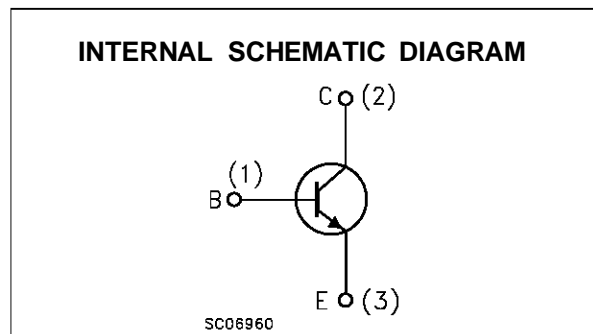
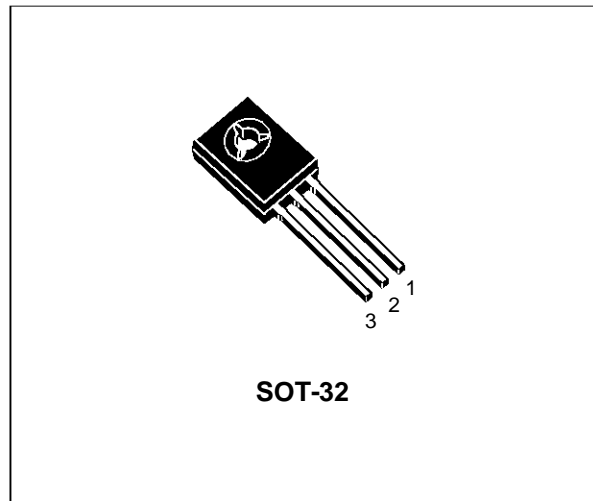


SILICON NPN TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

DESCRIPTION

The 2N5657 is a silicon epitaxial-base NPN transistor in Jedec SOT-32 plastic package. It is intended for use output amplifiers, low current, high voltage converters and AC line relays.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	375	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	350	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	0.5	A
I_{CM}	Collector Peak Current	1	A
I_B	Base Current	0.25	A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ C$	20	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ C$
T_j	Max. Operating Junction Temperature	150	$^\circ C$

THERMAL DATA

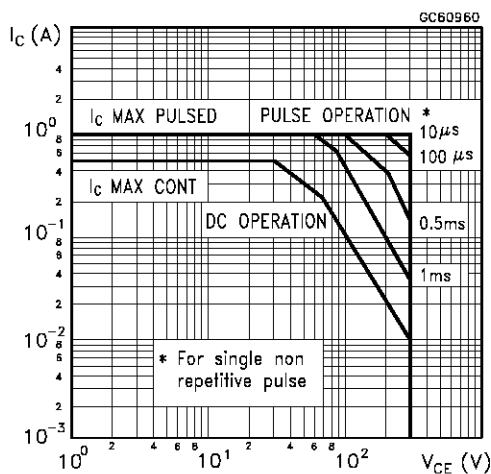
R _{thj-case}	Thermal Resistance Junction-case	Max	6.25	°C/W
-----------------------	----------------------------------	-----	------	------

