V _{CEO} T _C = 150 °C			1 10	mA mA
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CE} = rated V _{CBO}			1	mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 40 V			2	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage	I _C = 200 mA	80			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 15 A I _B = 1.5 A I _C = 25 A I _B = 6.25 A			1 4	V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = 25 A I _B = 6.25 A			2.5	V
V _{BE} *	Base-Emitter Voltage	I _C = 10 A V _{CE} = 4 V			1.5	V
h _{FE} *	DC Current Gain	I _C = 3 A V _{CE} = 4 V I _C = 10 A V _{CE} = 4 V I _C = 25 A V _{CE} = 4 V	35 20 4		100	
h _{fe}	Small Signal Current Gain	I _C = 3 A V _{CE} = 4 V f = 1KHz	20			
f _T	Transition frequency	I _C = 1 A V _{CE} = 10 V f = 1 MHz	4			MHz
C _{CBO}	Collector Base Capacitance	I _E = 0 V _{CB} = 10 V f = 1MHz for NPN type for PNP type			500 1000	pF pF
t _r	Rise Time	I _C = 10 A V _{CC} = 30 V			0.7	μs
t _s	Storage Time	I _{B1} = -I _{B2} = 1A			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



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