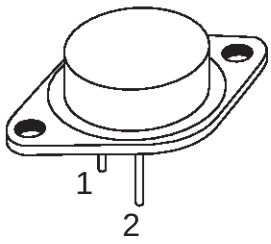
2N5886

HIGH CURRENT SILICON NPN POWER TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- HIGH CURRENT CAPABILITY

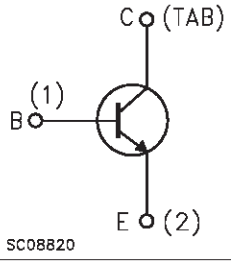
APPLICATIONS
- GENERAL PURPOSE SWITCHING AND AMPLIFIER
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

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



TO-3

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 $T_c \leq 25\ ^oC$	200	W
T_{stg}	Storage Temperature	-65 to 200	^oC
T_j	Max. Operating Junction Temperature	200	^oC

THERMAL DATA

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

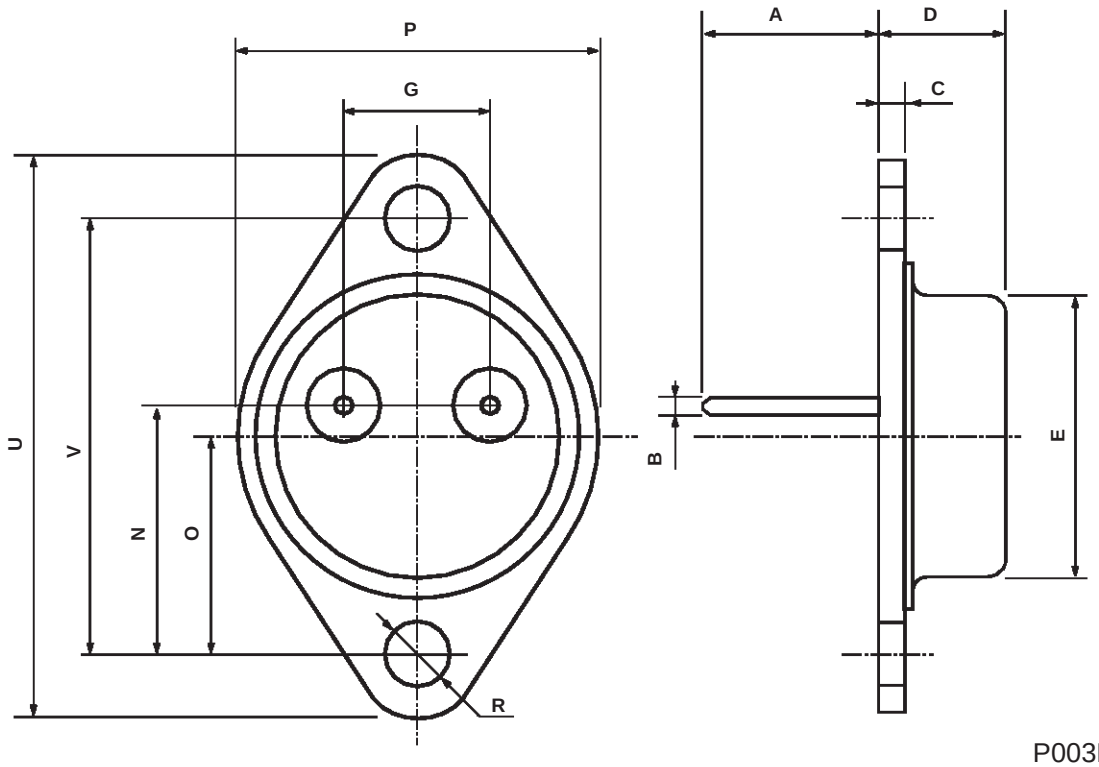
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

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 ^oC			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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