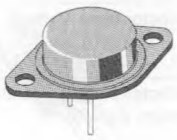
SGS-THOMSON MICROELECTRONICS

BUY69A/B/C

MULTIEPITAXIAL MESA NPN

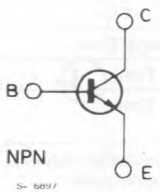
DESCRIPTION

The BUY69A, BUY69B, and BUY69C are silicon multiepitaxial mesa NPN transistors in Jedec TO-3 metal case. They are intended for horizontal deflection output stage of CTV receivers and high voltage, fast switching and industrial applications.



TO-3

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		BUY69A	BUY69B	BUY69C	
V_{CES}	Collector-emitter Voltage (V_{BE} = 0)	1000	800	500	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	400	325	200	V
V_{EBO}	Emitter-base Voltage (I_C = 0)	8			V
I_C	Collector Current	10			A
I_{CM}	Collector Peak Current ($t_p \leq 10$ ms)	15			A
I_B	Base Current	3			A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C	100			W
T_{stg}	Storage Temperature	– 65 to 200			°C
T_j	Junction Temperature	200			°C

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1.75	C/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current (V_{BE} = 0)	for **BUY69A** V_{CE} = 1000 V for **BUY69B** V_{CE} = 800 V for **BUY69C** V_{CE} = 500 V			1 1 1	mA mA mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 8 V			1	mA
V_{CBO}	Collector-base Voltage (I_E = 0)	for **BUY69A** I_C = 1 mA for **BUY69B** I_C = 1 mA for **BUY69C** I_C = 1 mA	1000 800 500			V V V
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 100 mA for **BUY69A** for **BUY69B** for **BUY69C**	 400 325 200			 V V V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 8 A I_B = 2.5 A			3.3	V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 8 A I_B = 2.5 A			2.2	V
h_{FE}*	DC Current Gain	I_C = 2.5 A V_{CE} = 10 V	15			
f_T	Transition Frequency	I_C = 0.5 A V_{CE} = 10 V		10		MHz
$I_{s/b}$**	Second Breakdown Collector Current	V_{CE} = 25 V	4			A
t_{on}	Turn-on Time	I_C = 5 A V_{CE} = 250 V I_{B1} = 1 A		0.2		µs
t_s	Storage Time	I_C = 5 A V_{CE} = 250 V I_{B1} = − I_{B2} = 1 A		1.7		µs
t_f	Fall Time			0.3		µs
t_f	Fall Time	I_C = 8 A V_{CE} = 40 V I_{B1} = − I_{B2} = 2.5 A			1	µs

* Pulsed : pulse duration = 300 µs, duty cycle = 1.5 %.
** Pulsed : 1 s, non repetitive pulse.
For characteristics curves see the BUW 34/5/6 series.