

SavantIC Semiconductor

Product Specification

Silicon NPN Power Transistors

TIP150/151/152

DESCRIPTION

- With TO-220C package
- DARLINGTON

APPLICATIONS

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

PINNING

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

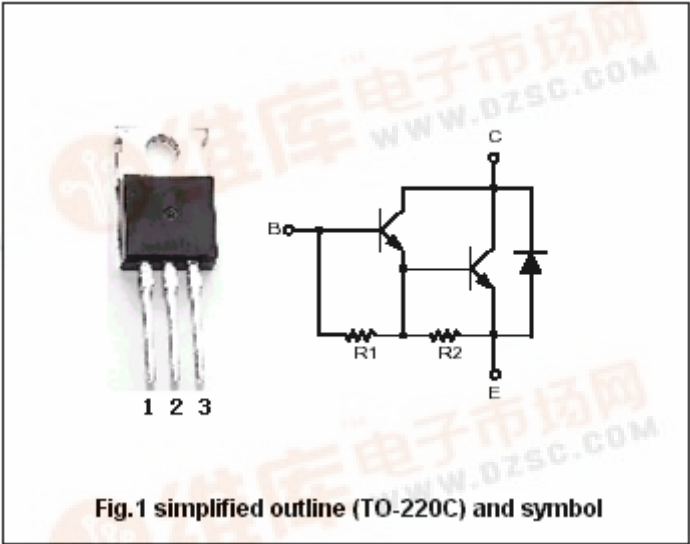


Fig.1 simplified outline (TO-220C) and symbol

ABSOLUTE MAXIMUM RATINGS(Tc=25℃)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	TIP150	Open emitter	300	V
		TIP151		350	
		TIP152		400	
V _{CEO}	Collector-emitter voltage	TIP150	Open base	300	V
		TIP151		350	
		TIP152		400	
V _{EBO}	Emitter-base voltage		Open collector	8	V
I _C	Collector current-DC			7	A
I _{CM}	Collector current-Pulse			10	A
I _B	Base current-DC			1.5	A
P _C	Collector power dissipation		T _C =25℃	80	W
T _j	Junction temperature			150	℃
T _{stg}	Storage temperature			-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R _{th j-c}	Thermal resistance junction to case	1.56	℃/W



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CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	TIP150	$I_C=10mA, I_B=0$	300			V
		TIP151		350			
		TIP152		400			
$V_{(BR)CBO}$	Collector-base breakdown voltage	TIP150	$I_C=1mA, I_E=0$	300			V
		TIP151		350			
		TIP152		400			
$V_{CE(sat)-1}$	Collector-emitter saturation voltage		$I_C=1A, I_B=10mA$			1.5	V
$V_{CE(sat)-2}$	Collector-emitter saturation voltage		$I_C=2A, I_B=100mA$			1.5	V
$V_{CE(sat)-3}$	Collector-emitter saturation voltage		$I_C=5A, I_B=250mA$			2.0	V
$V_{BE(sat)-1}$	Base-emitter saturation voltage		$I_C=2A, I_B=100mA$			2.2	V
$V_{BE(sat)-2}$	Base-emitter saturation voltage		$I_C=5A, I_B=250mA$			2.3	V
I_{CEO}	Collector cut-off current	TIP150	$V_{CE}=300V, I_B=0$			250	μA
		TIP151	$V_{CE}=350V, I_B=0$				
		TIP152	$V_{CE}=400V, I_B=0$				
I_{EBO}	Emitter cut-off current		$V_{EB}=8V; I_C=0$			15	mA
h_{FE-1}	DC current gain		$I_C=2.5A; V_{CE}=5V$	150			
h_{FE-2}	DC current gain		$I_C=5A; V_{CE}=5V$	50			
h_{FE-3}	DC current gain		$I_C=7A; V_{CE}=5V$	15			
V_F	Diode forward voltage		$I_F=7A$			3.5	V
C_{OB}	Output capacitance		$I_E=0; V_{CB}=10V; f=1MHz$			150	pF

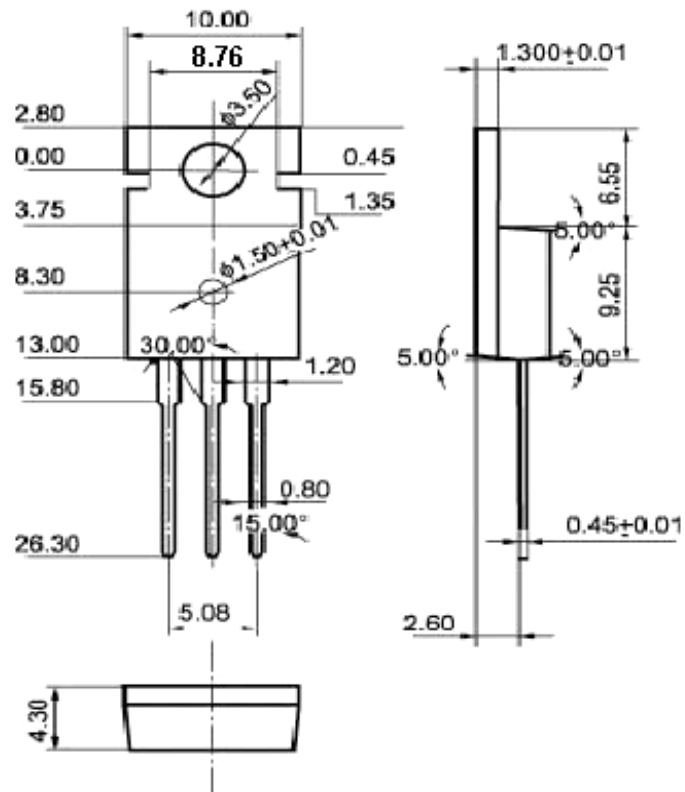
Switching times

t_d	Delay time	$V_{CC}=250V; I_C=5A$ $I_{B1}=-I_{B2}=250mA$ $t_p=20\mu s; \text{Duty Cycle} \leq 2.0\%$		0.03		μs
t_r	Rise time			0.18		μs
t_s	Storage time			3.5		μs
t_f	Fall time			1.6		μs

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PACKAGE OUTLINE

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