SGS-THOMSON MICROELECTRONICS

STD909
STD910

COMPLEMENTARY SILICON POWER TRANSISTORS

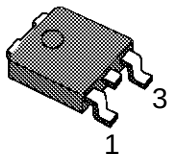
- SGS-THOMSON PREFERRED SALESTYPES
- SURFACE-MOUNTING TO-252 (DPAK) POWER PACKAGE IN TAPE & REEL (SUFFIX "T4")
- ELECTRICAL SIMILAR TO BD909 AND BD910

APPLICATIONS

- GENERAL PURPOSE SWITCHING AND AMPLIFIER

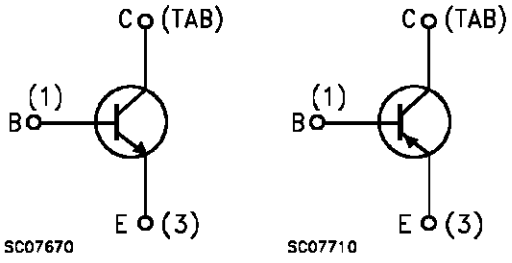
DESCRIPTION

The STD909 and the STD910 form complementary NPN-PNP pairs. They are manufactured using Epitaxial Base technology for cost-effective performance.



DPAK
TO-252
(Suffix "T4")

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	80	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	80	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	5	V
I_C	Collector Current	15	A
I_B	Base Current	5	A
P_{tot}	Total Dissipation at T_c = 25 °C	20	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C

For PNP type voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$ Thermal Resistance Junction-case	Max	6.25	°C/W
$R_{thj\text{-}amb}$ Thermal Resistance Junction-ambient	Max	100	°C/W

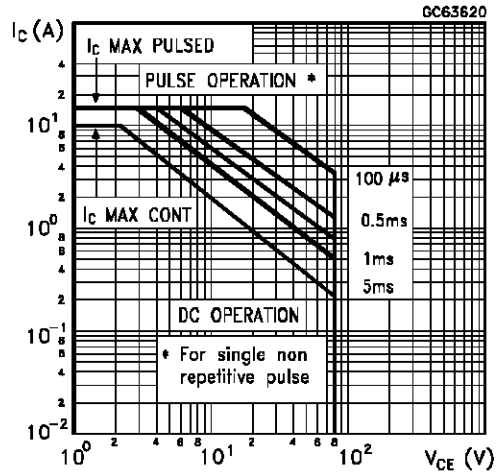
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (i_E = 0)	V_{CB} = 80 V V_{CB} = 80 V T_j = 150 °C			0.01 2	mA mA
I_{CEO}	Collector Cut-off Current (i_B = 0)	V_{CB} = 40 V			0.01	mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			0.1	mA
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	I_C = 100 mA	80			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 5 A I_B = 0.5 A I_C = 10 A I_B = 2.5 A			1 3	V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 10 A I_B = 2.5 A			2.5	V
V_{BE}*	Base-Emitter Voltage	I_C = 5 A V_{CE} = 4 V			1.5	V
h_{FE}*	DC Current Gain	I_C = 0.5 A V_{CE} = 4 V I_C = 5 A V_{CE} = 4 V I_C = 10 A V_{CE} = 4 V	40 15 5		250 150	
f_T	DC Current Gain	I_C = 0.5 A V_{CE} = 4 V	3			MHz

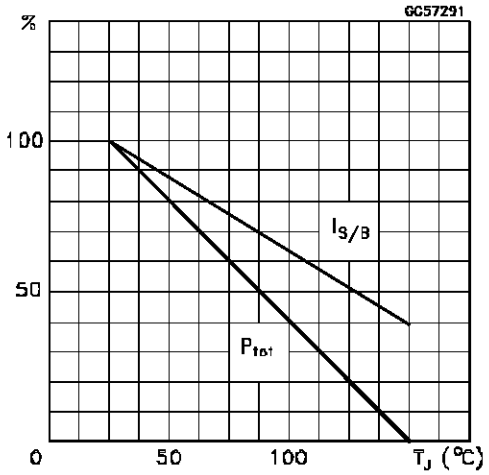
* Pulsed: Pulse duration = 300 µs, duty cycle 1.5 %

For PNP type voltage and current values are negative.

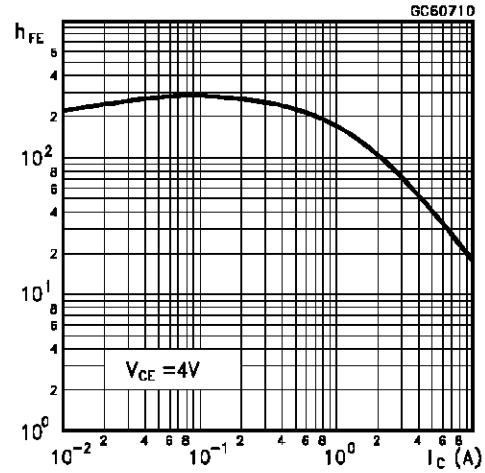
Safe Operating Areas



Derating Curve



DC Current Gain (NPN type)



