



STN749

MEDIUM CURRENT, HIGH PERFORMANCE, LOW VOLTAGE PNP TRANSISTOR

Ordering Code	Marking
STN749	N749

- VERY LOW COLLECTOR TO EMITTER SATURATION VOLTAGE
- DC CURRENT GAIN, $h_{FE} > 100$
- 3 A CONTINUOUS COLLECTOR CURRENT
- SOT-223 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- AVAILABLE IN TAPE AND REEL PACKING

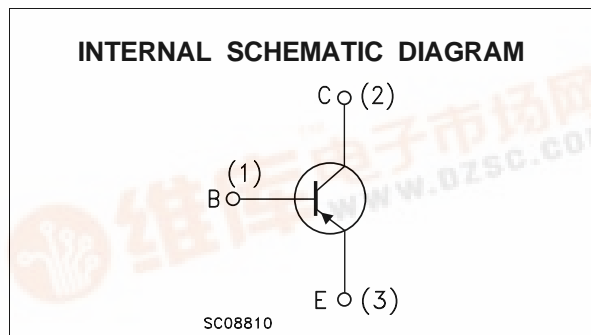
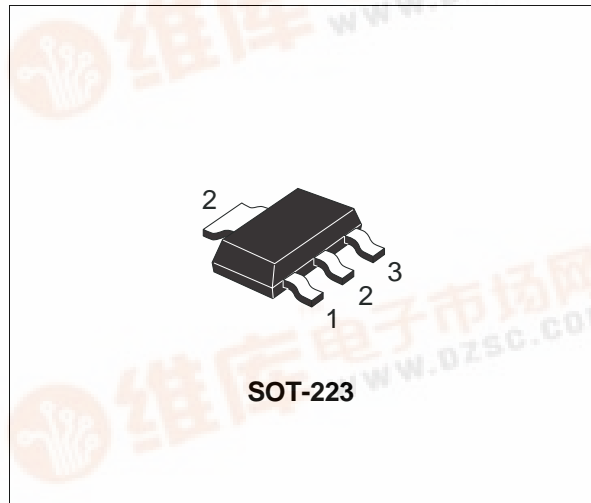
APPLICATIONS

- POWER MANAGEMENT IN PORTABLE EQUIPMENT
- VOLTAGE REGULATION IN BIAS SUPPLY CIRCUITS
- SWITCHING REGULATOR IN BATTERY CHARGER APPLICATIONS
- HEAVY LOAD DRIVER

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.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	-35	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	-25	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	-5	V
I_C	Collector Current	-3	A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)	-6	A
P_{tot}	Total Dissipation at $T_{amb} = 25$ °C	1.6	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C



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THERMAL DATA

$R_{thj-amb}$ •	Thermal Resistance Junction-Ambient	Max	78	°C/W
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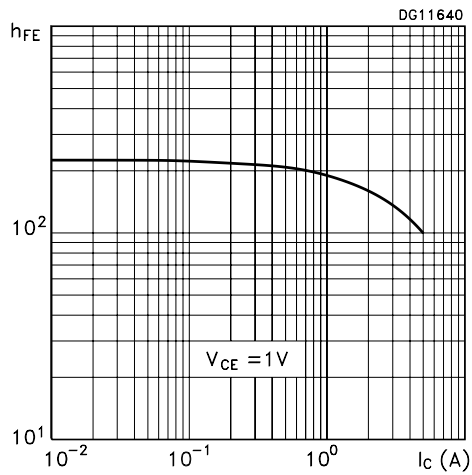
• Device mounted on a PCB area of 1 cm².

