SGS-THOMSON MICROELECTRONICS

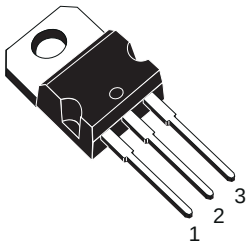
BUV27

MEDIUM POWER NPN SILICON TRANSISTOR

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

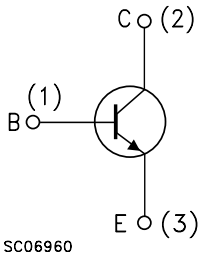
APPLICATIONS
- SWITCHING REGULATORS
- MOTOR CONTROL

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



TO-220

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 Tc < 25 ^oC	85	W
P_{tot}	Total Dissipation at T_c < 60 ^oC	65	W
T_{stg}	Storage Temperature	-65 to +175	^oC
T_j	Max. Operating Junction Temperature	175	^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.76	$^oC/W$

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current (R_{BE} = 50Ω)	V_{CE} = 240V T_c = 125^oC			3	mA
I_{CEX}	Collector Cut-off Current	V_{CE} = 240V V_{BE} = -1.5V T_c = 125^oC			1	mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			1	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage	I_C = 0.2 A L = 25mH	120			V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	I_E = 50mA	7		30	V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 4A I_B = 0.4A I_C = 8A I_B = 0.8A			0.7 1.5	V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 8A I_B = 0.8A			2	V
	RESISTIVE LOAD					
t_{on}	Turn-on Time	V_{CC} = 90V I_C = 8A		0.4	0.8	ms
t_s	Storage Time	V_{BE} = - 6V I_{B1} = 0.8A		0.5	1.2	µs
t_f	Fall Time	R_{BB} = 3.75Ω		0.12	0.25	µs
	INDUCTIVE LOAD					
t_s	Storage time	V_{CC} = 90V I_C = 8A		0.6		µs
t_f	Fall Time	I_{B1} = 0.8A V_{BE} = - 5V L_B = 1µH		0.04		µs
t_s	Storage Time	V_{CC} = 90V I_C = 8 A			2	µs
t_f	Fall Time	I_{B1} = 0.8A V_{BE} = - 5V L_B = 1µH T_j = 125^oC			0.15	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		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
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		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151