SGS-THOMSON MICROELECTRONICS

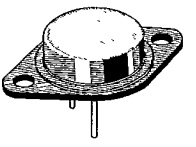
2N5671
2N5672

HIGH CURRENT FAST SWITCHING APPLICATIONS

DESCRIPTION

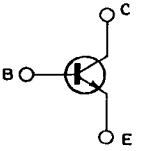
The 2N5671 and 2N5672 are silicon multiepitaxial planar NPN transistors in Jedec TO-3 metal case.

They are especially intended for high current, fast switching industrial applications.



TO-3

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	2N5671	2N5672	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	120	150	V
V_{CEX}	Collector-emitter Voltage ($V_{BE} = -1.5V$, $R_{BE} = 50\Omega$)	120	150	V
V_{CER}	Collector-emitter Voltage ($R_{BE} \leq 50\Omega$)	110	140	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	90	120	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7		V
I_C	Collector Current	30		A
I_B	Base Current	10		A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25°C$	140		W
T_{stg}	Storage Temperature	– 65 to 200		°C
T_j	Junction Temperature	200		°C

THERMAL DATA

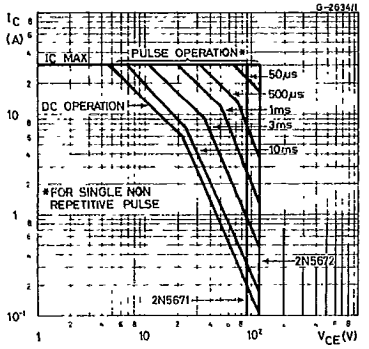
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1.25	°C/W

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

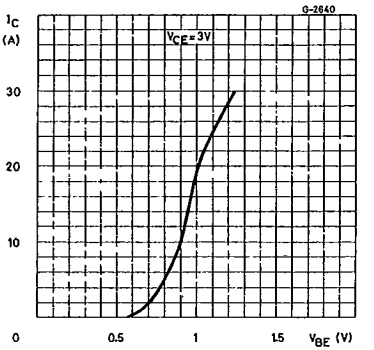
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CEV}	Collector Cutoff Current (V_{BE} = − 1.5V)	for **2N5671** V_{CE} = 110V for **2N5672** V_{CE} = 135V V_{CE} = 100V T_{case} = 150°C for **2N5671** for **2N5672**				12 10 15 10	mA mA mA mA
I_{CEO}	Collector Cutoff Current (I_B = 0)	V_{CE} = 80V				10	mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 7V				10	mA
$V_{CEX(sus)}$*	Collector-emitter Sustaining Voltage (V_{BE} = − 1.5V R_{BE} = 50Ω)	I_C = 200mA	for **2N5671** for **2N5672**	120 150			V V
$V_{CER(sus)}$*	Collector-emitter Sustaining Voltage (R_{BE} = 50Ω)	I_C = 200mA	for **2N5671** for **2N5672**	110 140			V V
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 200mA	for **2N5671** for **2N5672**	90 120			V V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 15A	I_B = 1.2A			0.75	V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 15A	I_B = 1.2A			1.5	V
V_{BE}*	Base-emitter Voltage	I_C = 15A	V_{CE} = 5V			1.6	V
h_{FE}*	DC Current Gain	I_C = 15A I_C = 20A	V_{CE} = 2V V_{CE} = 5V	20 20		100	
f_T	Transistion Frequency	I_C = 2A	V_{CE} = 10V	50			MHz
C_{CBO}	Collector-base Capacitance	I_E = 0 f = 1MHz	V_{CB} = 10V			900	pF
t_{on}	Turn-on Time	I_C = 15A I_{B1} = − I_{B2} = 1.2A	V_{CC} = 30A			0.5	µs
t_s	Storage Time					1.5	µs
t_f	Fall Time					0.5	µs
$I_{s/b}$**	Second Breakdown Collector Current	V_{CE} = 24V V_{CE} = 45V		5.8 0.9			A A
$E_{s/b}$	Second Breakdown Energy	V_{BE} = − 4V L = 180µH	R_{BE} = 20Ω	20			mJ

* Pulsed : pulse duration = 300µs, duty cycle = 1.5 %.
** Pulsed : 1 s, non repetitive pulse.

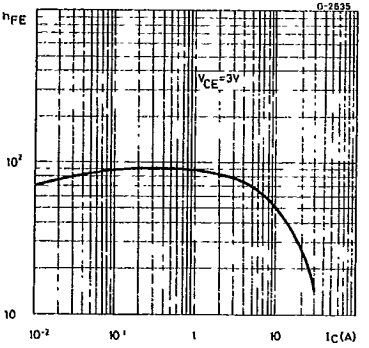
Safe Operating Areas.



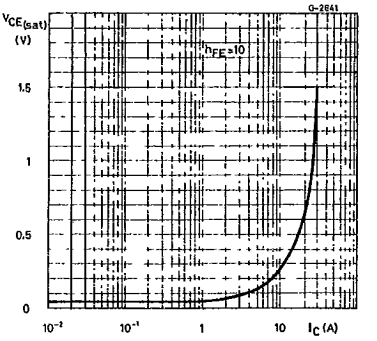
DC Transconductance.



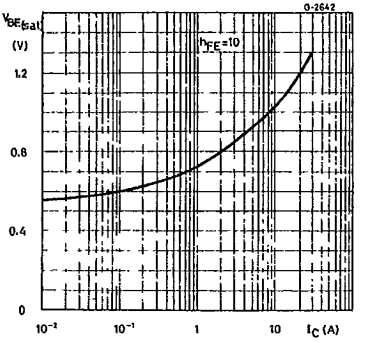
DC Current Gain.



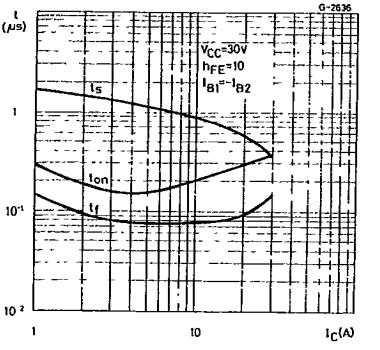
Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.



Saturated Switching Characterisitcs.



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