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

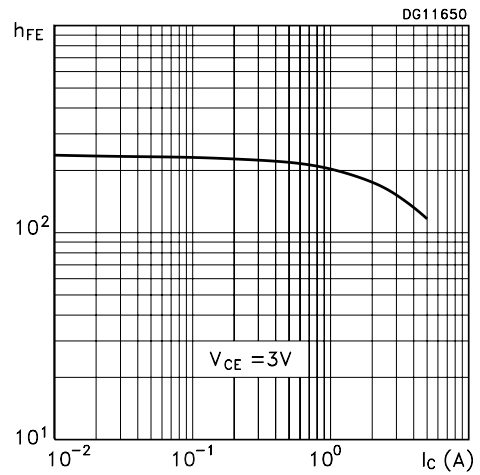
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = -30 V V _{CB} = -30 V T _j = 100 °C			-100 -10	nA μA
I_{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = -4 V			-100	nA
V _{(BR)CEO} *	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C = -10 mA	-25			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _E = 0)	I _C = -100 μA	-35			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _C = 0)	I _E = -100 μA	-5			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = -1A I _B = -100 mA I _C = -3A I _B = -300 mA			-0.3 -0.6	V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = -1 A I _B = -100 mA			-1.25	V
V _{BE(on)}	Base-Emitter Turn-On Voltage	I _C = -1 A V _{CE} = -2 V			-1	V
h _{FE} *	DC Current Gain	I _C = -50 mA V _{CE} = -2 V I _C = -1 A V _{CE} = -2 V I _C = -2 A V _{CE} = -2 V I _C = -6 A V _{CE} = -2V	70 100 75 15		300	

