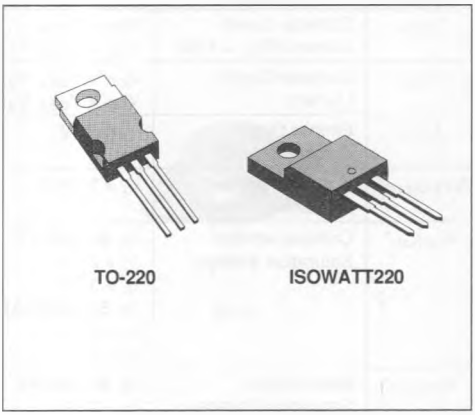
SGS-THOMSON MICROELECTRONICS

BUV46/FI
BUV46A/AFI

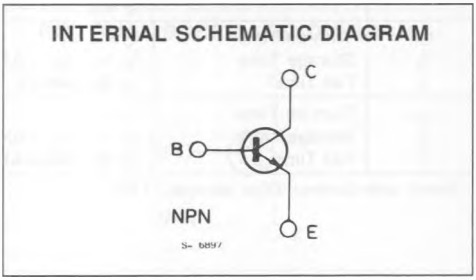
HIGH VOLTAGE POWER SWITCH

DESCRIPTION

The BUV46/A and BUV46FI/AFI are silicon multi-epitaxial mesa NPN transistors in the jedec TO-220 plastic package and ISOWATT220 fully isolated package respectively, intended for high voltage, fast switching applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	TO-220 ISOWATT220	BUV46 BUV46FI	BUV46A BUV46AFI	Unit
V_{CES}	Collector-emitter Voltage (V_{BE} = 0)		850	1000	V
V_{CEX}	Collector-emitter Voltage (V_{BE} = – 2.5V)		850	1000	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)		400	450	V
V_{EBO}	Emitter-base Voltage (I_C = 0)		7		V
I_C	Collector Current		5		A
I_B	Base Current		3		A
			TO-220	ISOWATT220	
P_{tot}	Total Power Dissipation at T_c < 25°C		70	30	W
T_{stg}	Storage Temperature		– 65 to 150		°C
T_j	Max. Operating Junction Temperature		150		°C

THERMAL DATA

			TO-220	ISOWATT220	
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	max	1.76	4.12	°C/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cutoff Current (R_{BE} = 10Ω)	V_{CE} = V_{CEX} V_{CE} = V_{CEX} T_c = 125°C			0.1 1	mA mA
I_{CEX}	Collector Cutoff Current	V_{CE} = V_{CEX} V_{BE} = − 2.5V V_{CE} = V_{CEX} V_{BE} = − 2.5V T_c = 125°C			0.3 2	mA mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 7V			1	mA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage	I_C = 100mA for **BUV46/FI** for **BUV46A/AFI**	400 450			V V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	for **BUV46/FI** I_C = 2.5A I_B = 0.5A I_C = 3.5A I_B = 0.7A for **BUV46A/AFI** I_C = 2A I_B = 0.4A I_C = 3A I_B = 0.6A			 1.5 5 1.5 5	 V V V V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	for **BUV46/FI** I_C = 2.5A I_B = 0.5A for **BUV46A/AFI** I_C = 2A I_B = 0.4A			 1.3 1.3	 V V
t_{on} t_s t_f	Turn-on Time Storage Time Fall Time	I_C = 2.5A V_{CC} = 150V I_{B1} = − I_{B2} = 0.5A for **BUV46/FI**			1 3 0.8	µs µs µs
t_{on} t_s t_f	Turn-on Time Storage Time Fall Time	I_C = 2A V_{CC} = 150V I_{B1} = − I_{B2} = 0.4A for **BUV46A/AFI**			1 3 0.8	µs µs µs

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