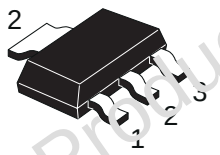
STN749

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

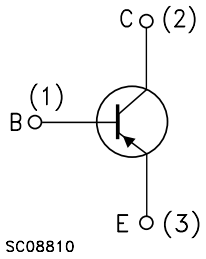


SOT-223

APPLICATIONS

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

INTERNAL SCHEMATIC DIAGRAM



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.

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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

THERMAL DATA

$R_{thj\text{-}amb}$ •	Thermal Resistance Junction-Ambient	Max	78	$^oC/W$

• Device mounted on a PCB area of 1 cm^2 .

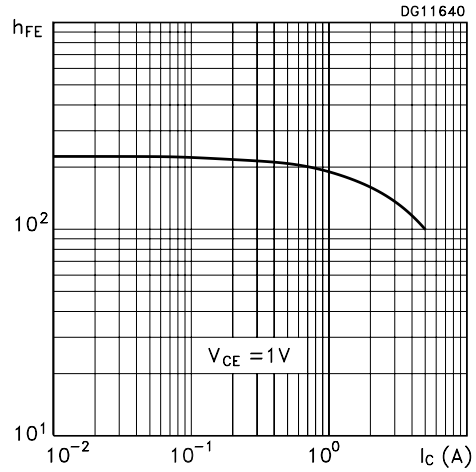
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

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 ^oC			-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	

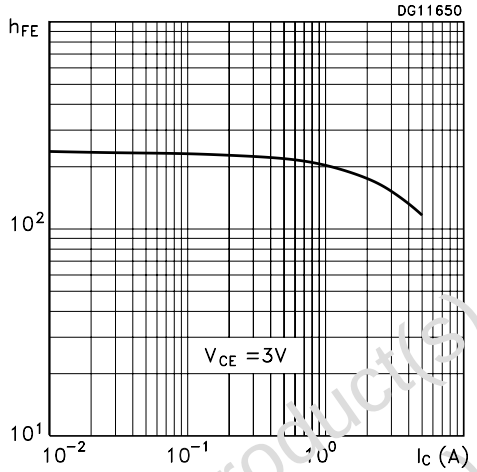
∗ Pulsed: Pulse duration = 300 µs, duty cycle ≤ 1.5 %

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Obsolete Product(s) - Obsolete Product(s)

