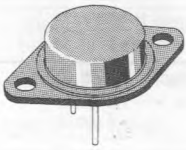
SGS-THOMSON MICROELECTRONICS

2N6282/83/84
2N6285/86/87

COMPLEMENTARY POWER DARLINGTONS

DESCRIPTION

The 2N6282, 2N6283 and 2N6284 and the complementary PNP types 2N6285, 2N6286, 2N6287 are epitaxial-base silicon transistors in monolithic Darlington configuration in Jedec TO-3 metal Case. They are intended for general-purpose amplifier and low-frequency switching applications.



TO-3

INTERNAL SCHEMATIC DIAGRAMS

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	PNP / NPN	2N6282 / 2N6285	2N6283 / 2N6286	2N6284 / 2N6287	Unit
V_{CEO}	Collector-emitter Voltage (I_B = 0)		60	80	100	V
V_{CBO}	Collector-base Voltage (I_E = 0)		60	80	100	V
V_{EBO}	Emitter-base Voltage (I_C = 0)		5			V
I_C	Collector Current		20			A
I_{CM}	Collector Peak Current		40			A
I_B	Base Current		0.5			A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25°C$		160			W
T_{stg}	Storage Temperature		– 65 to 200			°C
T_j	Junction Temperature		200			°C

For PNP types voltage and current values are negative.

THERMAL DATA

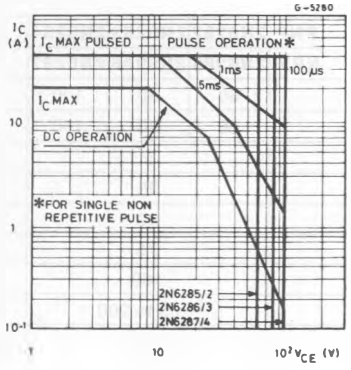
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1.09	°C/W

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

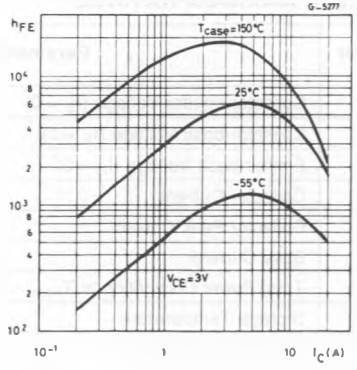
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current (I_B = 0)	for **2N6282, 2N6285** V_{CE} = 30V for **2N6283, 2N6286** V_{CE} = 40V for **2N6284, 2N6287** V_{CE} = 50V			1 1 1	mA mA mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 5V			2	mA
I_{CEV}	Collector Cutoff Current (V_{BE} = – 1.5V)	V_{CE} = rated V_{CBO} V_{CE} = rated V_{CBO} T_{case} = 150°C			0.5 5	mA mA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 0.1A for **2N6282, 2N6285** for **2N6283, 2N6286** for **2N6284, 2N6287**	 60 80 100			 V V V
$V_{CE(sat)}$*	Base-emitter Saturation Voltage	I_C = 10A I_B = 40mA I_C = 20A I_B = 200mA			2 3	V V
$V_{BE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 20A I_B = 200mA			4	V
V_{BE}*	Base-emitter Voltage	I_C = 10A V_{CE} = 3V			2.8	V
h_{FE}*	DC Current Gain	I_C = 10A V_{CE} = 3V I_C = 20A V_{CE} = 3V	750 100		18000	
C_{CBO}	Collector-base Capacitance	V_{CB} = 10V I_E = 0 f = 0.1MHz for **2N6282, 2N6283, 2N6284** for **2N6285, 2N6286, 2N6287**			 400 600	 pF pF
h_{fe}	Small Signal Current Gain	I_C = 10A V_{CE} = 3V f = 1KHz	300			

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

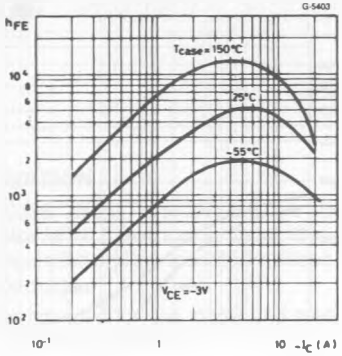
Safe Operating Areas.



