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- Designed for Complementary Use with TIP135, TIP136 and TIP137
- 70 W at 25°C Case Temperature
- 8 A Continuous Collector Current
- Minimum h_{FE} of 1000 at 4 V, 4 A



Pin 2 is in electrical contact with the mounting base.

MDTRACA

absolute maximum ratings at 25°C case temperature (unless otherwise noted)

RATING	SYMBOL	VALUE	UNIT		
Collector-base voltage (I _E = 0)	TIP130 TIP131 TIP132	V _{CBO}	60 80 100	V	
Collector-emitter voltage (I _B = 0)	V _{CEO}	60 80 100	V		
Emitter-base voltage	V _{EBO}	5	V		
Continuous collector current	I _C	CO 8	A		
Peak collector current (see Note 1)	I _{CM}	12	Α		
Continuous base current	I _B	0.3	A		
Continuous device dissipation at (or below) 25°C case temperature (see Note 2)	P _{tot}	70	W		
Continuous device dissipation at (or below) 25°C free air temperature (see Note	P _{tot}	2	W		
Unclamped inductive load energy (see Note 4)	½Ll _C ²	75	mJ		
Operating junction temperature range			-65 to +150	°C	
Storage temperature range	T _{stg}	-65 to +150	°C		
Lead temperature 3.2 mm from case for 10 seconds	TL	260	°C		

NOTES: 1. This value applies for $t_p \leq 0.3$ ms, duty cycle $\leq 10\%.$

2. Derate linearly to 150°C case temperature at the rate of 0.56 W/°C.

3. Derate linearly to 150°C free air temperature at the rate of 16 mW/°C.

4. This rating is based on the capability of the transistor to operate safely in a circuit of: L = 20 mH, $I_{B(on)}$ = 5 mA, R_{BE} = 100 Ω , $V_{BE(off)}$ = 0, R_S = 0.1 Ω , V_{CC} = 20 V.

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PRODUCT INFORMATION

Information is current as of publication date. Products conform to specifications in accordance with the terms of Power Innovations standard warranty. Production processing does not necessarily include testing of all parameters.



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electrical characteristics at 25°C case temperature

	PARAMETER	TO COM	TEST	CONDITIONS		MIN	TYP	MAX	UNI
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C = 30 mA	l _B = 0	(see Note 5)	TIP130 TIP131 TIP132	60 80 100			V
I _{CEO}	Collector-emitter cut-off current	$V_{CE} = 30 V$ $V_{CE} = 40 V$ $V_{CE} = 50 V$	$I_{B} = 0$ $I_{B} = 0$ $I_{B} = 0$	MMM.T.	TIP130 TIP131 TIP132	WT.MO		0.5 0.5 0.5	mA
I _{CBO}	Collector cut-off current	$V_{CB} = 60 V V_{CB} = 80 V V_{CB} = 100 V V_{CB} = 60 V V_{CB} = 80 V V_{CB} = 100 V $	$I_E = 0$	T _C = 100°C T _C = 100°C T _C = 100°C	TIP130 TIP131 TIP132 TIP130 TIP131 TIP132	COM.T COM.T X.COM	N 1 N 1 N 1 N	0.2 0.2 0.2 1 1 1	mA
I _{EBO}	Emitter cut-off current	V _{EB} = 5 V	$I_{\rm C} = 0$	W. WI.N	WW.	00 ^{%.CO}	MITY	5	mA
h _{FE}	Forward current transfer ratio	$V_{CE} = 4 V$ $V_{CE} = 4 V$	$I_{\rm C} = 1 \text{ A}$ $I_{\rm C} = 4 \text{ A}$	(see Notes 5 and 6)	NWW.	500 1000	OM.T	15000	
V _{CE(sat)}	Collector-emitter saturation voltage	$I_B = 16 \text{ mA}$ $I_B = 30 \text{ mA}$	$I_{\rm C} = 4 {\rm A}$ $I_{\rm C} = 6 {\rm A}$	(see Notes 5 and 6)	MMA	1.100%	COM.	2 3	V
V _{BE}	Base-emitter voltage	V _{CE} = 4 V	$I_{\rm C} = 4 {\rm A}$	(see Notes 5 and 6)	WW	1005		2.5	V
C _{obo}	Output capacitance	V _{CB} = 10 V	$I_E = 0$	NTN .	N	100	1.	200	pF
V _{EC}	Parallel diode forward voltage	I _E = 8 A	$I_{B} = 0$	(see Notes 5 and 6)	W	WW.10	NY.CL	3.5	v

NOTES: 5. These parameters must be measured using pulse techniques, $t_p = 300 \ \mu s$, duty cycle $\leq 2\%$.

6. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts. WWW.100

thermal characteristics

-	PARAMETER	MIN	TYP	MAX	UNIT
¢ ^{θJC}	Junction to case thermal resistance	WW I		1.78	°C/W
R _{0JA}	Junction to free air thermal resistance	VIII III	W.Y	62.5	°C/W

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TYPICAL CHARACTERISTICS

BASE-EMITTER SATURATION VOLTAGE vs



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MAXIMUM SAFE OPERATING REGIONS



THERMAL INFORMATION





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MECHANICAL DATA

TO-220

3-pin plastic flange-mount package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.



- C. Typical fixing hole centre stand off height according to package version.
- Version 1, 18.0 mm. Version 2, 17.6 mm.

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