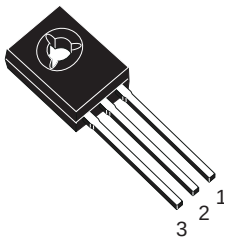
2SD882

NPN MEDIUM POWER TRANSISTOR

Features

- HIGH CURRENT
- LOW SATURATION VOLTAGE
- COMPLEMENT TO 2SB772



SOT-32
(TO-216)

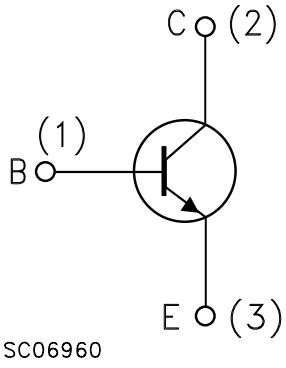
Applications

- VOLTAGE REGULATION
- RELAY DRIVER
- GENERIC SWITCH
- AUDIO POWER AMPLIFIER
- DC-DC CONVERTER

Description

The device is a NPN transistor manufactured by using planar Technology resulting in rugged high performance devices. The complementary PNP type is 2SB772.

Internal Schematic Diagram



Order Codes

Part Number	Marking	Package	Packing
2SD882	D882	SOT-32	TUBE

1 Absolute Maximum Ratings

Table 1. Absolute Maximum Rating

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	60	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	30	V
V_{EBO}	Collector-Base Voltage (I_C = 0)	5	V
I_C	Collector Current	3	A
I_{CM}	Collector Peak Current (t_P < 5ms)	6	A
I_B	Base Current	1	A
I_{BM}	Base Peak Current (t_P < 5ms)	2	A
P_{TOT}	Total dissipation at T_c = 25°C	12.5	W
T_{STG}	Storage Temperature	-65 to 150	°C
T_J	Max. Operating Junction Temperature	150	°C

Table 2. Thermal Data

Symbol	Parameter		Value	Unit
$R_{thJ\text{-}case}$	Thermal Resistance Junction-Case	Max	10	°C/W

2 Electrical Characteristics

Table 3. Electrical Characteristics (T_{CASE} = 25°C; unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} = 60 V			10	µA
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 30 V			100	µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			10	µA
$V_{(BR)CEO}$ *Note: 1*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = 10 mA	30			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_E = 0)	I_C = 100 µA	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_C = 0)	I_E = 100 µA	5			V
$V_{CE(sat)}$ *Note: 1*	Collector-Emitter Saturation Voltage	I_C = 1 A I_B = 50 mA I_C = 2 A I_B = 100 mA I_C = 3 A I_B = 150 mA			0.4 0.7 1.1	V V V
$V_{BE(sat)}$ *Note: 1*	Base-Emitter Saturation Voltage	I_C = 2 A I_B = 100 mA			1.2	V
hFE	DC Current Gain	I_C = 100 mA V_{CE} = 2 V I_C = 1 A V_{CE} = 2 V I_C = 3 A V_{CE} = 2 V	100 80 30		300	
fT	Transition Frequency	I_C = 0.1 A V_{CE} = 10 V		100		MHz

Note: 1 Pulsed duration = 300 µs, duty cycle ≤1.5%.