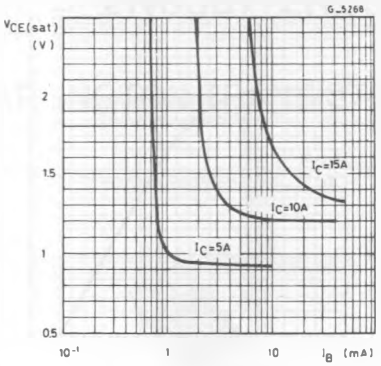
DC Current Gain (NPN types).



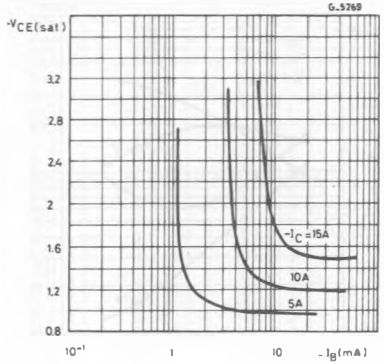
DC Current Gain (PNP types).



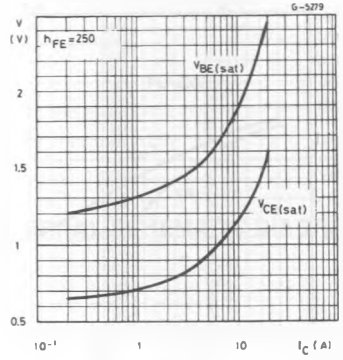
Collector-emitter Saturation Voltage (NPN types).



Collector-emitter saturation Voltage (PNP types).



Saturation Voltages (NPN types).



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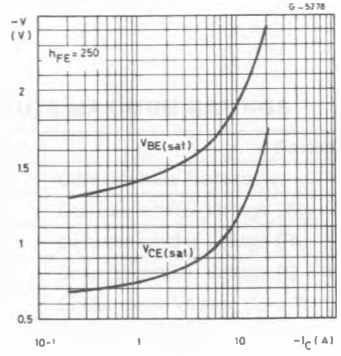
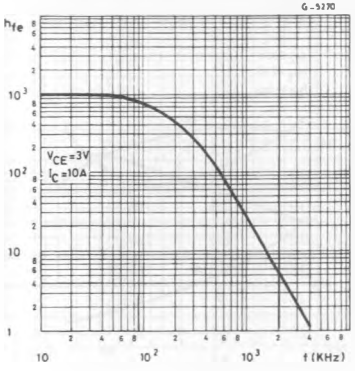


Small Signal Current Gain (NPN types).



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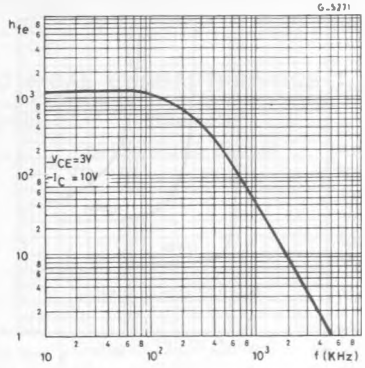
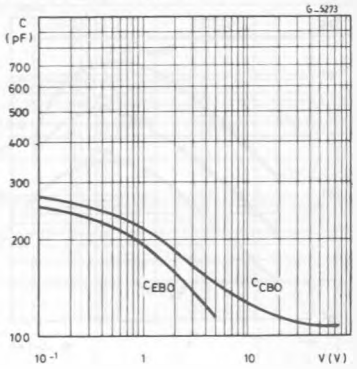


Capacitances (NPN types).



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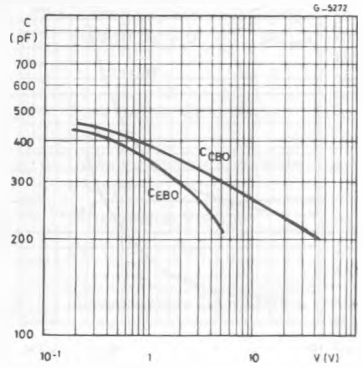
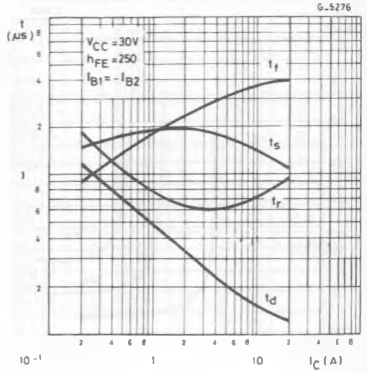


Saturated Switching Times (NPN types).



Saturated Switching Times (PNP types).