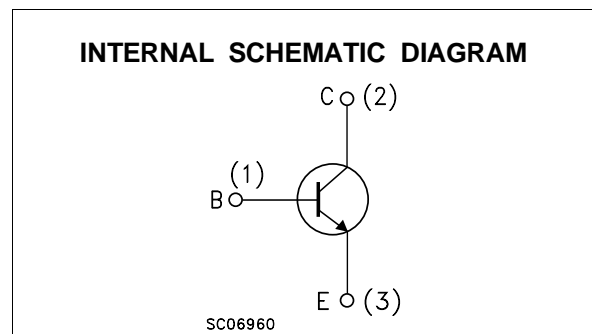
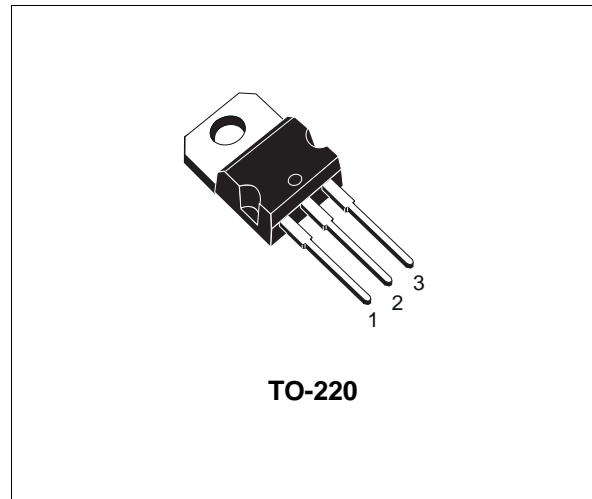


## SILICON NPN SWITCHING TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

**DESCRIPTION**

The MJE13005 is a silicon multiepitaxial mesa NPN transistor in Jedec TO-220 plastic package particularly intended for switch-mode applications.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CEV}$	Collector-Emitter Voltage	700	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	400	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	9	V
$I_C$	Collector Current	4	A
$I_{CM}$	Collector Peak Current	8	A
$I_B$	Base Current	2	A
$I_{BM}$	Base Peak Current	4	A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$	75	W
$T_{stg}$	Storage Temperature	-65 to +150	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$

## MJE13005

### THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.67	$^{\circ}C/W$
----------------	----------------------------------	-----	------	---------------

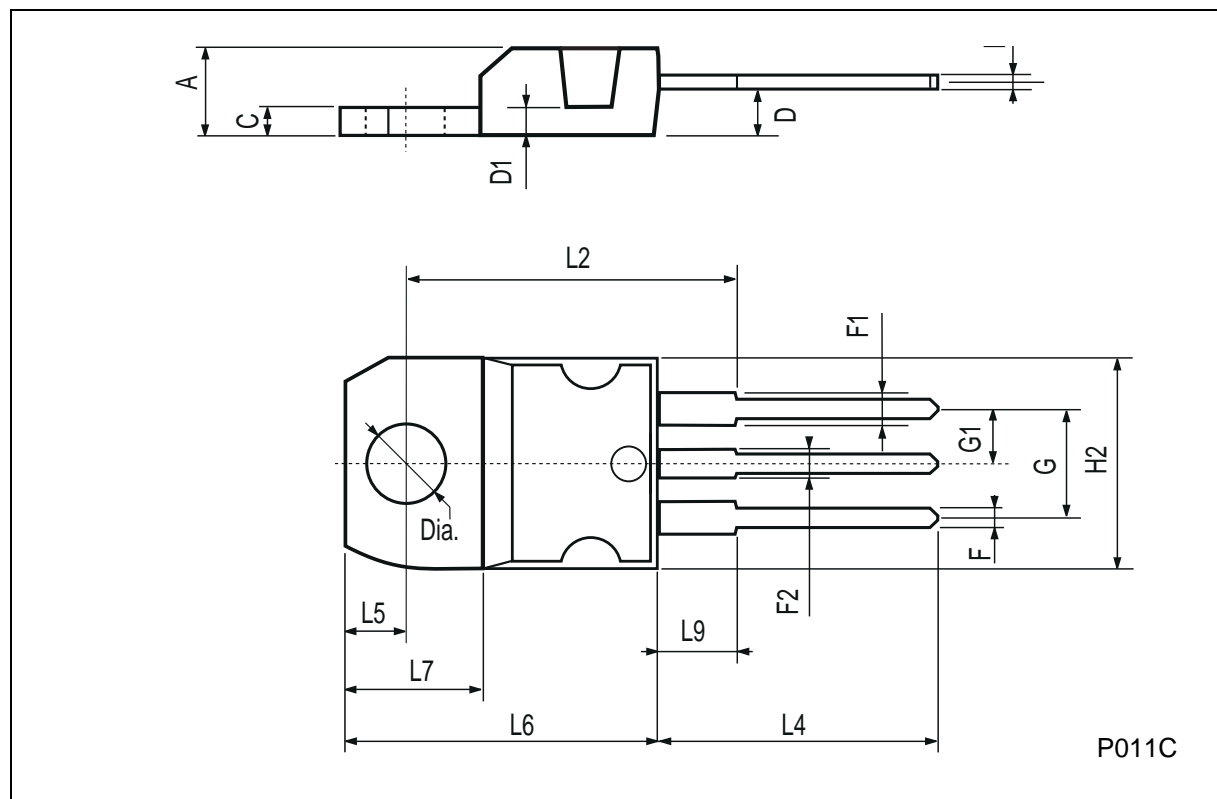
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEV}$	Collector Cut-off Current ( $V_{BE} = -1.5V$ )	$V_{CE} = 700V$ $V_{CE} = 700V$ $T_{case} = 100^{\circ}C$			1 5	mA mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 9V$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 10mA$	400			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 1A$ $I_B = 0.2A$ $I_C = 2A$ $I_B = 0.5A$ $I_C = 4A$ $I_B = 1A$			0.5 0.6 1	V V V
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 1A$ $I_B = 0.2A$ $I_C = 2A$ $I_B = 0.5A$			1.2 1.6	V V
$h_{FE}$	DC Current Gain	$I_C = 1A$ $V_{CE} = 5V$ $I_C = 2A$ $V_{CE} = 5V$	10 8	30	60 40	V V
$t_{on}$ $t_s$ $t_f$	Turn-on Time Storage Time Fall Time	$I_C = 2A$ $I_{B1} = -I_{B2} = 0.4A$ $V_{CC} = 250V$			0.8 4 0.9	$\mu s$ $\mu s$ $\mu s$

\* Pulsed: Pulse duration = 300 $\mu s$ , duty cycle = 1.5 %

## TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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.

© 1995 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -  
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A

...