2.1 Typical characteristics

Figure 1. Reverse biased area

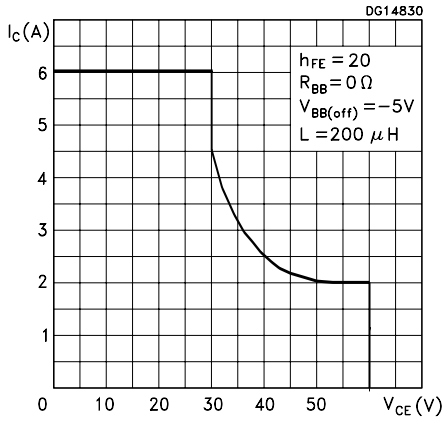


Figure 2. DC current gain

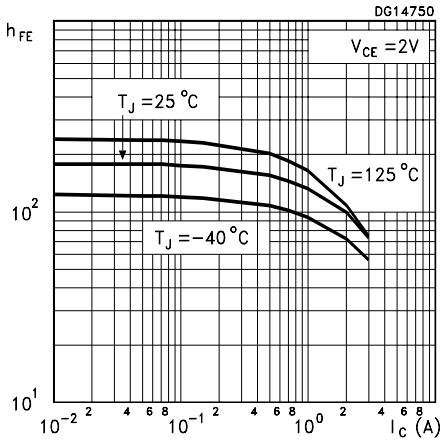


Figure 3. Collector-emitter saturation voltage

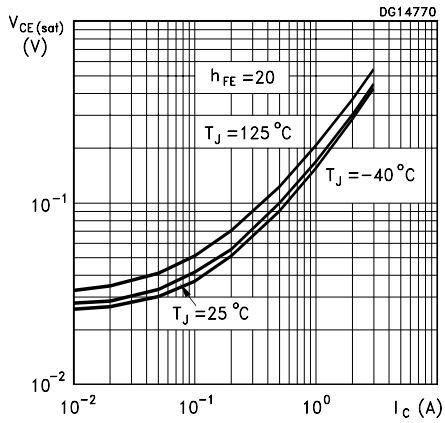
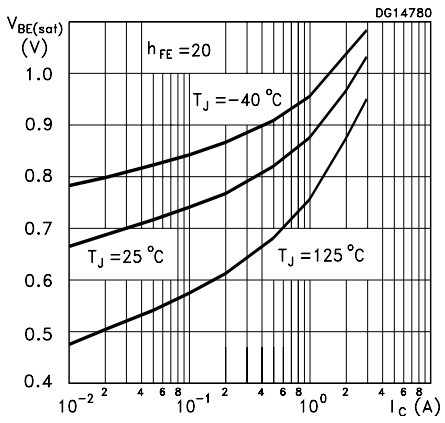


Figure 4. Base-emitter saturation voltage

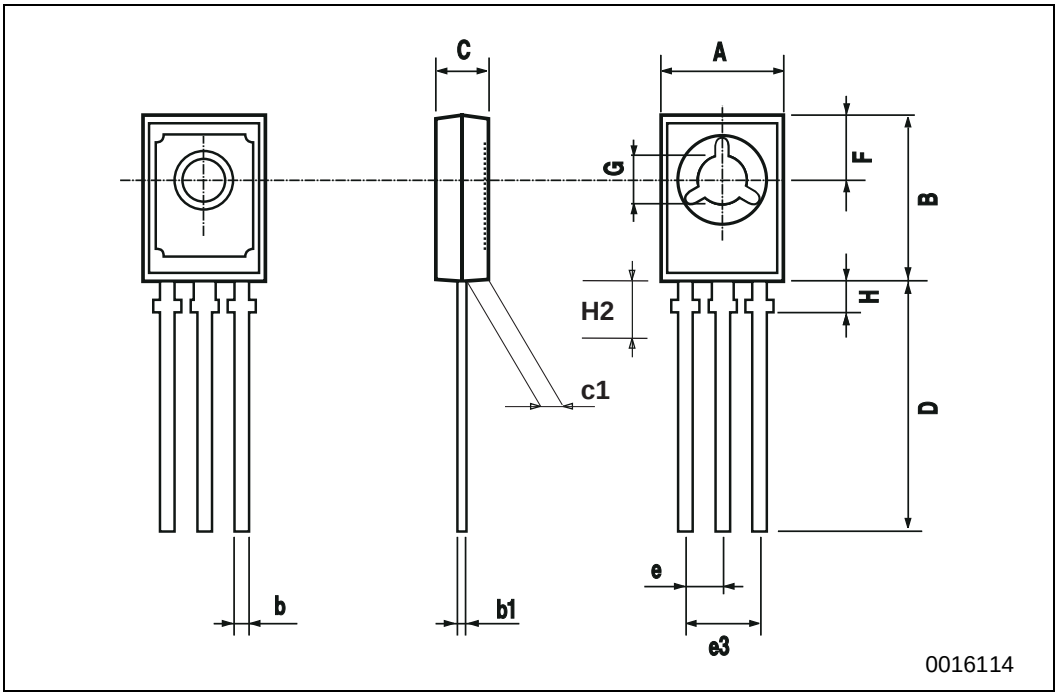


3 Package Mechanical Data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect . The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com

SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.040		0.106
c1	1.0		1.3	0.039		0.050
D	15.4		16.0	0.606		0.629
e		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100
H2		2.15			0.084	



4 Revision History

Date	Revision	Changes
09-Sep-2005	2	Final datasheet. New template