SGS-THOMSON MICROELECTRONICS

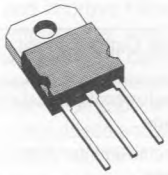
BU999

HIGH POWER FAST SWITCHING

ADVANCE DATA

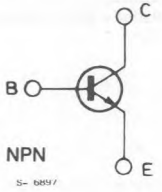
DESCRIPTION

The BU1999 type is a silicon multiepitaxial planar NPN transistor and is mounted in SOT-93 plastic package. It is intended for use in switching and linear applications, and industrial equipments.



(sim. to **TO-218**) **SOT-93**

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	160	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	140	V
V_{EBO}	Emitter base Voltage (I_C = 0)	6	V
I_C	Collector Current	25	A
I_{CM}	Collector Peak Current	40	A
I_B	Base Current	10	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C	106	W
T_{stg}	Storage Temperature	– 65 to 150	°C
T_j	Junction Temperature	150	°C

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1.17	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = 160 V				100	µA
I_{CEO}	Collector Cutoff Current (I_B = 0)	V_{CE} = 70 V				50	µA
I_{CEX}	Collector Cutoff Current	V_{CE} = 140 V V_{BE} = − 1.5 V				10	µA
I_{EBO}	Emitter Cutoff Current	V_{EB} = 6 V I_C = 0				100	µA
$V_{CEO(sus)}$	Collector-emitter Sustaining Voltage	I_C = 50 mA I_B = 0		140			V
$V_{CE(sat)}$*	Collector–emitter Saturation Voltage	I_C = 10 A I_C = 25 A	I_B = 1 A I_B = 2.5 A			0.8 1.5	V V
$V_{BE(sat)}$*	Base–emitter Saturation Voltage	I_C = 10 A I_C = 25 A	I_B = 1 A I_B = 2.5 A			1.8 2.5	V V
$V_{BE(on)}$	Base-emitter on Voltage	I_C = 10 A	V_{CE} = 2 V			1.8	V
h_{FE}*	DC Current Gain	I_C = 0.5 A I_C = 10 A I_C = 25 A	V_{CE} = 2 V V_{CE} = 2 V V_{CE} = 2 V	35 25 12		100	
t_r	Rise Time	V_{CC} = 80 V I_C = 10 A I_{B1} = I_{B2} = 1 A				0.3	µs
t_s	Storage Time					1.5	µs
t_f	Fall Time					0.25	µs

* Pulsed : pulse duration = 300 µs, duty cycle = 1.5 %.