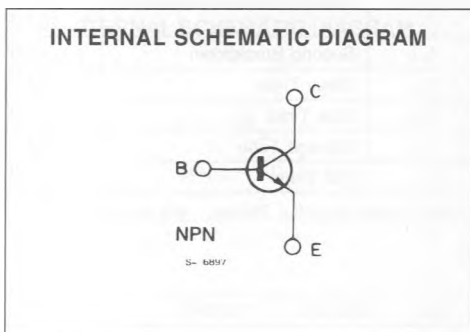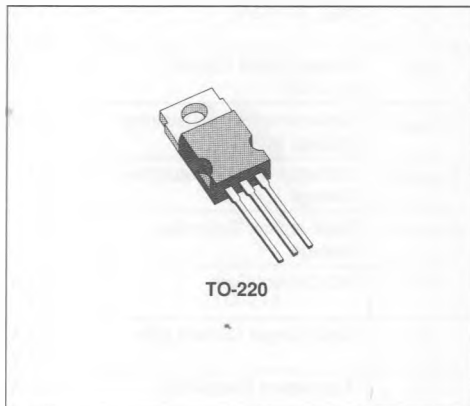**SGS-THOMSON**
MICROELECTRONICS

SWITCHING AND GENERAL PURPOSE

DESCRIPTION

The 2N6702 is a silicon multiepitaxial planar NPN transistor and is mounted in Jedec TO-220 plastic package.

It is intended for various switching and general purpose applications.

TO-220

INTERNAL SCHEMATIC DIAGRAM

NPN

S- 6897

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	140	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	90	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	7	A
I_{CM}	Collector Peak Current	10	A
I_B	Base Current	5	A
P_{tot}	Total Power Dissipation ($T_{case} \leq 25°C$)	50	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	2.5	°C/W

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

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CEV}	Collector Cutoff Current (V_{BE} = − 1.5V)	V_{CE} = 140V V_{CE} = 140V at T_{case} = 125°C				100 1	μA mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 7V				100	μA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 100mA		90			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 5A I_C = 7A	I_B = 0.5A I_B = 0.7A			0.8 1.5	V V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 5A	I_B= 0.5A			1.5	V
h_{FE}*	DC Current Gain	I_C = 0.2A I_C = 5A	V_{CE} = 2V V_{CE} = 2V	30 20			
h_{fe}	Small Singal Current gain	I_C = 0.5A f = 5MHz	V_{CE} = 10V	4		40	
f_T	Transistion Frequency	I_C = 0.5A f = 5MHz	V_C = 10V	20		200	MHz
C_{CBO}	Collector Base Capacitance	I_E = 0 f = 100KHz	V_{CB} = 10V	50		150	pF
$I_{s/b}$	Second Breakdown	V_{CE} = 20V	t = 100ms	2.5			A
t_d	Delay Time	I_C = 5A V_{CC} = 70V	I_{B1} = 0.5A			0.1	μs
t_r	Rise Time					0.25	μs
t_s	Storage Time	I_C = 5A I_{B1} = − I_{B2} = 0.5A V_{CC} = 70V				1	μs
t_r	Fall Time					0.5	μs

* Pulsed : pulse duration = 300μsec. ; duty cycle < 2%.

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