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

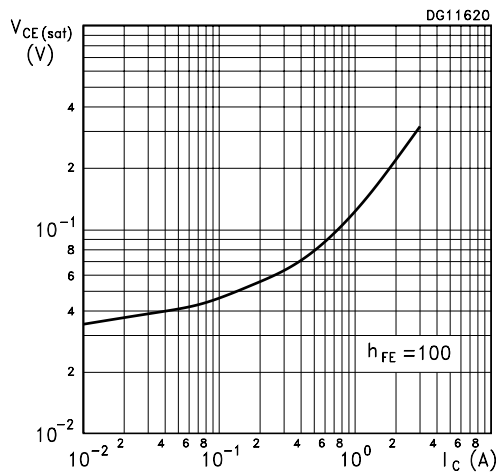
DC Current Gain



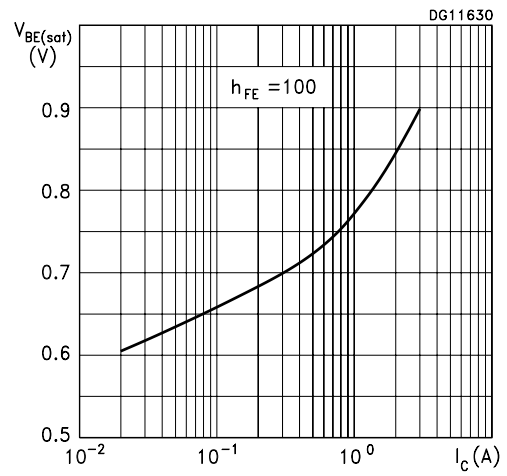
DC Current Gain



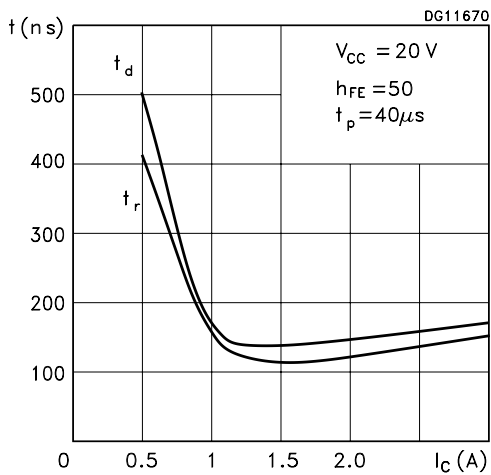
Collector-Emitter Saturation Voltage



Base-Emitter Saturation Voltage



Switching Times Resistive Load



Switching Times Resistive Load

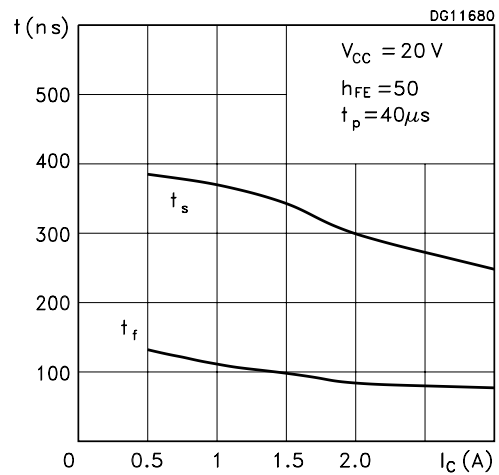
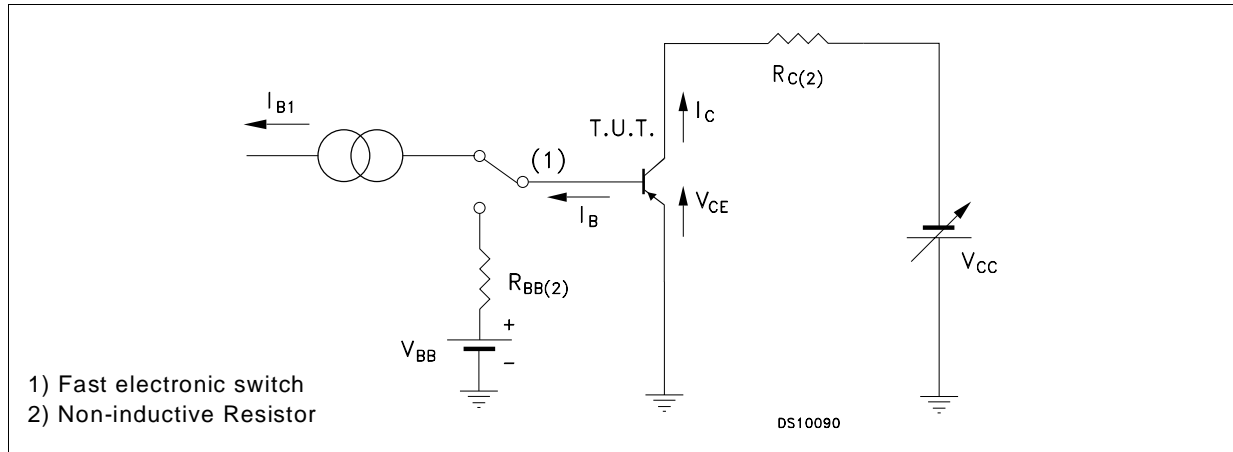
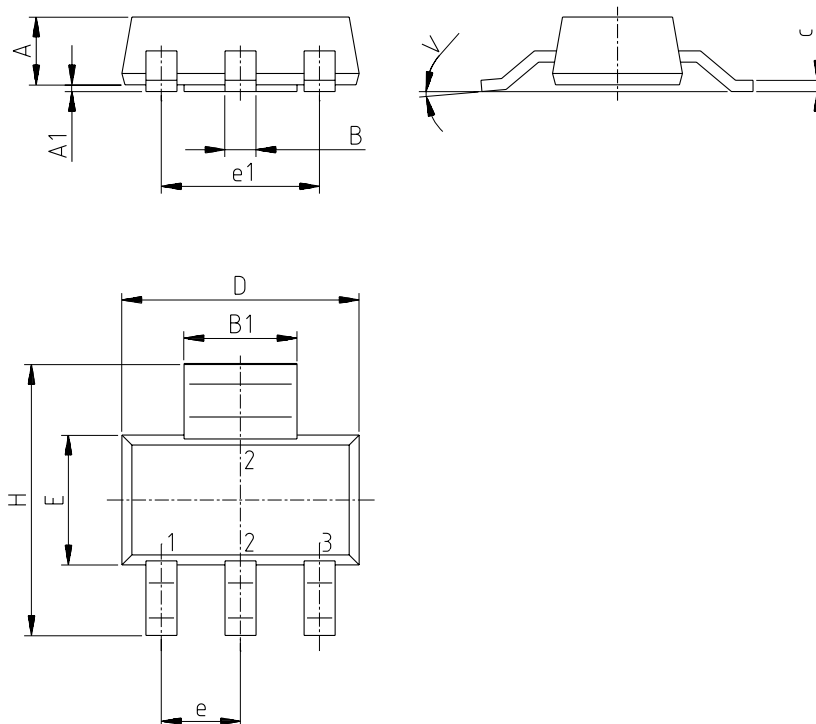


Figure 1: Resistive Load Switching Test Circuit.



SOT-223 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.80			0.071
B	0.60	0.70	0.80	0.024	0.027	0.031
B1	2.90	3.00	3.10	0.114	0.118	0.122
c	0.24	0.26	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
e		2.30			0.090	
e1		4.60			0.181	
E	3.30	3.50	3.70	0.130	0.138	0.146
H	6.70	7.00	7.30	0.264	0.276	0.287
V			10°			10°
A1		0.02				



P008B

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