

Silicon NPN Power Transistors

TIP160/161/162

DESCRIPTION

- With TO-3PN package
- DARLINGTON
- 10A rated continuous collector current

APPLICATIONS

- For use in automotive ignition,switching and motor control applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

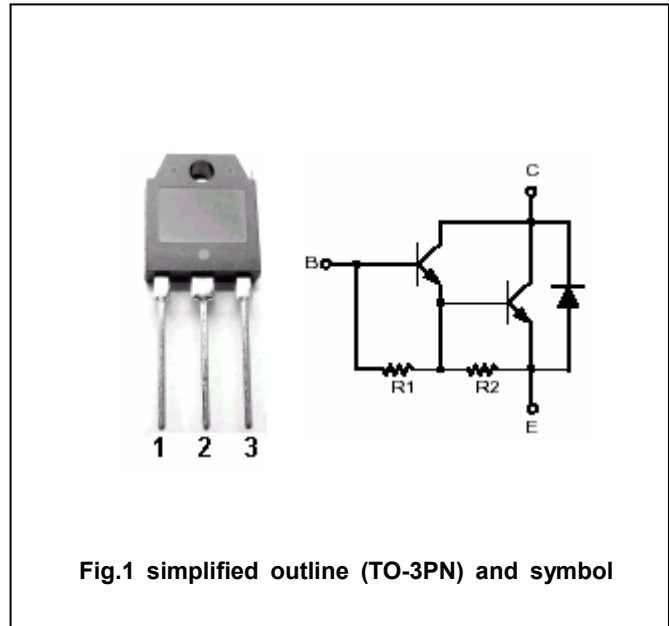


Fig.1 simplified outline (TO-3PN) and symbol

ABSOLUTE MAXIMUM RATINGS(Tc=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	TIP160	320	V
		TIP161	350	
		TIP162	380	
V _{CEO}	Collector-emitter voltage	TIP160	320	V
		TIP161	350	
		TIP162	380	
V _{EBO}	Emitter-base voltage	Open collector	5	V
I _C	Collector current-DC		10	A
I _{CM}	Collector current-Pulse		15	A
I _B	Base current-DC		1	A
P _C	Collector power dissipation	T _C =25°C	125	W
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal resistance junction to case	1.0	°C/W

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	TIP160	I _C =10mA, I _B =0	320			V
		TIP161		350			
		TIP162		380			
V _{CE(sat)-1}	Collector-emitter saturation voltage		I _C =6.5A, I _B =0.1A			2.8	V
V _{CE(sat)-2}	Collector-emitter saturation voltage		I _C =10A, I _B =1A			2.9	V
V _{BE(sat)}	Base-emitter saturation voltage		I _C =6.5A, I _B =0.1A			2.2	V
V _F	Diode forward voltage		I _F =10A			3.5	V
I _{CEO}	Collector cut-off current	TIP160	V _{CE} =320V, I _B =0			1.0	mA
		TIP161	V _{CE} =350V, I _B =0				
		TIP162	V _{CE} =380V, I _B =0				
I _{EBO}	Emitter cut-off current		V _{EB} =5V; I _C =0			100	mA
h _{FE}	DC current gain		I _C =4A; V _{CE} =2.2V	200			

Switching times

t _d	Delay time	V _{CC} =33 V, I _C = 6.5 A, I _{B1} =-I _{B2} =100 mA t _p =20μs ;Duty Cycles≤2.0%		0.3		μs
t _r	Rise time			1.5		μs
t _s	Storage time			2.3		μs
t _f	Fall time			2.8		μs

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PACKAGE OUTLINE

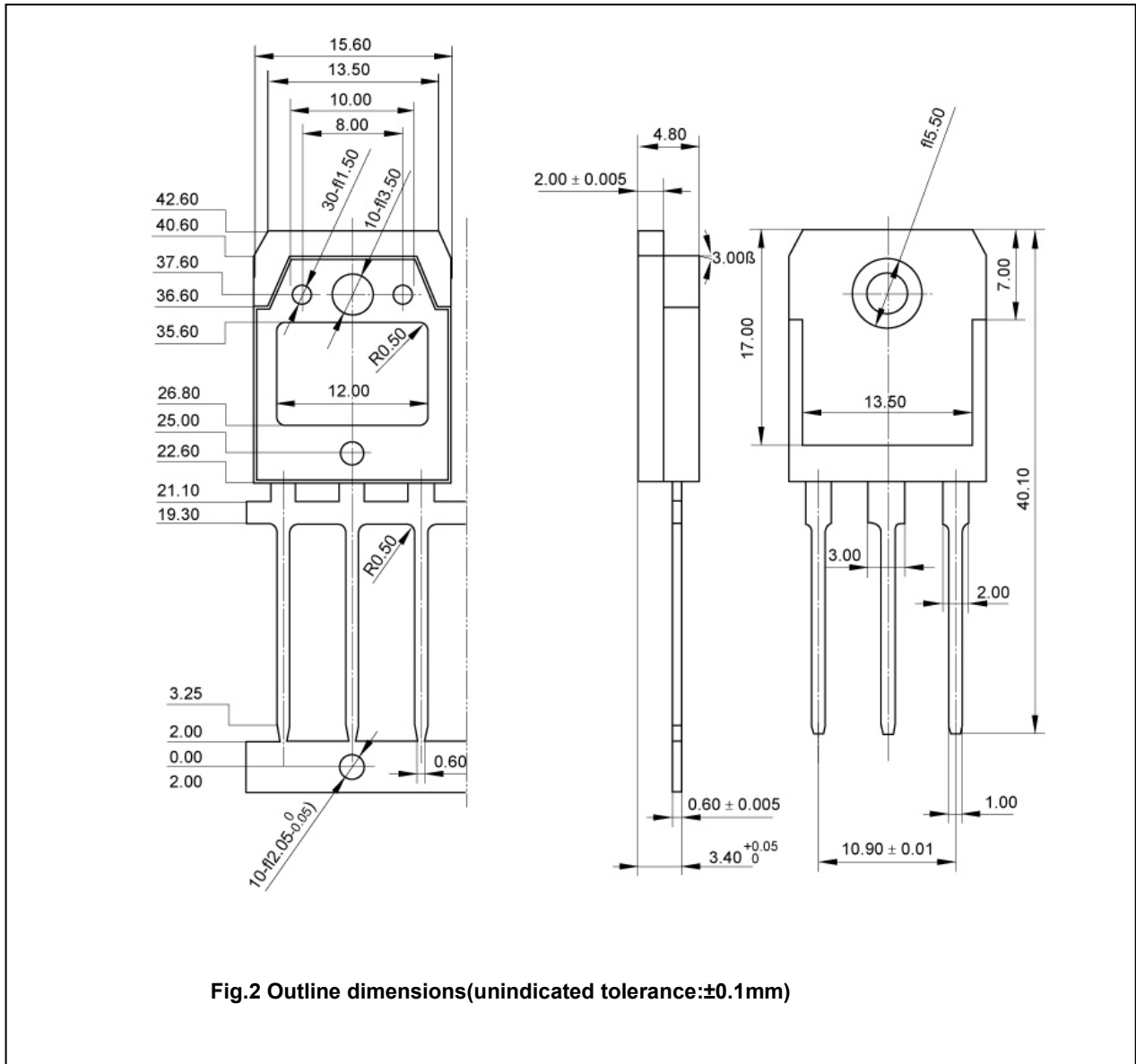


Fig.2 Outline dimensions(unindicated tolerance:±0.1mm)