

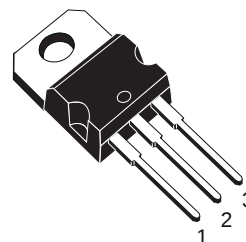
COMPLEMENTARY SILICON POWER TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

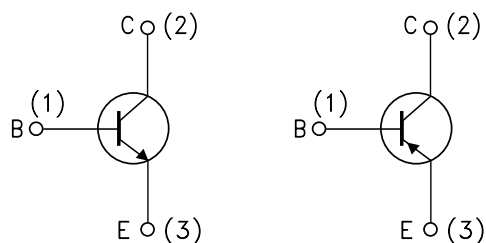
The TIP41A, TIP41B and TIP41C are silicon epitaxial-base NPN power transistors in Jedec TO-220 plastic package, intended for use in medium power linear and switching applications.

The complementary PNP types are TIP42A, TIP42B and TIP42C.



TO-220

INTERNAL SCHEMATIC DIAGRAM



SC06960

SC08810

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value				Unit
		NPN	TIP41A	TIP41B	TIP41C	
		PNP	TIP42A	TIP42B	TIP42C	
V _{CBO}	Collector-Base Voltage (I _E = 0)		60	80	100	V
V _{CEO}	Collector-Emitter Voltage (I _B = 0)		60	80	100	V
V _{EBO}	Emitter-Base Voltage (I _C = 0)		5			V
I _C	Collector Current		6			A
I _{CM}	Collector Peak Current		10			A
I _B	Base Current		3			A
P _{tot}	Total Dissipation at T _{case} ≤ 25 °C T _{amb} ≤ 25 °C		65			W
			2			W
T _{stg}	Storage Temperature		-65 to 150			°C
T _j	Max. Operating Junction Temperature		150			°C

TIP41A/TIP41B/TIP41C/TIP42A/TIP42B/TIP42C

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.92	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	62.5	°C/W

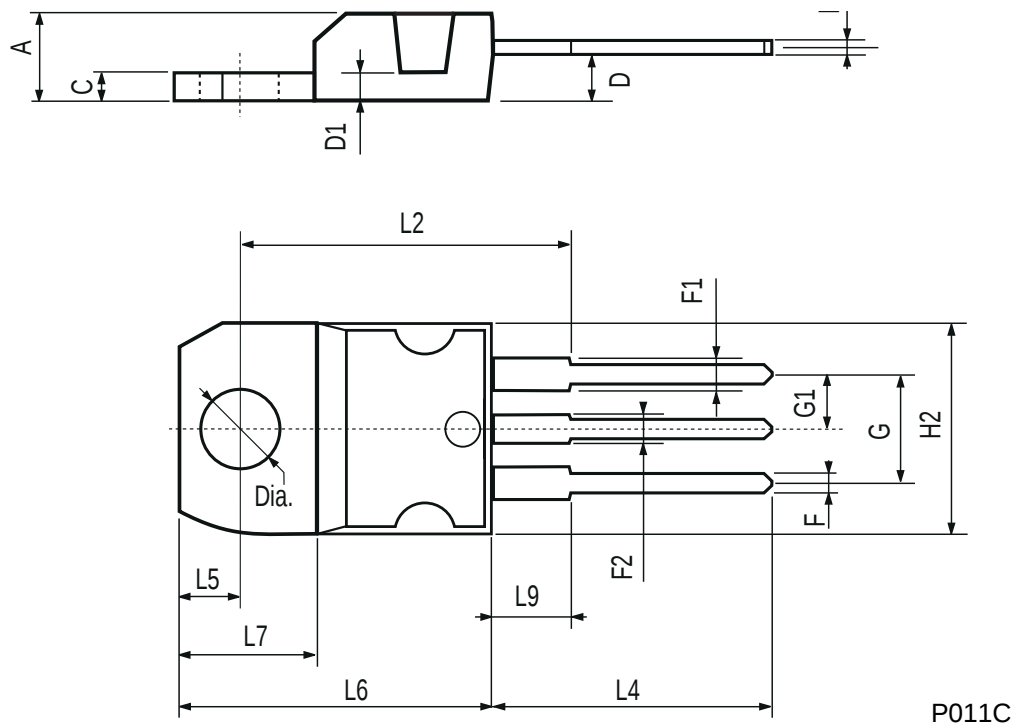
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _B = 0)	for TIP41A/42A V _{CE} = 30 V for TIP41B/41C/42B/42C V _{CB} = 60 V			0.7 0.7	mA mA
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	for TIP41A/42A V _{CE} = 60 V for TIP41B/42B V _{CE} = 80 V for TIP41C/42C V _{CE} = 100 V			0.4 0.4 0.4	mA mA 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 = 30 mA for TIP41A/42A for TIP41B/42B for TIP41C/42C	60 80 100			V V V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 6 A I _B = 0.6 A			1.5	V
V _{BE(on)} *	Base-Emitter Voltage	I _C = 6 A V _{CE} = 4 V			2	V
h _{FE} *	DC Current Gain	I _C = 0.3 A V _{CE} = 4 V I _C = 3 A V _{CE} = 4 V	30 15		75	
h _{fe}	Small Signal Current Gain	I _C = 0.5 A V _{CE} = 10 V f = 1 KHz I _C = 0.5 A V _{CE} = 10 V f = 1 MHz	20 3			

* Pulsed: Pulse duration = 300 µs, duty cycle ≤ 2 %
For PNP types voltage and current values are negative.

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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