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

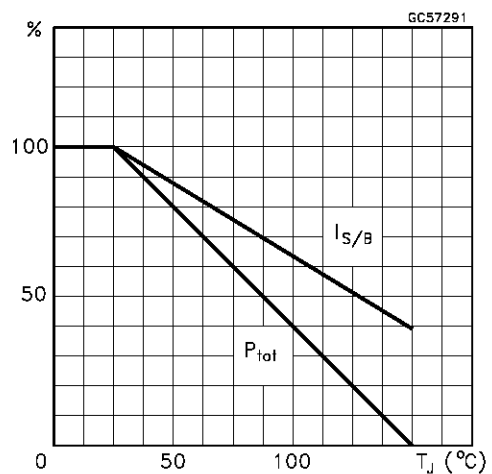
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CE} = 375 V			0.01	mA
I _{CEV}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = 350 V V _{CE} = 250 V T _C = 100 °C			0.1 1	mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 250 V			0.1	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 6 V			0.01	mA
V _{(BR)CEO} *	Collector-Emitter Breakdown Voltage	I _C = 1 mA	350			V
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage	I _C = 100 mA L = 50 mH	350			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 0.1 A I _B = 10 mA I _C = 0.25 A I _B = 25 mA I _C = 0.5 A I _B = 0.1 A			1 2.5 10	V V V
V _{BE} *	Base-Emitter Voltage	I _C = 0.1 A V _{CE} = 10 V			1	V
h _{FE} *	DC Current Gain	I _C = 50 mA V _{CE} = 10 V I _C = 0.1 A V _{CE} = 10 V I _C = 0.25 A V _{CE} = 10 V I _C = 0.5 A V _{CE} = 10 V	25 30 15 5		250	
h _{fe}	Small Signal Current Gain	I _C = 0.1 A V _{CE} = 10 V f = 1KHz	20			
f _T	Transition frequency	I _C = 50 mA V _{CE} = 10 V f = 10MHz	10			MHz
C _{CBO}	Collector Base Capacitance	V _{CB} = 10 V f = 100KHz			25	pF

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

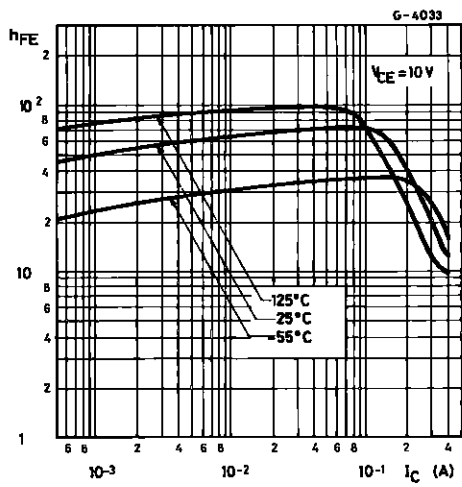
Safe Operating Area



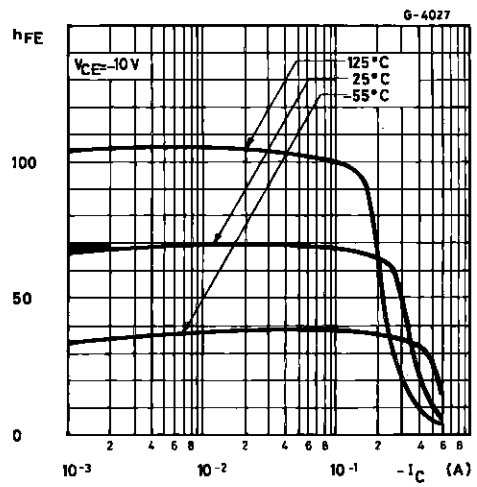
Derating Curve



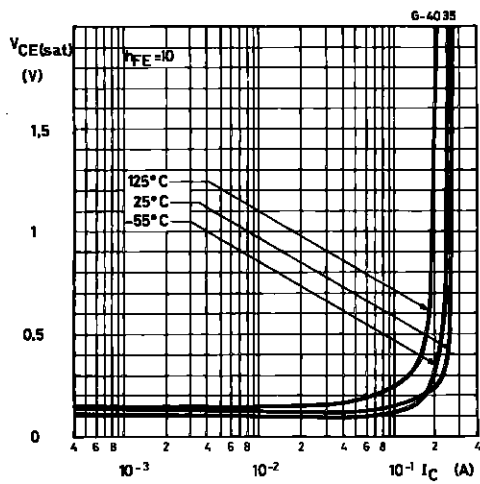
DC Current Gain (NPN type)