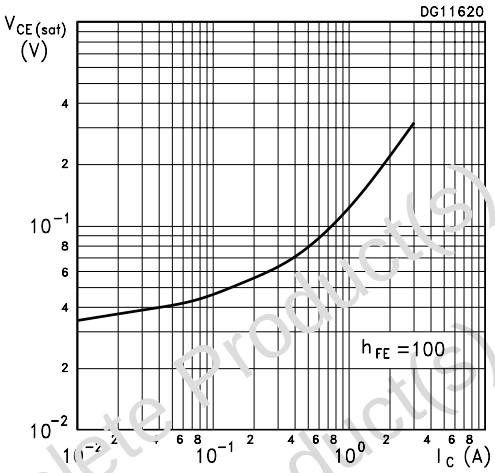
DC Current Gain



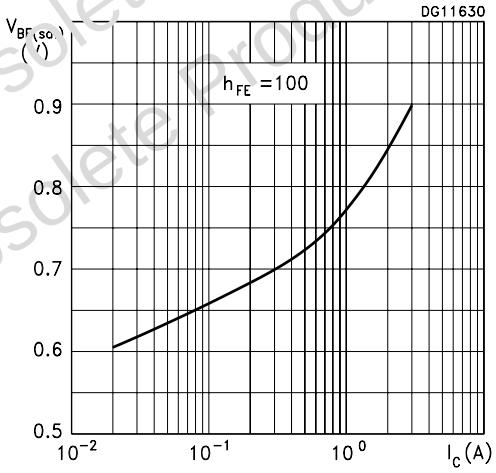
DC Current Gain



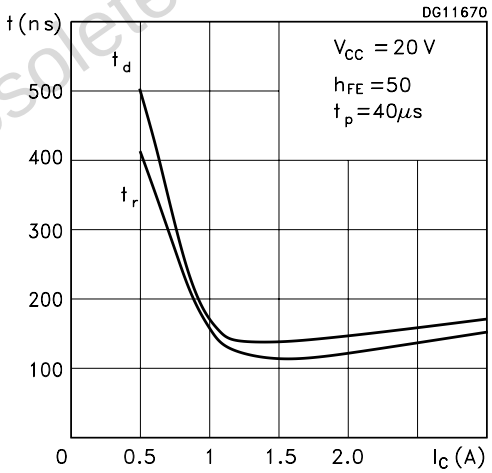
Collector-Emitter Saturation Voltage



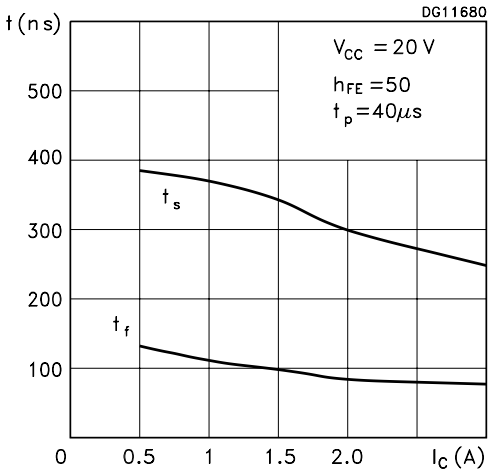
Base-Emitter Saturation Voltage



Switching Times Resistive Load

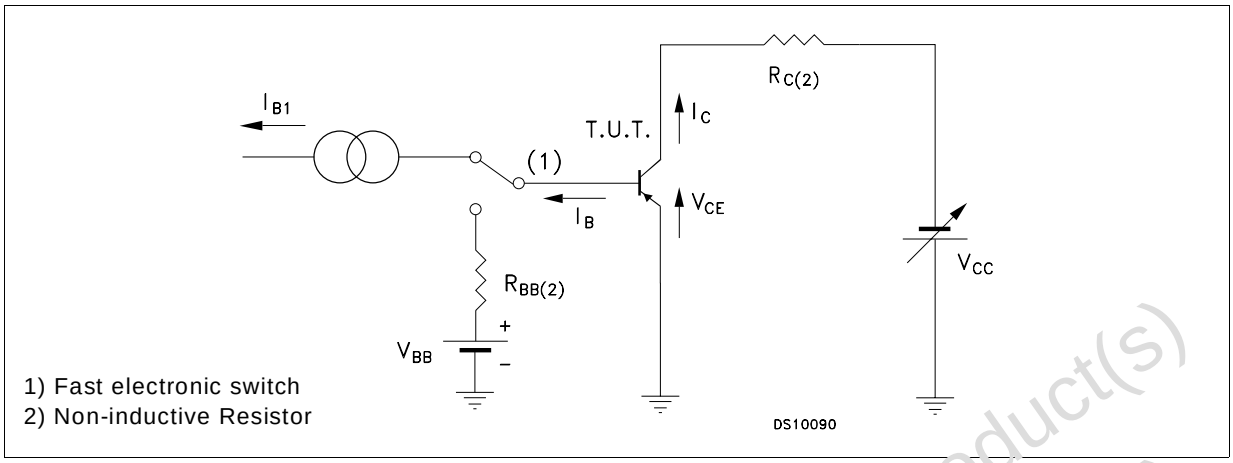


Switching Times Resistive Load



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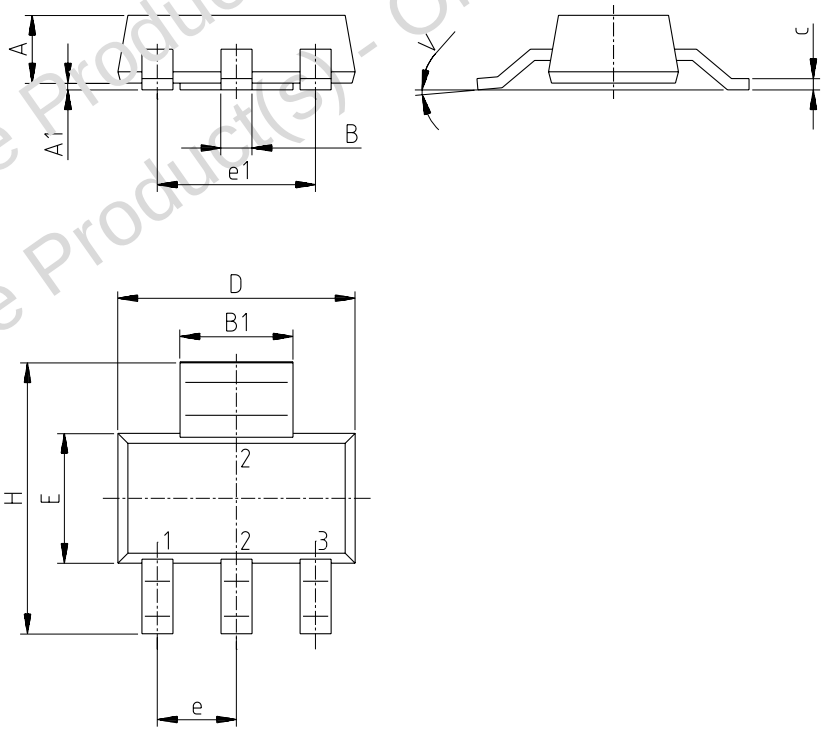
Figure 1: Resistive Load Switching Test Circuit.



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Obsolete Product(s) - Obsolete Product(s)

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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