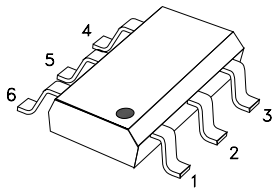
STT818B

HIGH GAIN LOW VOLTAGE PNP POWER TRANSISTOR

Type	Marking
STT818B	818B

- VERY LOW COLLECTOR TO EMITTER SATURATION VOLTAGE
- DC CURRENT GAIN > 100 (h_{FE})
- 3 A CONTINUOUS COLLECTOR CURRENT (I_C)
- SURFACE-MOUNTING SOT23-6L PACKAGE IN TAPE & REEL



SOT23-6L
(TSOP6)

APPLICATIONS

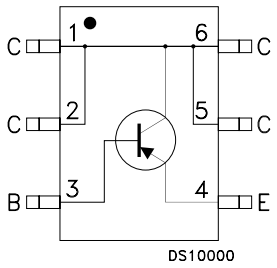
- POWER MANAGEMENT IN PORTABLE EQUIPMENTS
- SWITCHING REGULATOR IN BATTERY CHARGER APPLICATIONS

DESCRIPTION

The device is manufactured in low voltage PNP Planar Technology by using a "Base Island" layout.

The resulting Transistor shows exceptional high gain performance coupled with very low saturation voltage.

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	-30	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	-30	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	-5	V
I_C	Collector Current	-3	A
I_{CM}	Collector Peak Current	-6	A
I_B	Base Current	-0.2	A
I_{BM}	Base Peak Current	-0.5	A
P_{tot}	Total Dissipation at T_C = 25 ^oC	1.2	W
T_{stg}	Storage Temperature	-65 to 150	^oC
T_j	Max. Operating Junction Temperature	150	^oC

THERMAL DATA

$R_{thj\text{-}amb}$ (1)	Thermal Resistance Junction-ambient	Max	104.2	°C/W

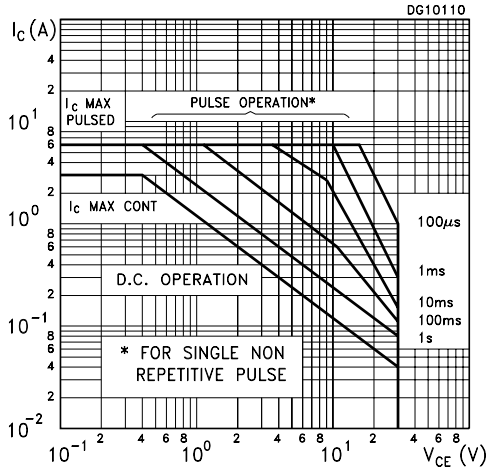
(1) Package mounted on FR4 pcb 25mm x 25mm.

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

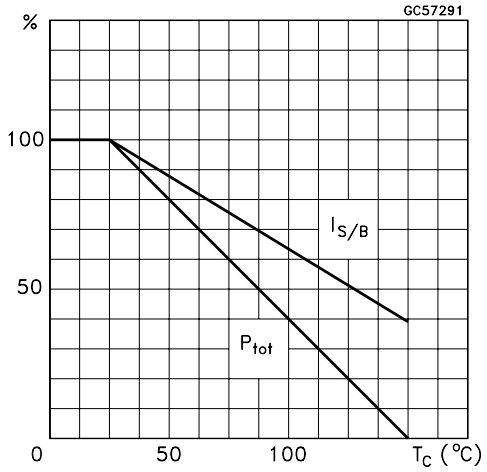
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = -30 V V_{CB} = -30 V T_C = 125 °C			-0.1 -20	µA µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = -5 V			-0.1	µA
$V_{(BR)CEO}$*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = -10 mA	-30			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = -0.5 A I_B = -5 mA I_C = -2 A I_B = -20 mA I_C = -1.2 A I_B = -20 mA		-0.075 -0.21	-0.15 -0.5 -0.25	V V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = -0.5 A I_B = -5 mA I_C = -1.2 A I_B = -20 mA I_C = -2 A I_B = -20 mA		-0.74	-1.1 -1.1 -1.2	V V V
$V_{BE(ON)}$*	Base-Emitter Voltage	I_C = -0.5 A V_{CE} = -2 V		-0.71	-1.1	V
h_{FE}*	DC Current Gain	I_C = -0.5 A V_{CE} = -1 V I_C = -2.5 A V_{CE} = -3 V	100 100			