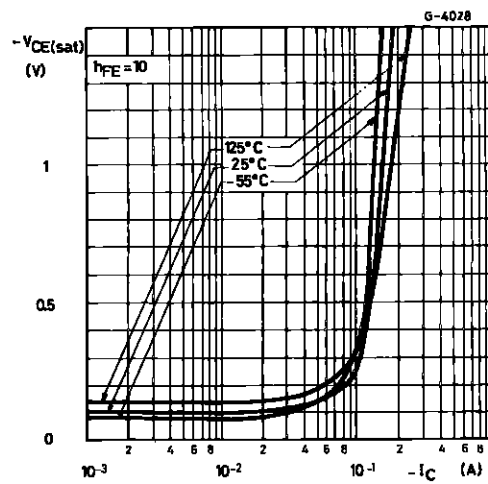
DC Current Gain (PNP type)



Collector Emitter Saturation Voltage (NPN type)

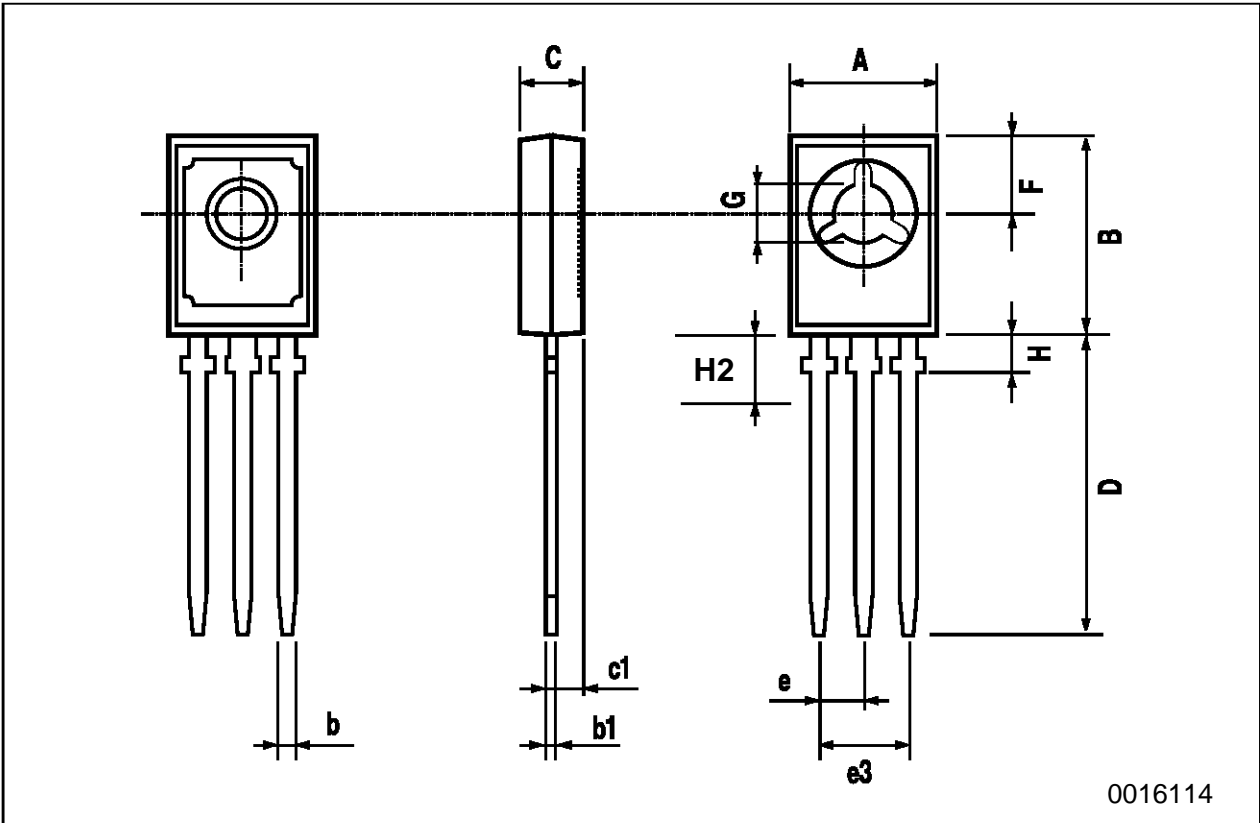


Collector Emitter Saturation Voltage (PNP type)



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	



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A
...