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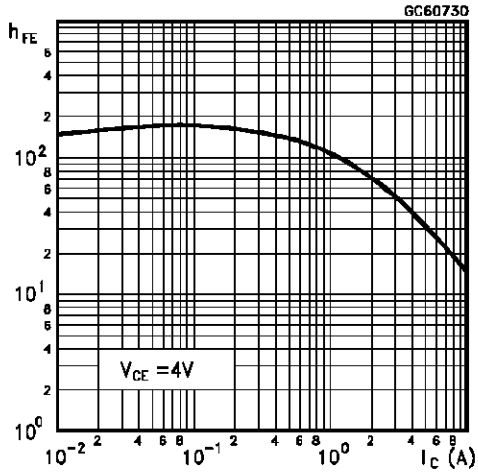
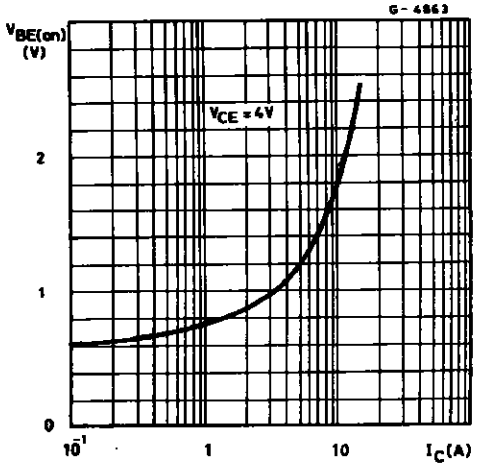


DC Transconductance (NPN type)



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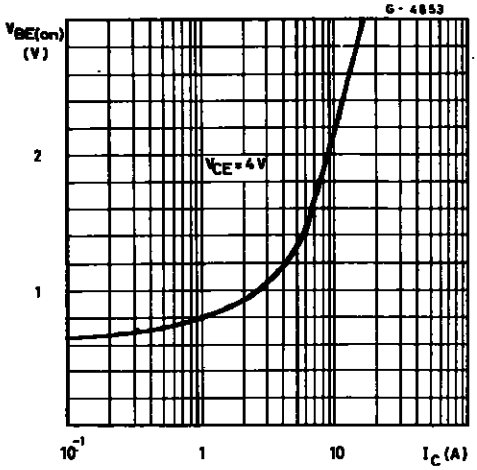
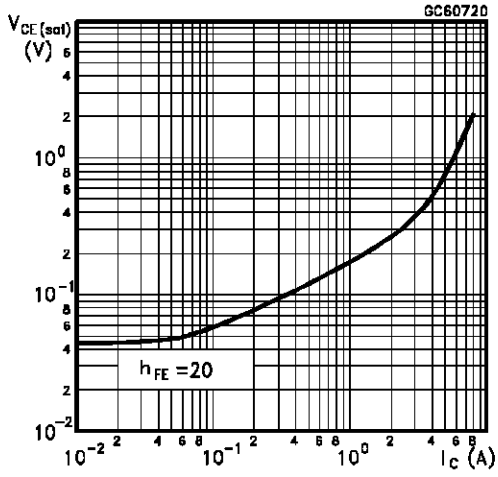


Collector-Emitter Saturation Voltage (NPN type)



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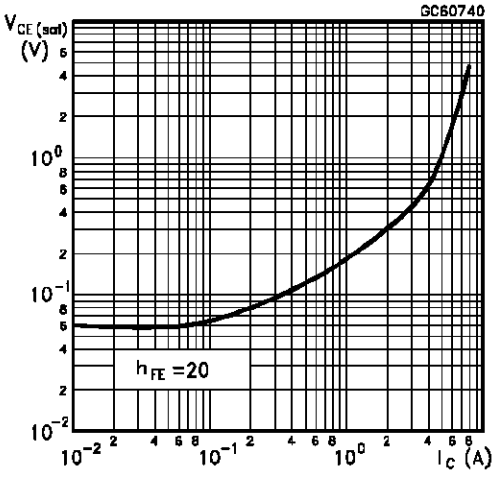
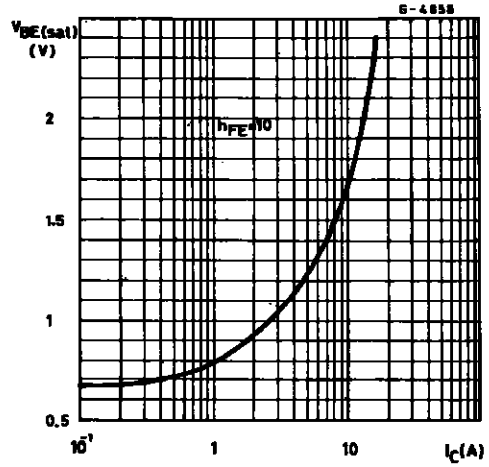


Base-Emitter Saturation Voltage (NPN type)



