

HIGH CURRENT SILICON NPN POWER TRANSISTOR

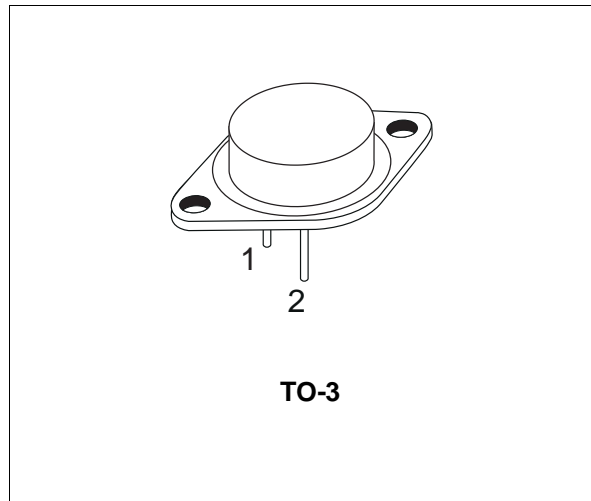
- STMicroelectronics PREFERRED SALESTYPE
- HIGH CURRENT CAPABILITY

APPLICATIONS

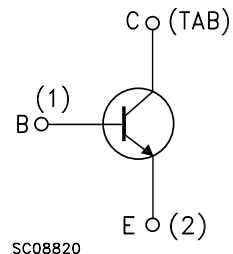
- GENERAL PURPOSE SWITCHING AND AMPLIFIER
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The 2N5886 is a silicon Epitaxial-Base NPN power transistor mounted in Jedec TO-3 metal case. It is intended for use in power linear amplifiers and switching applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
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	$^\circ\text{C}$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	0.875	°C/W
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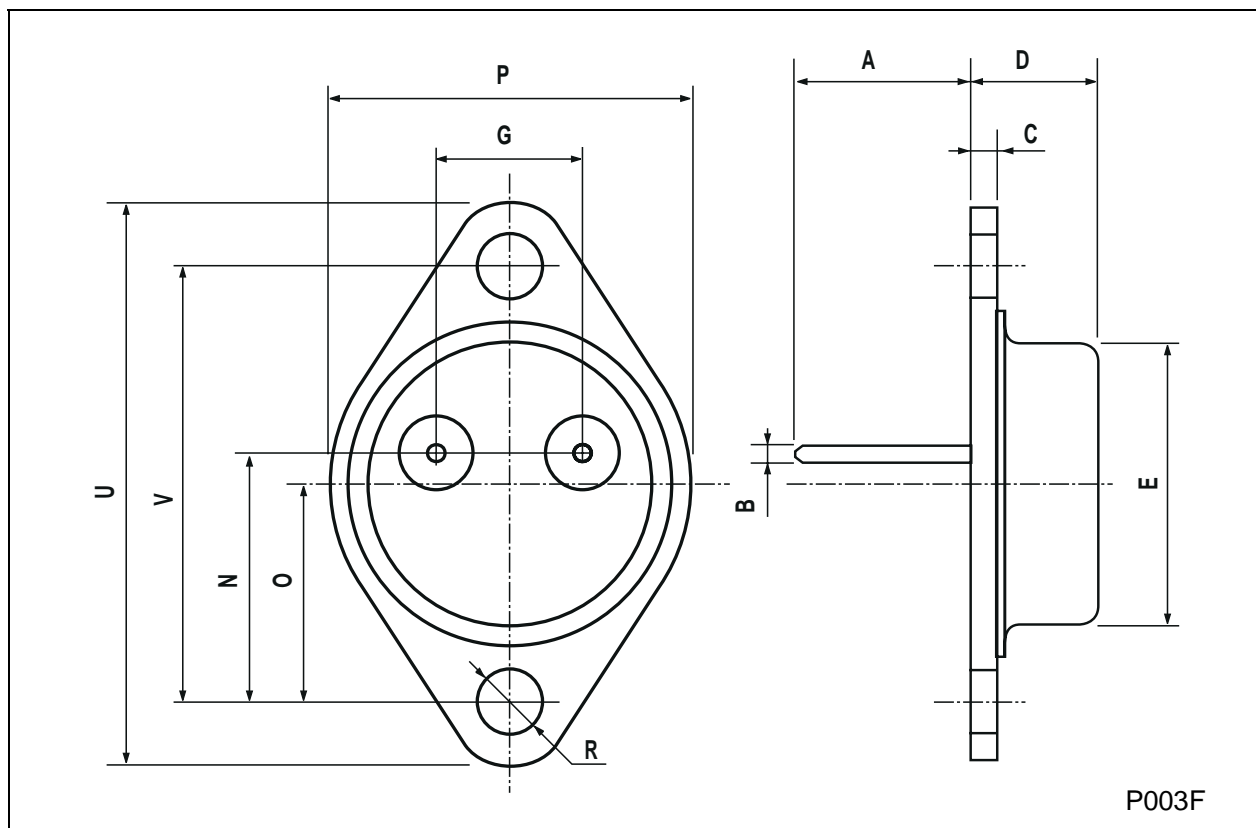
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEV}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = 80 V V _{CE} = 80 V T _c = 150 °C			1 10	mA mA
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 80 V			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 _B = 0)	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			500	pF
t _r t _s t _f	RESISTIVE LOAD Rise Time Storage Time Fall Time	I _C = 10 A V _{CC} = 30 V I _{B1} = -I _{B2} = 1A			0.7 1 0.8	μs μs 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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