



# 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

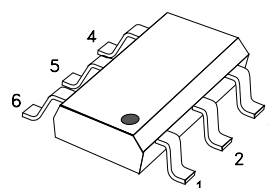
### APPLICATIONS

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

### DESCRIPTION

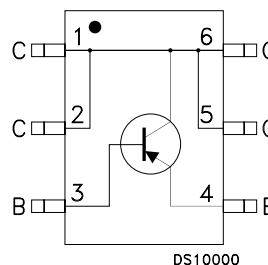
The device is manufactured in low voltage PNP Planar Technology by using a "Base Island" layout.

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



**SOT23-6L  
(TSOP6)**

### 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 $T_C = 25^\circ C$	1.2	W
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ C$
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$

STT818B

THERMAL DATA

$R_{thj-amb}^{(1)}$	Thermal Resistance Junction-ambient	Max	104.2	$^{\circ}C/W$
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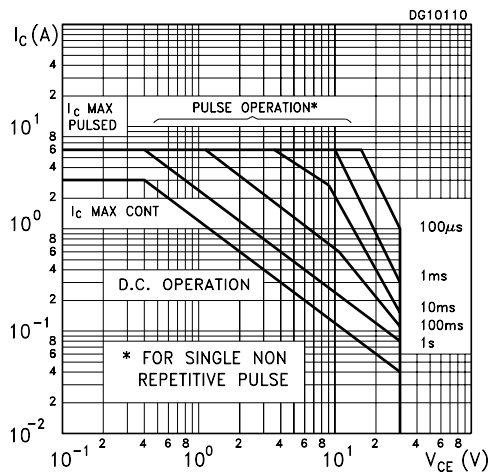
(1) Package mounted on FR4 pcb 25mm x 25mm.

ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25  $^{\circ}C$  unless otherwise specified)

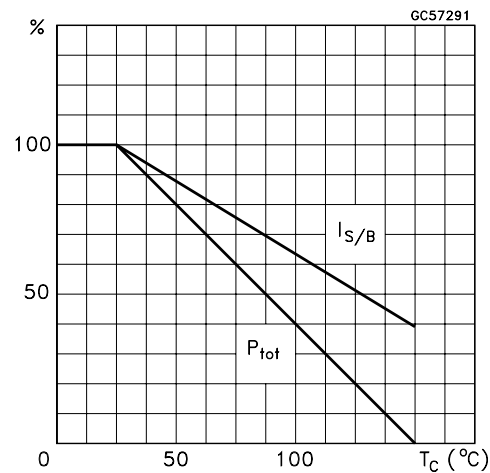
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = -30\text{ V}$ $V_{CB} = -30\text{ V}$ $T_C = 125\text{ }^{\circ}C$			-0.1 -20	$\mu A$ $\mu A$
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = -5\text{ V}$			-0.1	$\mu A$
$V_{(BR)CEO}^*$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

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle 1.5 %.

