

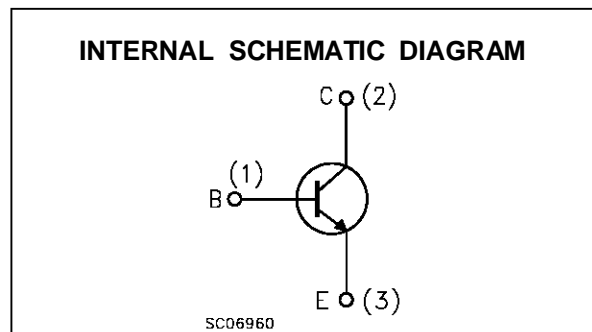
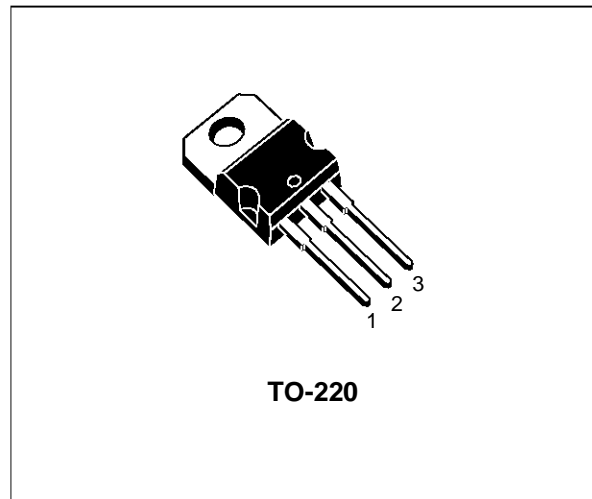
SILICON NPN SWITCHING TRANSISTOR

- VERY LOW SATURATION VOLTAGE
- FAST TURN-OFF AND TURN-ON

DESCRIPTION

High speed transistor suited for low voltage applications.

High frequency and efficiency converters switching regulators motor control.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	240	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	120	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	12	A
I_{CM}	Collector Peak Current	20	A
I_B	Base Current	4	A
I_{BM}	Base Peak Current	6	A
P_{tot}	Total Dissipation at $T_c < 25\text{ }^\circ\text{C}$	85	W
P_{tot}	Total Dissipation at $T_c < 60\text{ }^\circ\text{C}$	65	W
T_{stg}	Storage Temperature	-65 to +175	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	175	$^\circ\text{C}$

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.76	$^{\circ}C/W$
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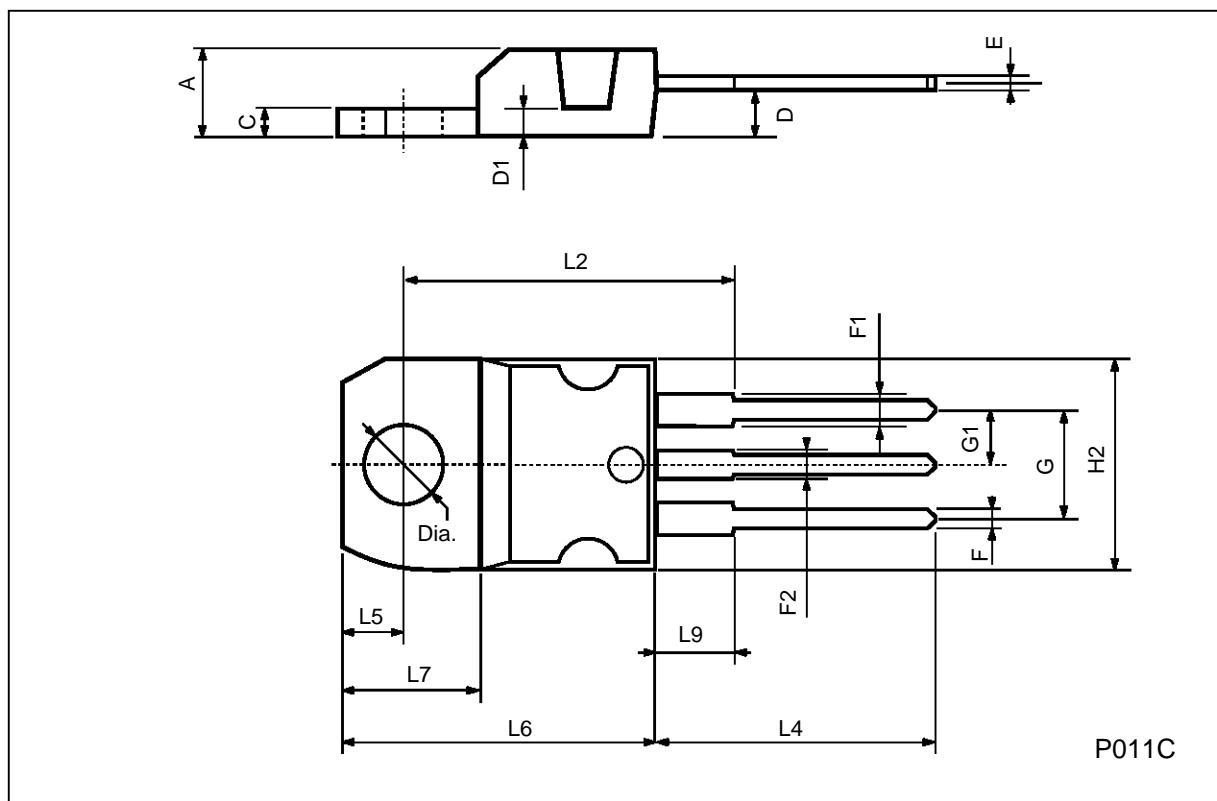
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current ($R_{BE} = 50\Omega$)	$V_{CE} = 240V$ $T_c = 125^{\circ}C$			3	mA
I_{CEX}	Collector Cut-off Current	$V_{CE} = 240V$ $V_{BE} = -1.5V$ $T_c = 125^{\circ}C$			1	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5V$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 0.2mA$ $L = 25mH$	120			V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	$I_E = 50mA$	7		30	V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 4A$ $I_B = 0.4A$ $I_C = 8A$ $I_B = 0.8A$			0.7 1.5	V V
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 8A$ $I_B = 0.8A$			2	V
t_{on} t_s t_f	RESISTIVE LOAD Turn-on Time Storage Time Fall Time	$V_{CC} = 90V$ $I_C = 8A$ $V_{BE} = -6V$ $I_{B1} = 0.8A$ $R_{BB} = 3.75\Omega$		0.4 0.5 0.12	0.8 1.2 0.25	ms μs μs
t_s t_f t_s t_f	INDUCTIVE LOAD Storage time Fall Time Storage Time Fall Time	$V_{CC} = 90V$ $I_C = 8A$ $I_{B1} = 0.8A$ $V_{BE} = -5V$ $L_B = 1\mu H$ $V_{CC} = 90V$ $I_C = 8A$ $I_{B1} = 0.8A$ $V_{BE} = -5V$ $L_B = 1\mu H$ $T_j = 125^{\circ}C$		0.6 0.04	2 0.15	μs μs μs μs

* Pulsed: Pulse duration = 300 μs , 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		0.051
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



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