

## HIGH CURRENT NPN SILICON TRANSISTOR

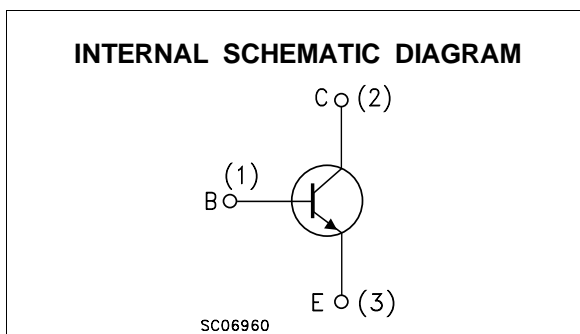
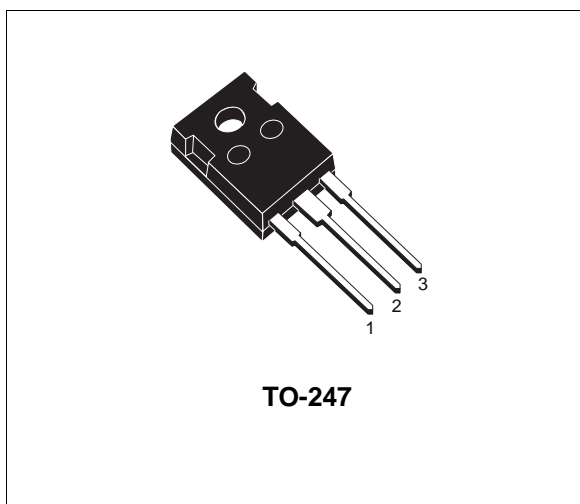
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

### APPLICATIONS:

- MOTOR CONTROL
- HIGH FREQUENCY AND EFFICIENCY CONVERTERS

### DESCRIPTION

High current, high speed transistor suited for power conversion applications, high efficiency converters and motor controls.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CES}$	Collector-Emitter Voltage ( $V_{BE} = 0$ )	500	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	250	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	7	V
$I_E$	Emitter-Current	60	A
$I_{EM}$	Emitter Peak Current ( $t_p < 5\text{ms}$ )	70	A
$I_B$	Base Current	15	A
$I_{BM}$	Base Peak Current ( $t_p < 5\text{ms}$ )	18	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ\text{C}$	180	W
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$

For PNP type voltage and current values are negative.

## BUTW92

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	MAX	0.7	°C/W
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### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = 450 V V <sub>CE</sub> = 450 V T <sub>C</sub> = 100°C			50 1	μA mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			50	μA
V <sub>CES</sub>	Collector-Emitter Breakdown Voltage (V <sub>EB</sub> = 0)	I <sub>C</sub> = 5 mA	500			V
V <sub>EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 50 mA	7			V
V <sub>CEO(sus)</sub> *	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 200 mA	250			V
V <sub>CE(sat)</sub> *	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A T <sub>C</sub> = 100°C		0.8 1.1	1 1.5	V V
V <sub>BE(sat)</sub> *	Base-Emitter Saturation Voltage	I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A T <sub>C</sub> = 100°C			1.9 2	V V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 60 A V <sub>CE</sub> = 3 V I <sub>C</sub> = 60 A V <sub>CE</sub> = 3 V T <sub>C</sub> = 100°C I <sub>C</sub> = 5 A V <sub>CE</sub> = 3 V	9 6		65	
t <sub>s</sub> t <sub>f</sub>	RESISTIVE LOAD Storage Time Fall Time	I <sub>C</sub> = 50 A V <sub>CC</sub> = 250 V I <sub>B1</sub> = -I <sub>B2</sub> = 10 A		1.2 250	1.4 300	μs ns

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %



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