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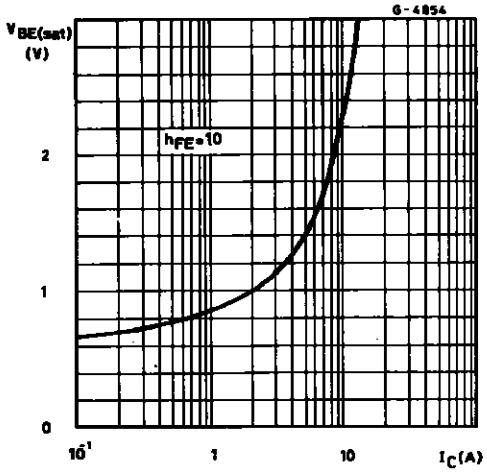
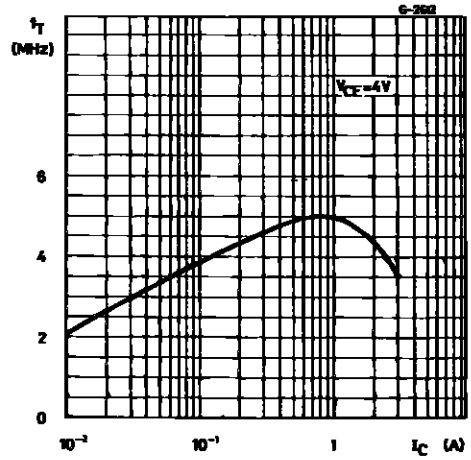


Transition Frequency (NPN types)



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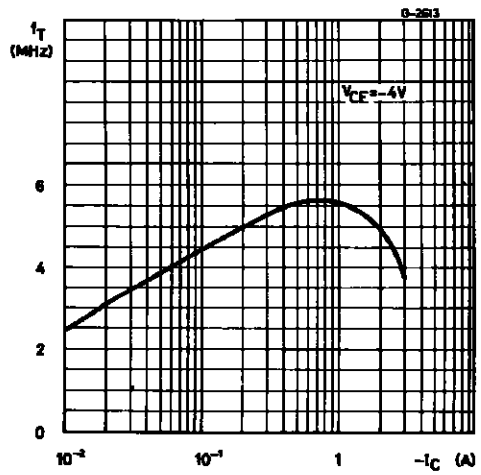
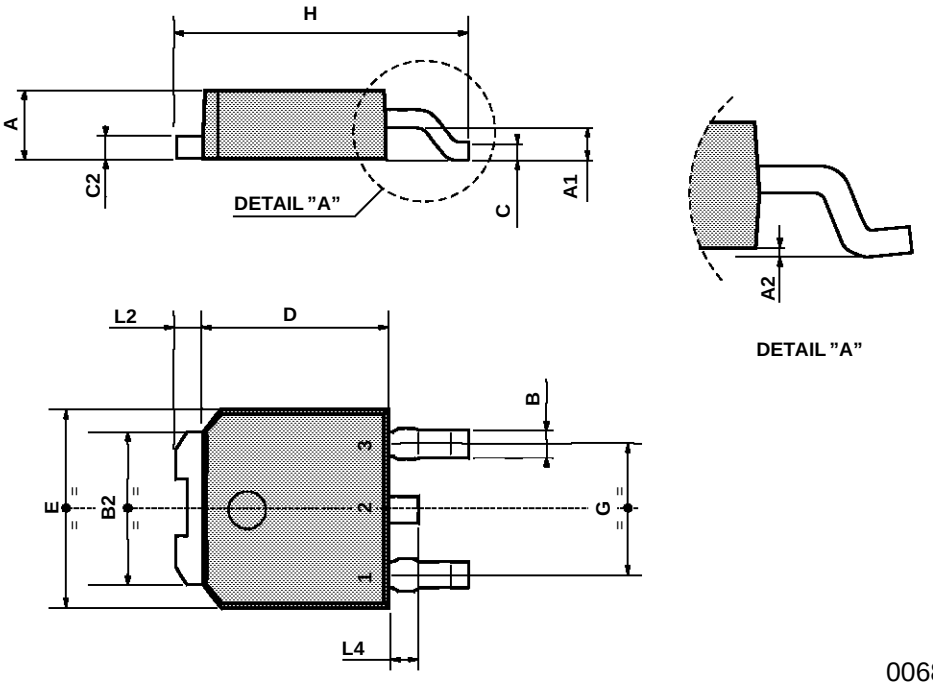


TO-252 (DPAK) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.2		2.4	0.086		0.094
A1	0.9		1.1	0.035		0.043
A2	0.03		0.23	0.001		0.009
B	0.64		0.9	0.025		0.035
B2	5.2		5.4	0.204		0.212
C	0.45		0.6	0.017		0.023
C2	0.48		0.6	0.019		0.023
D	6		6.2	0.236		0.244
E	6.4		6.6	0.252		0.260
G	4.4		4.6	0.173		0.181
H	9.35		10.1	0.368		0.397
L2		0.8			0.031	
L4	0.6		1	0.023		0.039



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