

## MEDIUM POWER NPN SILICON TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- FAST SWITCHING SPEED
- LOW COLLECTOR EMITTER SATURATION

### APPLICATIONS

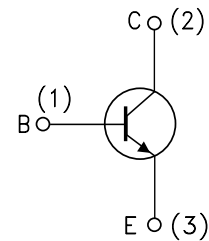
- SWITCHING REGULATORS
- MOTOR CONTROL

### DESCRIPTION

The BUV27 is a Multiepitaxial Planar NPN Transistor in TO-220 package. It is intended for use in high frequency and efficiency converters, switching regulators and motor control.



### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	240	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	120	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	12	A
$I_{CM}$	Collector Peak Current	20	A
$I_B$	Base Current	4	A
$I_{BM}$	Base Peak Current	6	A
$P_{tot}$	Total Dissipation at $T_c < 25\text{ }^\circ\text{C}$	85	W
$P_{tot}$	Total Dissipation at $T_c < 60\text{ }^\circ\text{C}$	65	W
$T_{stg}$	Storage Temperature	-65 to +175	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$

## BUV27

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	1.76	°C/W
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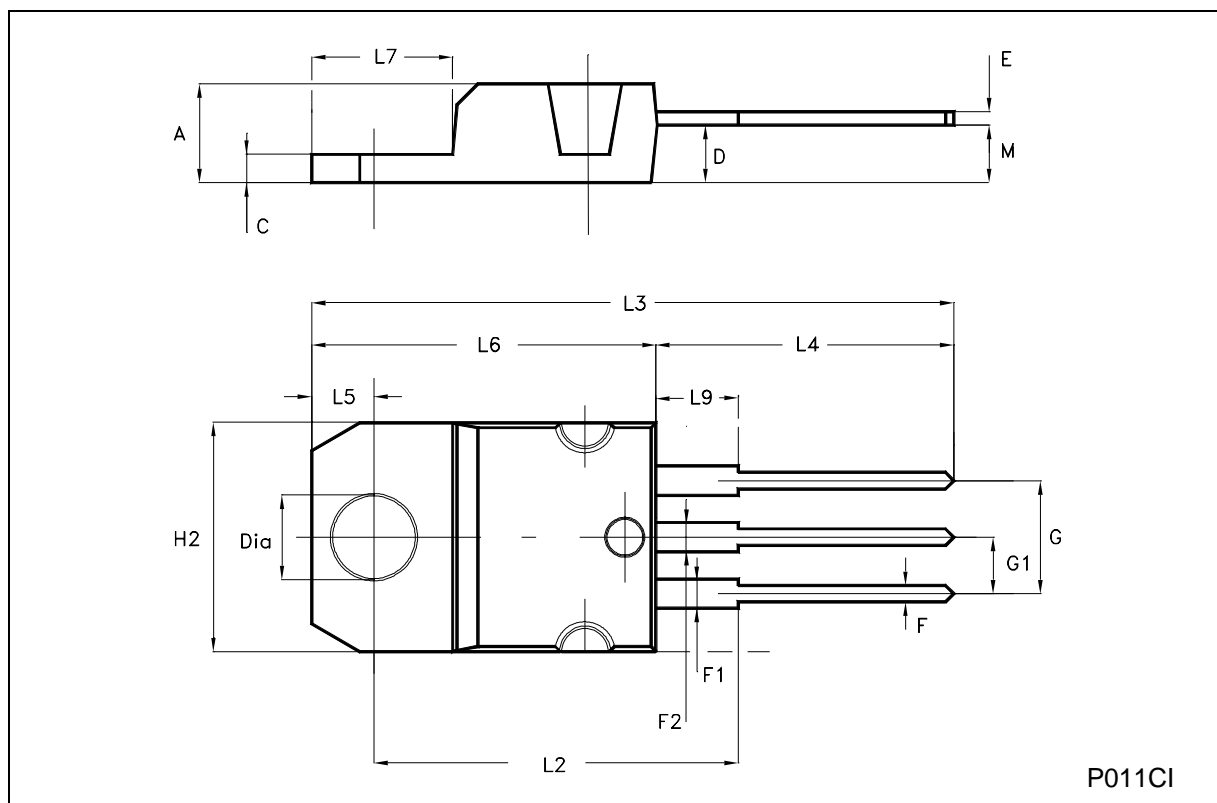
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CEr</sub>	Collector Cut-off Current (R <sub>BE</sub> = 50Ω)	V <sub>CE</sub> = 240V T <sub>c</sub> = 125°C			3	mA
I <sub>CEX</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = 240V T <sub>c</sub> = 125°C			1	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			1	mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 0.2 A L = 25mH	120			V
V <sub>EBO</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 50mA	7		30	V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A I <sub>B</sub> = 0.4A I <sub>C</sub> = 8A I <sub>B</sub> = 0.8A			0.7 1.5	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 8A I <sub>B</sub> = 0.8A			2	V
t <sub>on</sub> t <sub>s</sub> t <sub>f</sub>	RESISTIVE LOAD Turn-on Time Storage Time Fall Time	V <sub>CC</sub> = 90V I <sub>C</sub> = 8A V <sub>BE</sub> = - 6V I <sub>B1</sub> = 0.8A R <sub>BB</sub> = 3.75Ω		0.4 0.5 0.12	0.8 1.2 0.25	ms μs μs
t <sub>s</sub> t <sub>f</sub>	INDUCTIVE LOAD Storage time Fall Time	V <sub>CC</sub> = 90V I <sub>C</sub> = 8A I <sub>B1</sub> = 0.8A V <sub>BE</sub> = - 5V L <sub>B</sub> = 1μH		0.6 0.04		μs μs
t <sub>s</sub> t <sub>f</sub>	Storage Time Fall Time	V <sub>CC</sub> = 90V I <sub>C</sub> = 8 A I <sub>B1</sub> = 0.8A V <sub>BE</sub> = - 5V L <sub>B</sub> = 1μH T <sub>c</sub> = 125°C			2 0.15	μs μs

\* Pulsed: Pulse duration = 300μs, duty cycle = 2 %

**TO-220 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.052
D	2.40		2.72	0.094		0.107
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.202
G1	2.40		2.70	0.094		0.106
H2	10.00		10.40	0.394		0.409
L2		16.40			0.645	
L4	13.00		14.00	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.20		6.60	0.244		0.260
L9	3.50		3.93	0.137		0.154
M		2.60			0.102	
DIA.	3.75		3.85	0.147		0.151



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