

## HIGH CURRENT SILICON NPN POWER TRANSISTOR

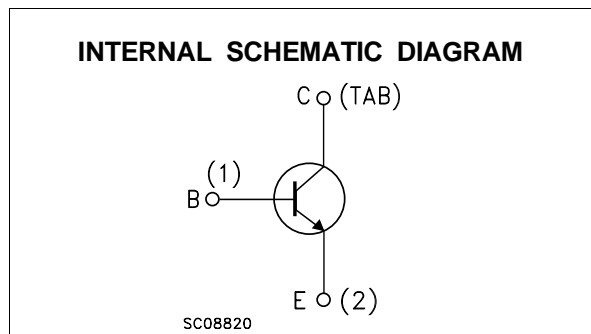
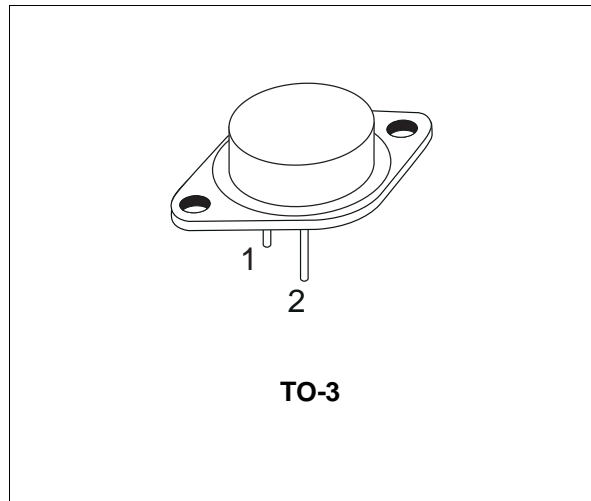
- STMicroelectronics PREFERRED SALESTYPE
- HIGH CURRENT CAPABILITY

### 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.



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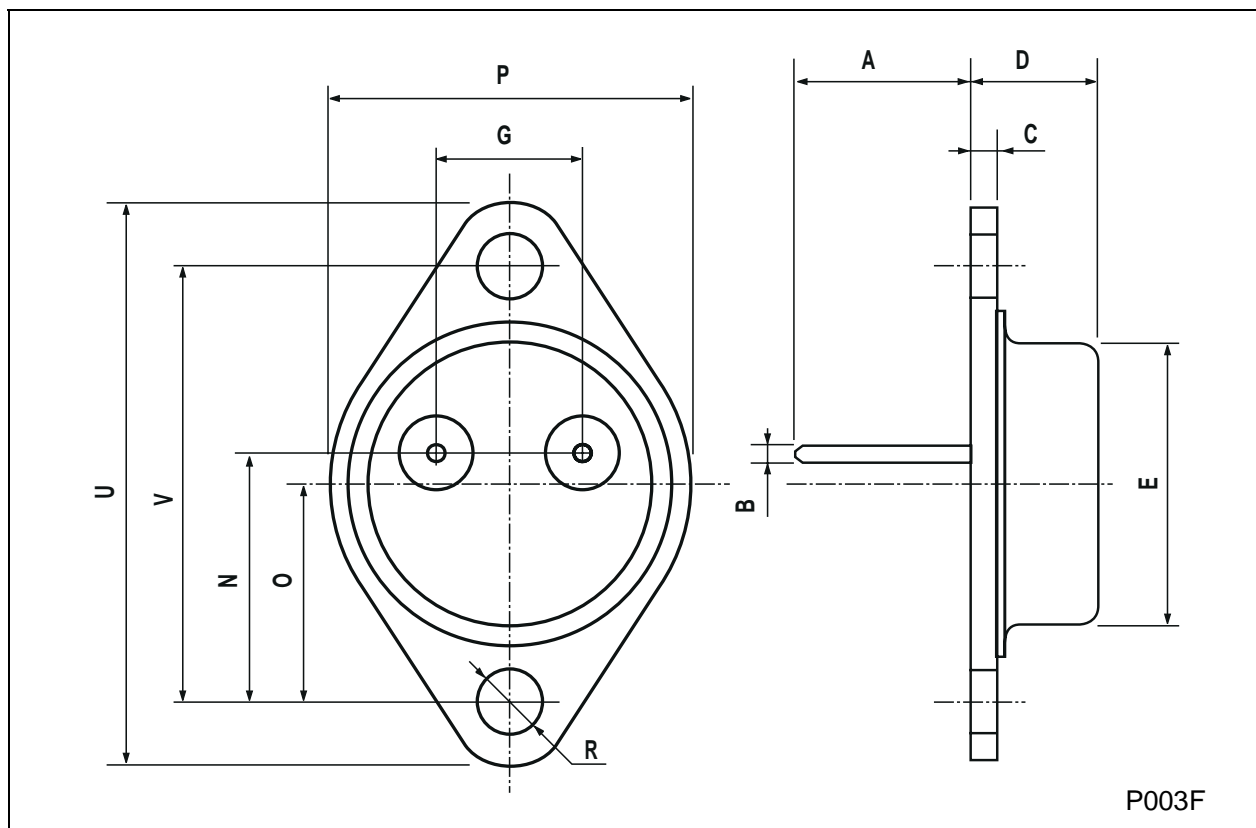
ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEV}$	Collector Cut-off Current ( $V_{BE} = -1.5V$ )	$V_{CE} = 80 V$ $V_{CE} = 80 V$ $T_c = 150^{\circ}C$			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	$\mu s$ $\mu s$ $\mu s$

\* Pulsed: Pulse duration = 300  $\mu s$ , 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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