



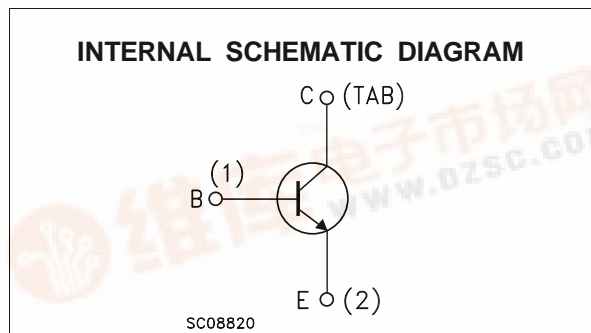
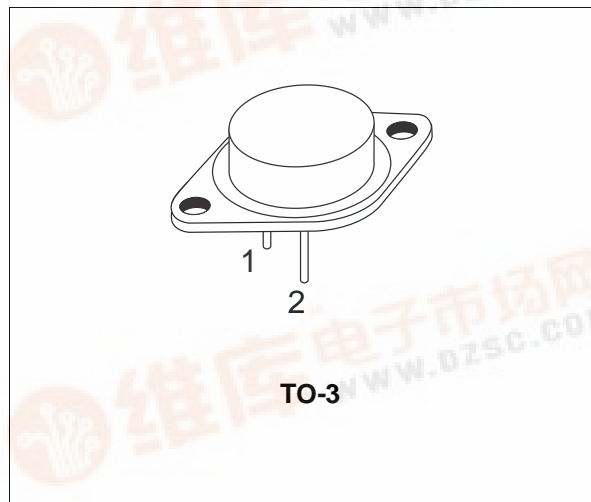
**BUR51**

## HIGH CURRENT NPN SILICON TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

### DESCRIPTION

The BUR51 is a silicon multiepitaxial planar NPN transistor in modified Jedec TO-3 metal case, intended for use in switching and linear applications in military and industrial equipment.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	300	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	200	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	10	V
$I_C$	Collector Current	60	A
$I_{CM}$	Collector Peak Current ( $t_p = 10$ ms)	80	A
$I_B$	Base Current	16	A
$P_{tot}$	Total Dissipation at $T_c \leq 25$ °C	350	W
$T_{stg}$	Storage Temperature	-65 to 200	°C
$T_j$	Max. Operating Junction Temperature	200	°C