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

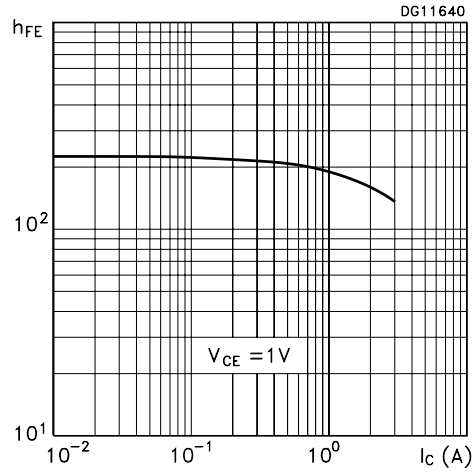
Safe Operating Area



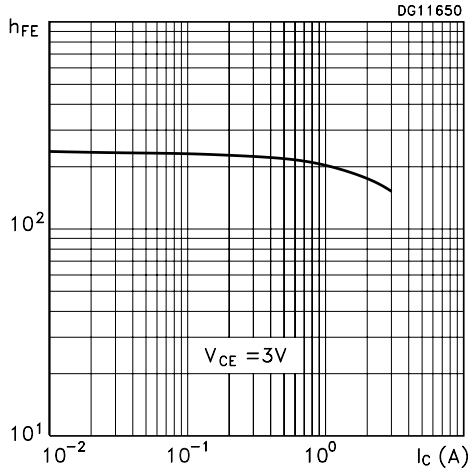
Derating Curve



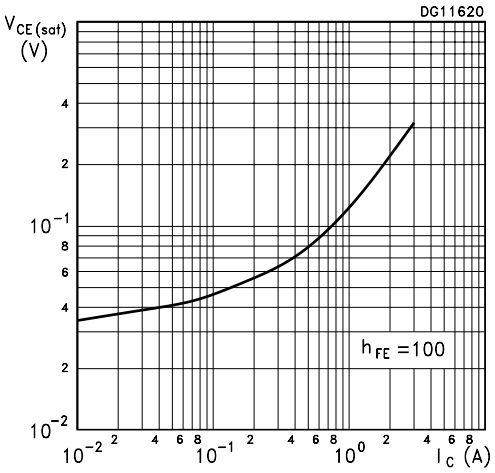
DC Current Gain



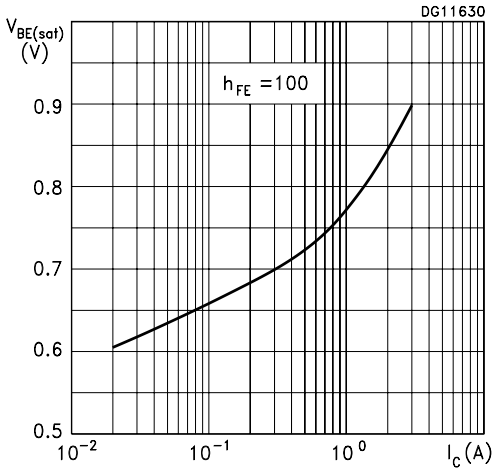
DC Current Gain



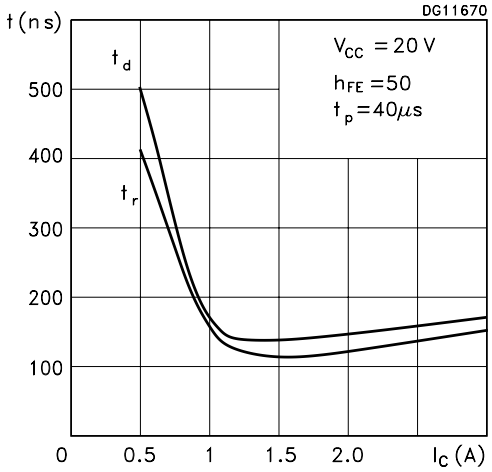
Collector-Emitter Saturation Voltage



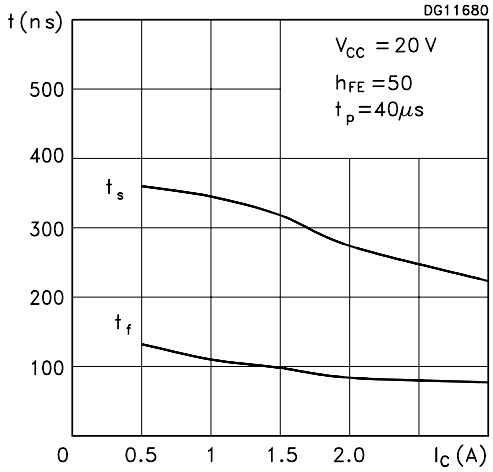
Base-Emitter Saturation Voltage



Switching Times Resistive Load



Switching Times Resistive Load



SOT23-6L MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90		1.30	0.035		0.051
b	0.25		0.50	0.010		0.020
C	0.09		0.20	0.004		0.008
D	2.80		3.10	0.110		0.122
E	2.60		3.00	0.102		0.118
E1	1.50		1.75	0.059		0.069
L	0.35		0.55	0.014		0.022
e		0.95			0.037	
e1		1.90			0.075