



SGS-THOMSON
MICROELECTRONICS

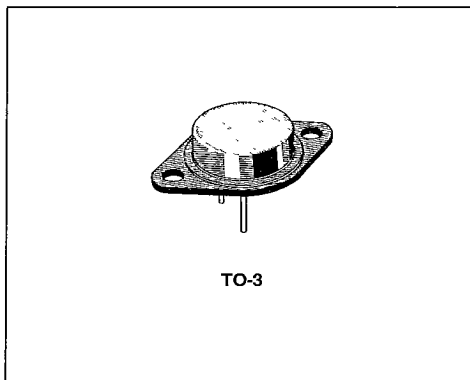
2N6674
2N6675

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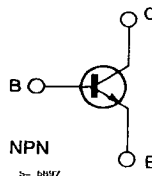
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NPN HIGH VOLTAGE POWER TRANSISTORS

- SWITCHING REGULATORS
- INVERTERS
- SOLENOID AND RELAY DRIVERS
- MOTOR CONTROLS
- DEFLECTION CIRCUITS



INTERNAL SCHEMATIC DIAGRAM



DESCRIPTION

High voltage, high speed switching power transistors suited for use on the 220 and 380V mains.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	2N6674	2N6675	Unit
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	450	650	V
V_{CEX}	Collector-emitter Voltage	350	400	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	300	450	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7		V
I_C	Collector Current	15		A
I_{CM}	Collector Peak Current	20		A
I_B	Base Current	5		A
P_{tot}	Total Dissipation at $T_c < 25^\circ C$	175		W
T_{stg}	Storage Temperature	- 65 to 200		$^\circ C$
T_j	Max. Operating Junction Temperature	200		$^\circ C$

THERMAL DATA

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R _{thj-case}	Thermal Resistance Junction-case	Max	1	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEV}	Collector Cutoff Current	V _{CE} = V _{CEV} V _{BE} = -1.5V V _{CE} = V _{CEV} V _{BE} = -1.5V T _c = 100°C			0.1 1	mA mA
I _{EBO}	Emitter Cutoff Current (I _C = 0)	V _{EB} = 7V			2	mA
V _{CEO(sus)} *	Collector Emitter Sustaining Voltage	I _C = 0.2A L _C = 25mH for 2N6674 for 2N6675	300 400			V V
V _{CEx(sus)} *	Collector-emitter Sustaining Voltage	I _C = 10A L _C = 50μH I _B = 2A R _{BB} = 2Ω V _{BB} = -4V for 2N6674 for 2N6675	350 450			V V
V _{CE(sat)} *	Collector-emitter Saturation Voltage	I _C = 10A I _B = 2A I _C = 10A I _B = 2A T _c = 100°C I _C = 15A I _B = 5A			1 2 5	V V V
V _{BE(sat)} *	Base-emitter Saturation Voltage	I _C = 10A I _B = 2A			1.5	V
h _{FE} *	DC Current Gain	I _C = 10A V _{CE} = 2V	8			
h _{re}	Small Signal Current Gain	I _C = 1A V _{CE} = 10V f = 5MHz	3		10	

RESISTIVE LOAD

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _d	Delay Time	V _{CC} = 135V I _C = 10A t _p = 20μs			0.1	μs
t _r	Rise Time	V _{BB} = -6V I _{t#} p= 20μs			0.6	μs
t _r	Rise Time	V _{CC} = 135V I _C = 10A t _p = 20μs V _{BB} = -6V I _{B1} = 2A T _c = 100°C			1	μs
t _s	Storage Time	V _{CC} = 135V I _C = 10A t _p = 20μs V _{BB} = -6V I _{B1} = -I _{B2} = 2A			2.5	μs
t _f	Fall Time				0.5	μs
t _s	Storage Time	V _{CC} = 135V I _C = 10A t _p = 20μs V _{BB} = -6V I _{B1} = -I _{B2} = 2A			4	μs
t _f	Fall Time	T _c = 100°C			1	μs

INDUCTIVE LOAD

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _c	Crossover Time	V _{CC} = 135V I _C = 10A I _C = 50μH R _C = 13.5Ω I _{B1} = -I _{B2} = 2A V _{clamp} = V _{CEx} T _c = 25°C T _c = 100°C			0.5 0.8	μs μs

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

Figure 1 : Test Circuit RBSOA.

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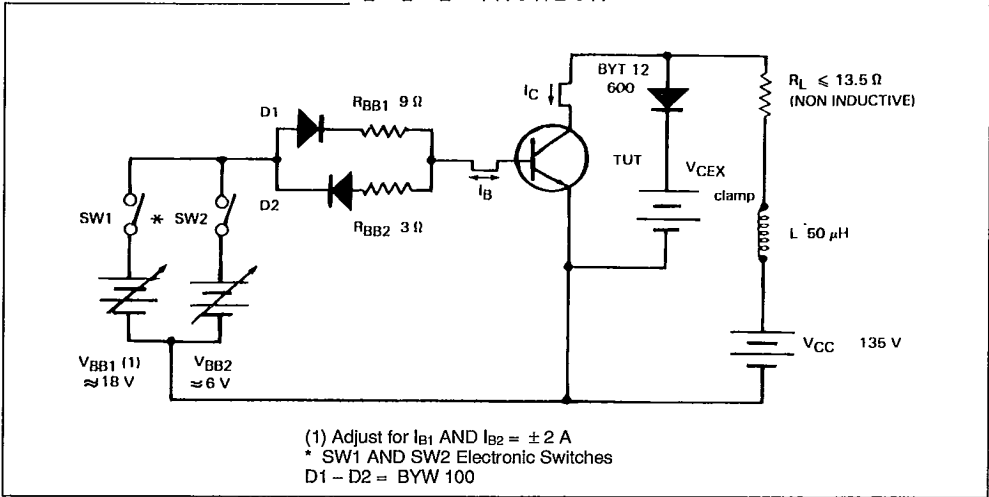


Figure 2 : Maximum Operating Conditions for Switching between Saturation and Cut-off.