## BUR51

### THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.5	$^{\circ}C/W$
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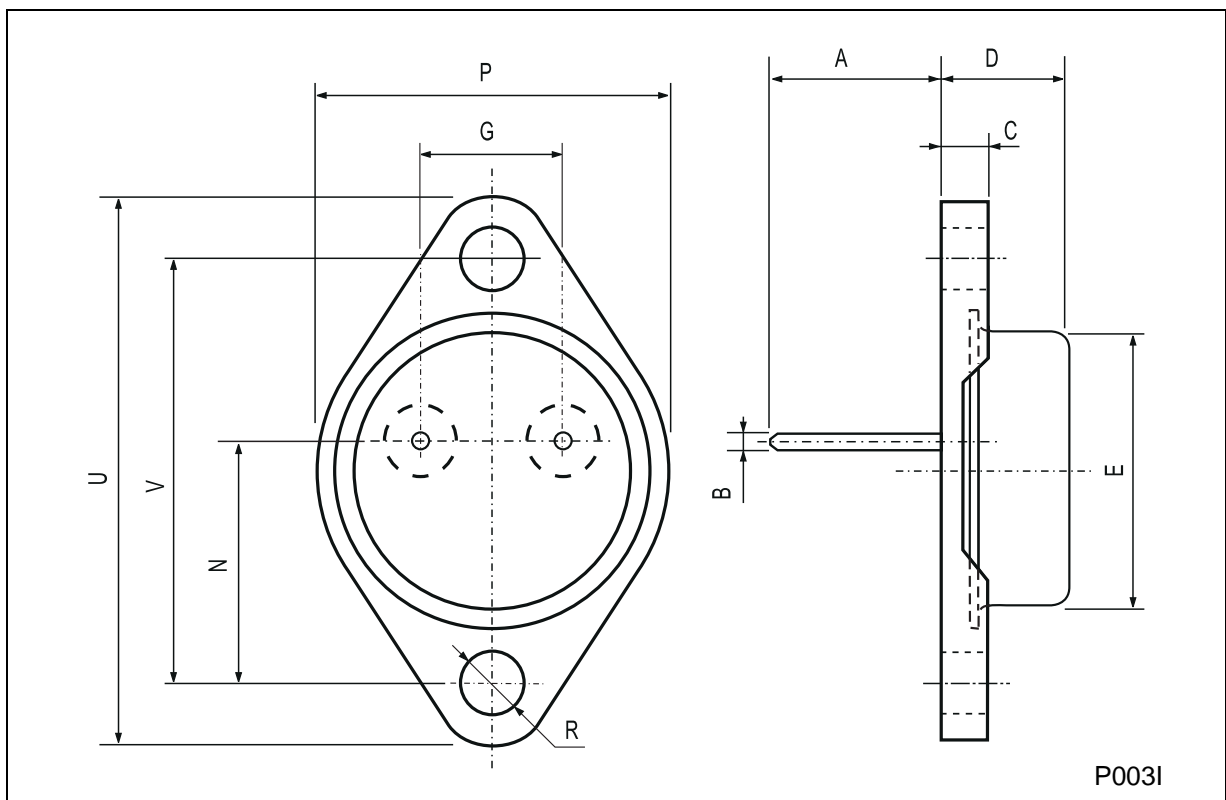
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = 300 V$ $V_{CB} = 300 V$ $T_{case} = 125^{\circ}C$			0.2 2	mA mA
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = 200 V$			1	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 7 V$			0.2	$\mu A$
$V_{CE(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 200 mA$	200			V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	$I_E = 10 mA$	10			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 30 A$ $I_B = 2 A$ $I_C = 50 A$ $I_B = 5 A$		0.9	1 1.5	V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 30 A$ $I_B = 2 A$ $I_C = 50 A$ $I_B = 5 A$		1.55	1.8 2	V V
$h_{FE}^*$	DC Current Gain	$I_C = 5 A$ $V_{CE} = 4 V$ $I_C = 50 A$ $V_{CE} = 4 V$	20 15		100	
$I_{s/b}$	Second Breakdown Collector Current	$V_{CE} = 20 V$ $t = 1 s$	17.5			A
$f_T$	Transition-Frequency	$I_C = 1 A$ $V_{CE} = 5 V$ $f = 1 MHz$	10	16		MHz
$t_{on}$	Turn-on Time	$I_C = 50 A$ $I_{B1} = 5 A$ $V_{CC} = 100 V$		0.35	1	$\mu s$
$t_s$	Storage Time	$I_C = 50 A$ $I_{B1} = 5 A$ $I_{B2} = -5 A$ $V_{CC} = 100 V$		0.9	2	$\mu s$
$t_f$	Fall Time			0.24	0.6	$\mu s$
	Clamped $E_{s/b}$ Collector Current	$V_{clamp} = 200 V$ $L = 500 \mu H$	50			A

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle 1.5 %

**TO-3 (I) MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11	11.7	13.1	0.433	0.461	0.516
B	1.45	1.5	1.6	0.057	0.059	0.063
C	2.7		2.92	0.106		0.115
D	8.9		9.4	0.350		0.370
E	19		20	0.748		0.787
G	10.7	10.9	11.1	0.421	0.429	0.437
N	16.5	16.9	17.2	0.650	0.665	0.677
P	25		26	0.984		1.024
R	3.88		4.2	0.153		0.165
U	38.5		39.3	1.516		1.547
V	30	30.14	30.3	1.181	1.187	1.193



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