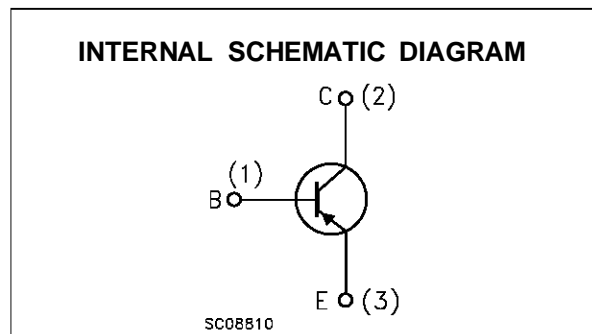
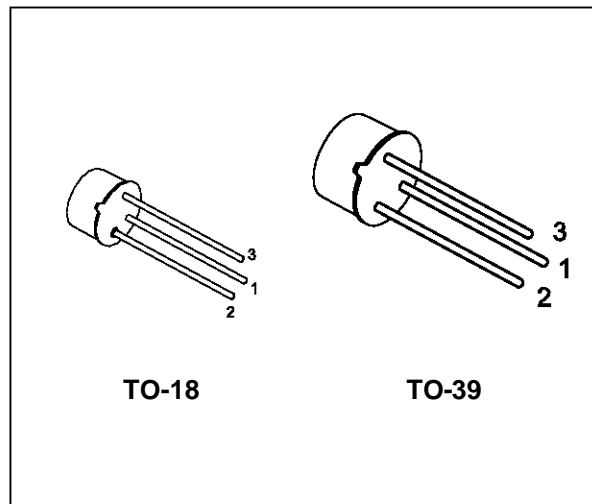


GENERAL PURPOSE AMPLIFIERS AND SWITCHES

DESCRIPTION

The 2N2905 and 2N2907 are silicon planar epitaxial PNP transistors in Jedec TO-39 (for 2N2905) and in Jedec TO-18 (for 2N2907) metal case. They are designed for high speed saturated switching and general purpose application.

- ☰ 2N2905 approved to CECC 50002-102,
- ☰ 2N2907 approved to CECC 50002-103 available on request.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	-60	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	-40	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	-5	V
I_C	Collector Current	-0.6	A
P_{tot}	Total Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ for 2N2905 for 2N2907 at $T_{case} \leq 25\text{ }^\circ\text{C}$ for 2N2905 for 2N2907	0.6	W
		0.4	W
		3	W
		1.8	W
T_{stg}	Storage Temperature	-65 to 200	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	200	$^\circ\text{C}$

2N2905/2N2907

THERMAL DATA

			TO-39	TO-18	
R _{thj-case}	Thermal Resistance Junction-Case	Max	58.3	97.3	°C/W
R _{thj-amb}	Thermal Resistance Junction-Ambient	Max	292	437.5	°C/W

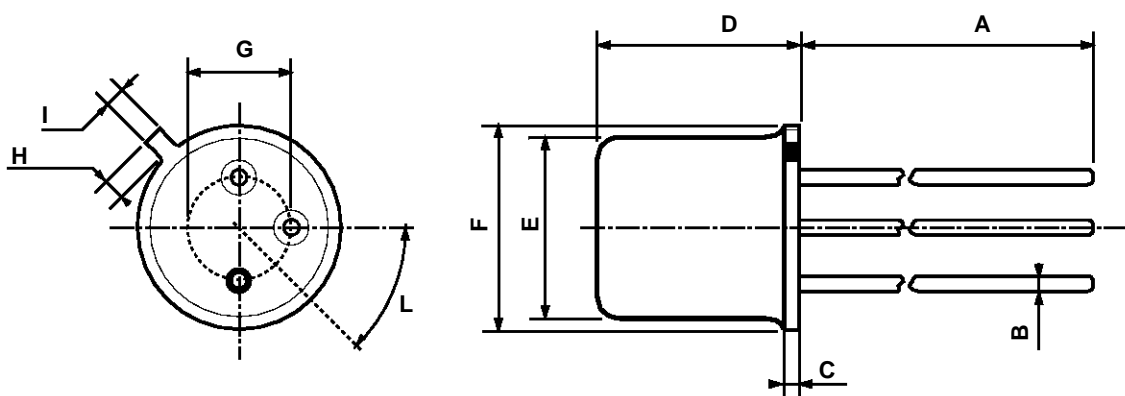
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = -50 V V _{CB} = -50 V T _{case} = 150 °C			-20 -20	nA μA
I _{CEX}	Collector Cut-off Current (V _{BE} = -0.5V)	V _{CE} = -30 V			-50	nA
I _{BEX}	Base Cut-off Current (V _{BE} = -0.5V)	V _{CE} = -30 V			-50	nA
V _{(BR)CBO} *	Collector-Base Breakdown Voltage (I _E = 0)	I _C = -10 μA	-60			V
V _{(BR)CEO} *	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C = -10 mA	-40			V
V _{(BR)EBO} *	Emitter-Base Breakdown Voltage (I _C = 0)	I _E = -10 μA	-5			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = -150 mA I _B = -15 mA I _C = -500 mA I _B = -50 mA			-0.4 -1.6	V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	I _C = -150 mA I _B = -15 mA I _C = -500 mA I _B = -50 mA			-1.3 -2.6	V V
h _{FE} *	DC Current Gain	I _C = -0.1 mA V _{CE} = -10 V I _C = -1 mA V _{CE} = -10 V I _C = -10 mA V _{CE} = -10 V I _C = -150 mA V _{CE} = -10 V I _C = -500 mA V _{CE} = -10 V	35 50 75 100 30		300	
f _T	Transition Frequency	V _{CE} = -20 V f = 100 MHz I _C = -50 mA	200			MHz
C _{EBO}	Emitter Base Capacitance	I _C = 0 V _{EB} = -2 V f = 1MHz			30	pF
C _{CBO}	Collector Base Capacitance	I _E = 0 V _{CB} = -10 V f = 1MHz			8	pF
t _d	Delay Time	V _{CC} = -30 V I _C = -150 mA I _{B1} = -15 mA			10	ns
t _r	Rise Time	V _{CC} = -30 V I _C = -150 mA I _{B1} = -15 mA			40	ns
t _s	Storage Time	V _{CC} = -6 V I _C = -150 mA I _{B1} = -I _{B2} = -15 mA			80	ns
t _f	Fall Time	V _{CC} = -6 V I _C = -150 mA I _{B1} = -I _{B2} = -15 mA			30	ns

