

NPN SWITCHING TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- VERY LOW SATURATION VOLTAGE
- FAST TURN-OFF AND TURN-ON

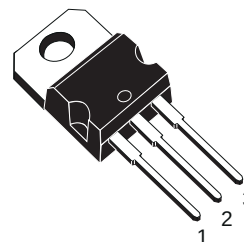
APPLICATIONS:

- SWITCHING REGULATORS
- SOLENOID / RELAY DRIVERS

DESCRIPTION

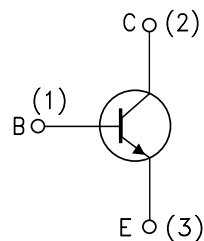
High speed transistor suited for low voltage applications.

High frequency and efficiency converters switching regulators motor control.



TO-220

INTERNAL SCHEMATIC DIAGRAM



SC06960

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	400	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	200	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	10	A
I_{CM}	Collector Peak Current ($t_p < 5ms$)	15	A
I_B	Base Current	2	A
I_{BM}	Base Peak Current ($t_p < 5ms$)	4	A
P_{tot}	Total Dissipation at $T_c < 25^\circ C$	85	W
P_{tot}	Total Dissipation at $T_c < 60^\circ C$	65	W
T_{stg}	Storage Temperature	-65 to +175	$^\circ C$
T_j	Max. Operating Junction Temperature	175	$^\circ C$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.76	°C/W
-----------------------	----------------------------------	-----	------	------

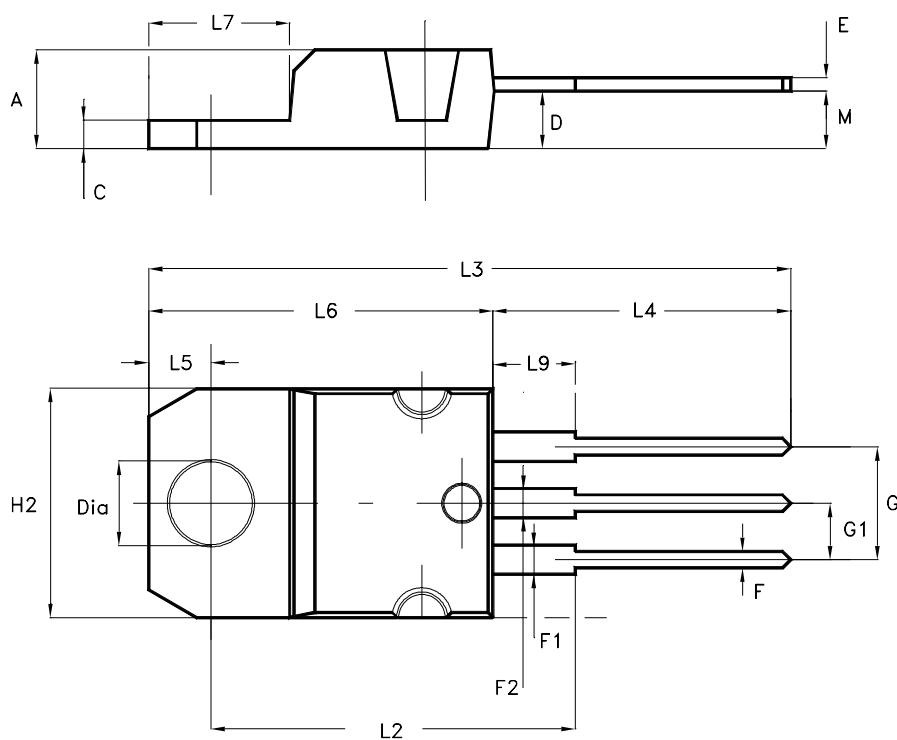
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CER}	Collector Cut-off Current (R _{BE} = 50Ω)	V _{CE} = 400V T _c = 125°C			3	mA
I _{CEX}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = 400V T _c = 125°C			1	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 0.2 A	200			V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	I _E = 50 mA	7		30	V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 3 A I _B = 0.3 A I _C = 6 A I _B = 0.6 A			0.7 1.5	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 6 A I _B = 0.6 A			2	V
t _{on} t _s t _f	RESISTIVE LOAD Storage Time Fall Time Turn-on Time	V _{CC} = 150 V I _C = 6 A V _{BE} = - 6 V I _{B1} = 0.6 A R _{BB} = 5 Ω I _{B2} = - 1.2 A			1 1.5 0.25	μs μs μs
t _s t _f	INDUCTIVE LOAD Storage Time Fall Time	V _{CC} = 150 V I _C = 6 A I _{B1} = 0.6 A V _{BE} = - 5 V L _B = 3 μH T _c = 125 °C			3 0.2	μs μs

* Pulsed: Pulse duration = 300μs, duty cycle = 2 %

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		0.052
D	2.40		2.72	0.094		0.107
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		0.202
G1	2.40		2.70	0.094		0.106
H2	10.00		10.40	0.394		0.409
L2		16.40			0.645	
L4	13.00		14.00	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.20		6.60	0.244		0.260
L9	3.50		3.93	0.137		0.154
M		2.60			0.102	
DIA.	3.75		3.85	0.147		0.151



P011CI

Information furnished is believed to be accurate and reliable. However, STMicroelectronics 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 STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 2003 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>