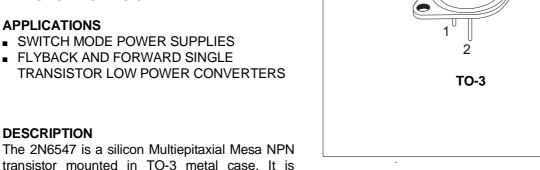


# HIGH POWER NPN SILICON TRANSISTOR

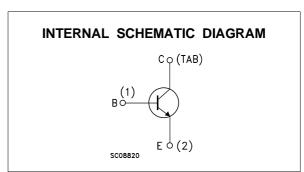
- STMicroelectronics PREFERRED **SALESTYPE**
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

#### **APPLICATIONS**



#### **DESCRIPTION**

transistor mounted in TO-3 metal case. It is particulary intended for switching and industrial applications from single and tree-phase mains.



#### **ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CER}$	Collector-Emitter Voltage ( $R_{BE} = 50 \Omega$ )	850	V
V <sub>CES</sub> Collector-Emitter Voltage (V <sub>BE</sub> = 0)		850	V
Vceo	Collector-Emitter Voltage (I <sub>B</sub> = 0)	400	V
V <sub>EBO</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)	9	V
Ic	Collector Current	15	Α
I <sub>CM</sub>	Collector Peak Current	30	Α
I <sub>B</sub>	Base Current	4	А
I <sub>BM</sub>	Base Peak Current	20	Α
P <sub>tot</sub>	Total Dissipation at T <sub>c</sub> = 25 °C	175	W
T <sub>stg</sub>	Storage Temperature	-65 to200	°C
Tj	Max. Operating Junction Temperature	200	°C

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### THERMAL DATA

# **ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = 850 V V <sub>CE</sub> = 850 V T <sub>c</sub> = 100 °C			1 4	mA mA
I <sub>CER</sub>	Collector Cut-off Current $(R_{BE} = 10 \Omega)$	$V_{CE} = 850 \text{ V}$ $T_{c} = 100  ^{\circ}\text{C}$			5	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 9 V			1	mA
V <sub>CEO(sus)</sub> *	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 100 mA	400			<b>V</b>
V <sub>CE(sat)</sub> *	Collector-Emitter Saturation Voltage				1.5 5 2.5	V V V
V <sub>BE(sat)</sub> *	Base-Emitter Saturation Voltage	I <sub>C</sub> = 10 A I <sub>B</sub> = 2 A I <sub>C</sub> = 100 °C			1.6 1.6	V V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 5 A	12 6		30	
f <sub>T</sub> *	Transition Frequency	I <sub>C</sub> = 0.5 A V <sub>CE</sub> = 10 V f = 1 MHz	6		24	MHz
Ссво	Collector-Base Capacitance (I <sub>E</sub> = 0)	V <sub>CB</sub> = 10 V f = 1 MHz			360	pF

<sup>\*</sup> Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %

### RESISTIVE LOAD SWITCHING TIMES

Symbol	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
ton	Turn-on Time	V <sub>CC</sub> = 250 V	$I_{C} = 10 \text{ A}$			1	μs
ts	Storage Time	$I_{B1} = -I_{B2} = 2 A$	$T_p \ge 25 \ \mu s$			4	μs
t <sub>f</sub>	Fall Time					0.7	μs

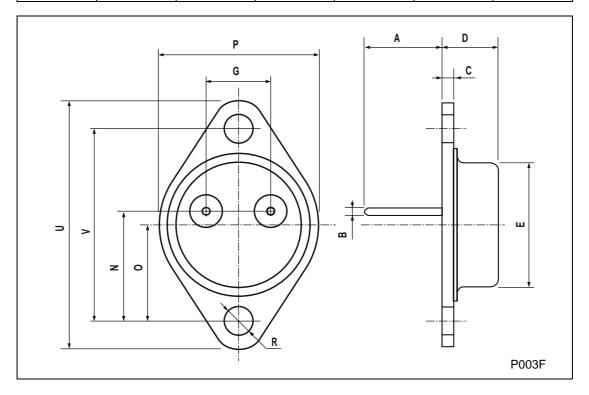
### INDUCTIVE LOAD SWITCHING TIMES

Symbol	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
t <sub>s</sub> t <sub>f</sub>	Storage Time Fall Time	$V_{CL} = 450 \text{ V}$ $L_{C} = 180 \mu\text{H}$ $V_{BE} = -5 \text{ V}$	$I_{C} = 10 \text{ A}$ $I_{B1} = 2 \text{ A}$ $T_{c} = 100  ^{\circ}\text{C}$			5 1.5	μs μs

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## **TO-3 MECHANICAL DATA**

DIM.	mm			inch			
<b>5</b>	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	11.00		13.10	0.433		0.516	
В	0.97		1.15	0.038		0.045	
С	1.50		1.65	0.059		0.065	
D	8.32		8.92	0.327		0.351	
Е	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	
Р	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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