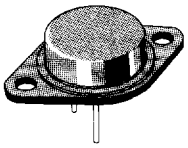
SGS-THOMSON
MICROELECTRONICS

2N5629
2N6029

COMPLEMENTARY HIGH POWER TRANSISTORS

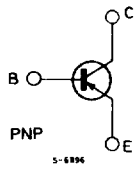
DESCRIPTION

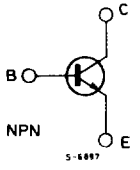
The 2N5629 (NPN) and 2N6029 (PNP) are complementary silicon epitaxial-base transistors in Jedec TO-3 metal case. They are intended for high power audio amplifier applications and switching regular circuits.



TO3

INTERNAL SCHEMATIC DIAGRAMS





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-emitter Voltage (I_B = 0)	100	V
V_{CBO}	Collector-base Voltage (I_E = 0)	100	V
V_{EBO}	Emitter-base Voltage (I_C = 0)	7	V
I_C	Collector Current	16	A
I_{CM}	Collector Peak Current	20	A
I_B	Base Current	5	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25°C$	200	W
T_{stg}	Storage Temperature	– 65 to 200	°C
T_j	Junction Temeprature	200	°C

For PNP type voltage and current values are negative.

THERMAL DATA

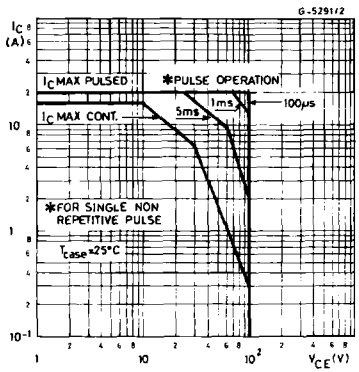
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	0.875	°C/W

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

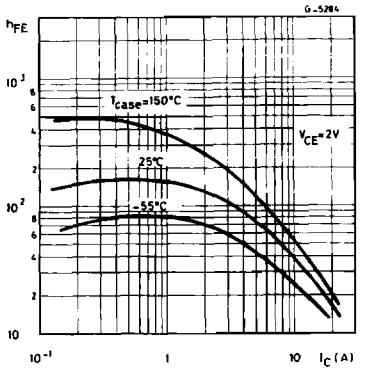
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current (I_B = 0)	V_{CE} = 50V			1	mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 7V			1	mA
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = 100V			1	mA
I_{CEV}	Collector-emitter Cutoff Current (V_{BE} = − 1.5V)	V_{CE} = 100V V_{CE} = 100V T_{case} = 150°C			1 5	mA mA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 200mA	100			V
h_{FE}*	DC Current Gain	I_C = 8A V_{CE} = 2V I_C = 16A V_{CE} = 2V	25 4		100	
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 10A I_B = 1A I_C = 16A I_B = 4A			1 2	V V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 10A I_B = 1A			1.8	V
V_{BE}*	Base-emitter Voltage	I_C = 8A V_{CE} = 2V			1.5	V
f_T	Transition Frequency	I_C = 1A V_{CE} = 20V f = 0.5MHz	1			MHz
C_{CBO}	Collector-base Capacitance	V_{CB} = 10V I_E = 0 f = 0.1MHz for **2N6029**			500 1000	pF pF
h_{fe}	Small Signal Current Gain	I_C = 4A V_{CE} = 10V f = 1KHz	15			

* Pulsed : pulse duration = 300 µs, duty cycle ≤ 2 %.
For PNP type voltage and current values are negative.

Safe Operating Areas.



DC Current Gain (NPN type).



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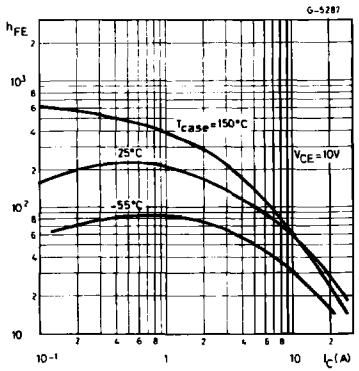
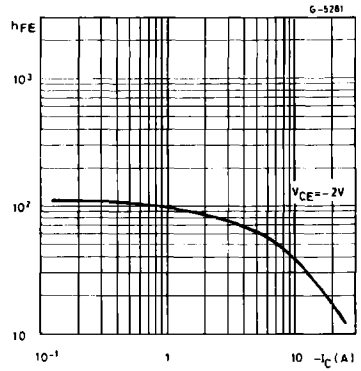
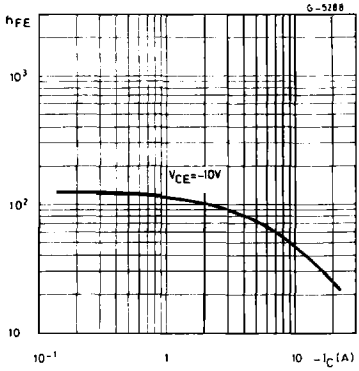


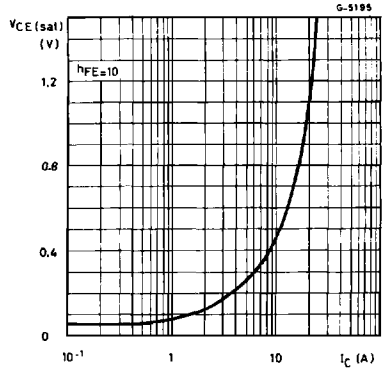
DC Current Gain (PNP type).