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 1 %

TO-18 MECHANICAL DATA

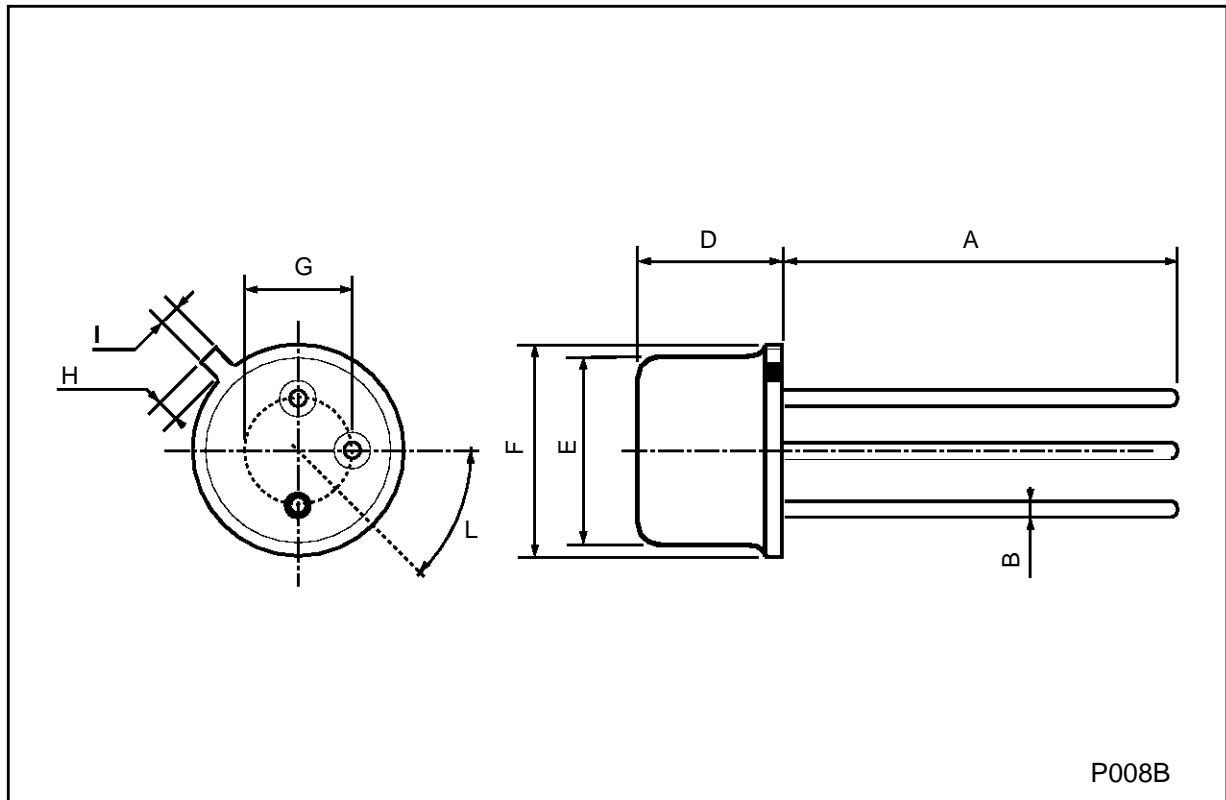
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



0016043

TO-39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



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 - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A

...