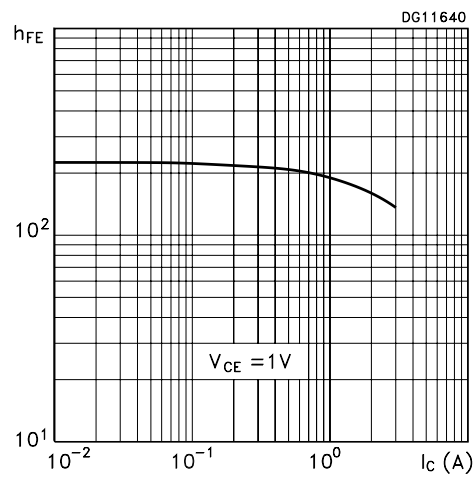
Safe Operating Area



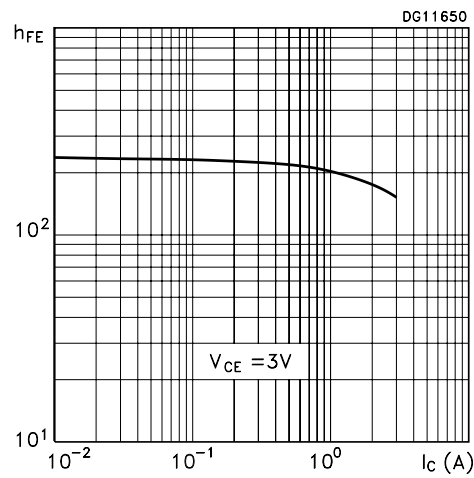
Derating Curve



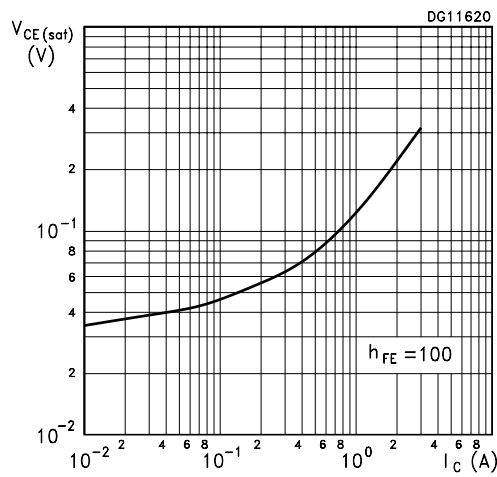
DC Current Gain



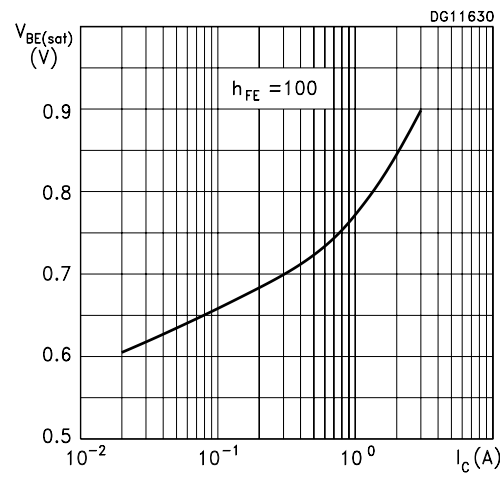
DC Current Gain



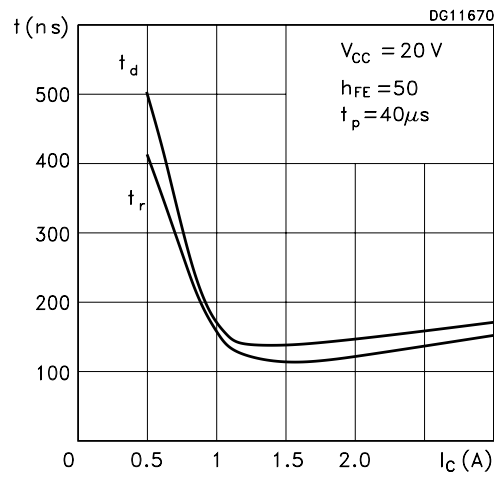
Collector-Emitter Saturation Voltage



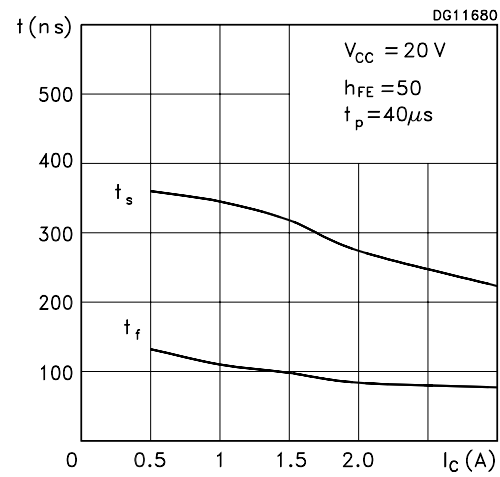
Base-Emitter Saturation Voltage



Switching Times Resistive Load

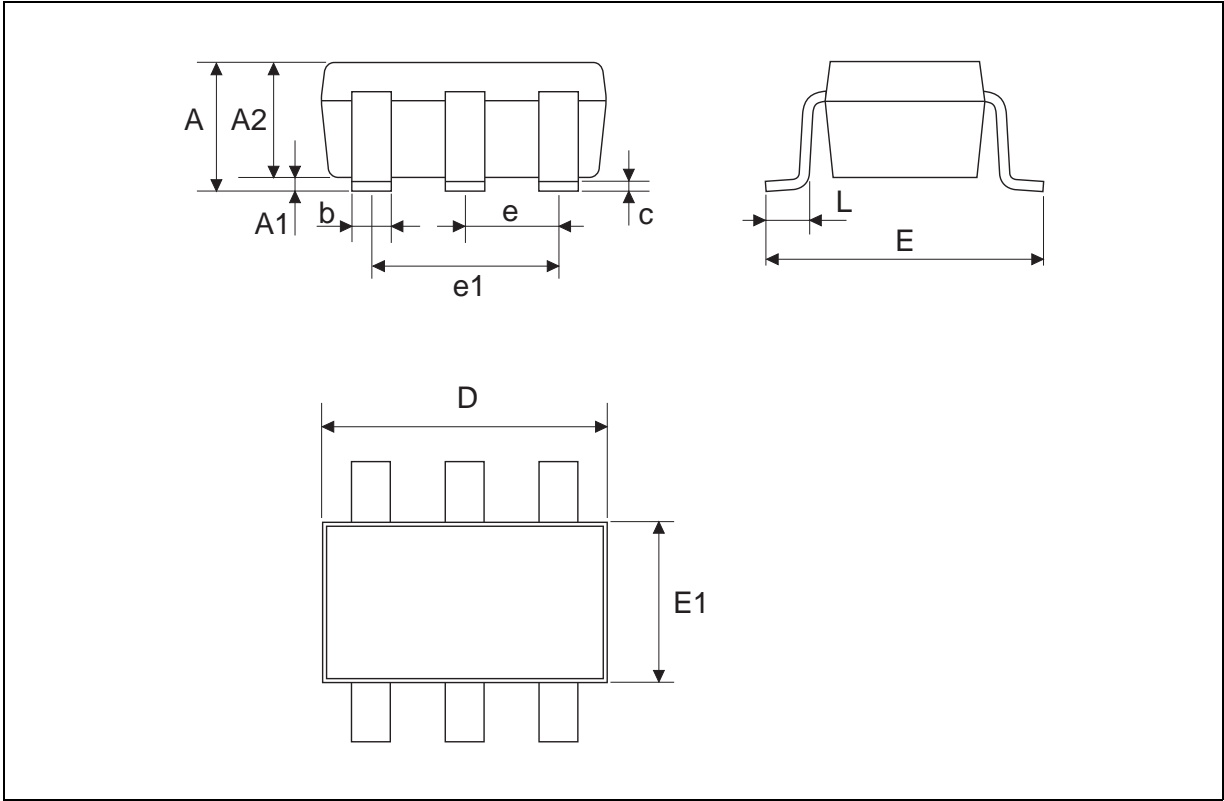


Switching Times Resistive Load



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	



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