DC Current Gain (PNP type).



Collector-emitter Saturation Voltage (PNP type).



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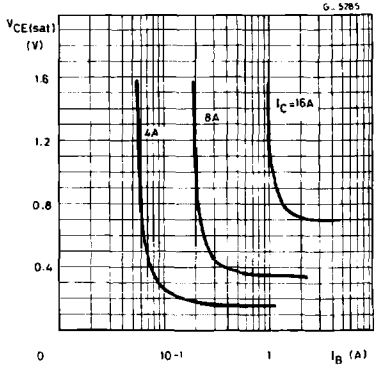

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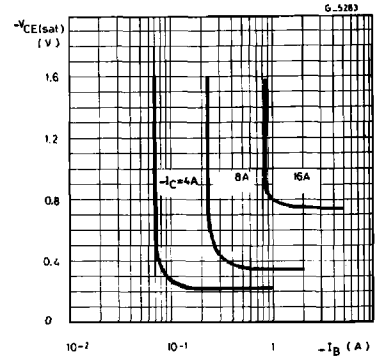
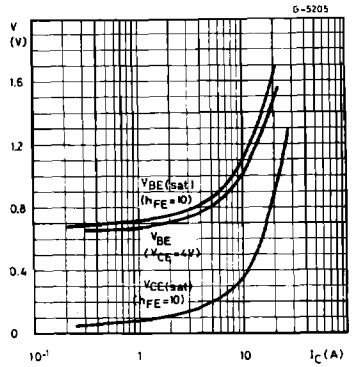
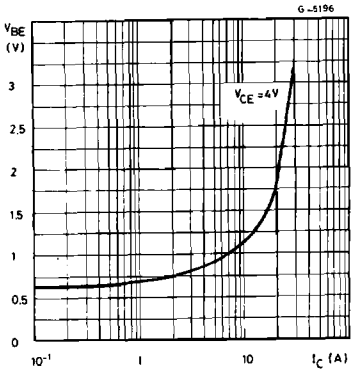


Saturation Voltage (PNP type).



Base-emitter Voltage (PNP type).



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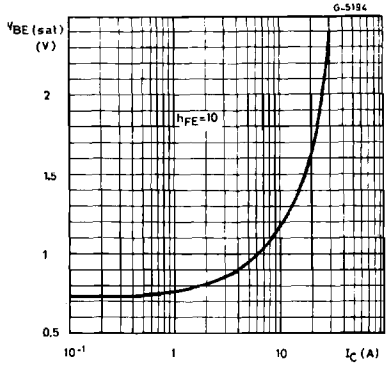
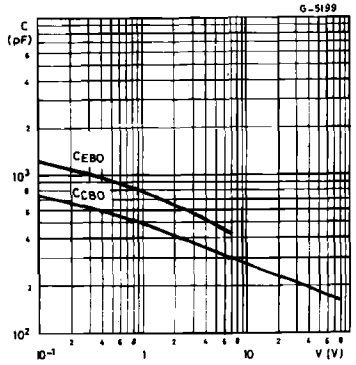


Capacitances (NPN type).



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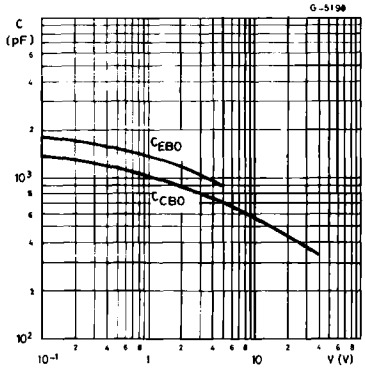
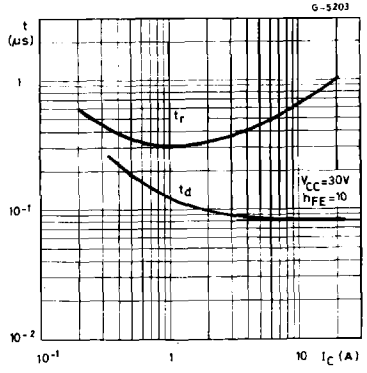


Turn-on Time (NPN type).



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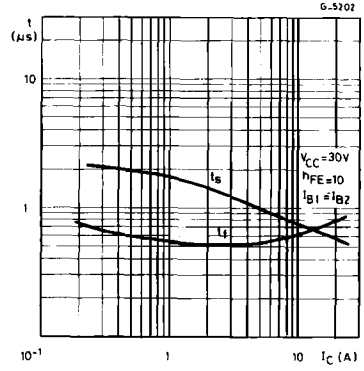
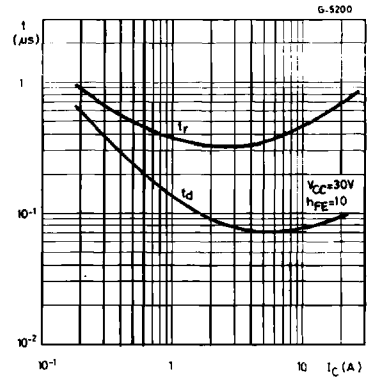


Turn-on Time (PNP type).



Turn-off Time (PNP type).