

Silicon NPN Darlington Power Transistors

2SD2390

DESCRIPTION

- With TO-3PN package
- Complement to type 2SB1560
- High DC current gain

APPLICATIONS

- Audio ,regulator and general purpose

PINNING

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

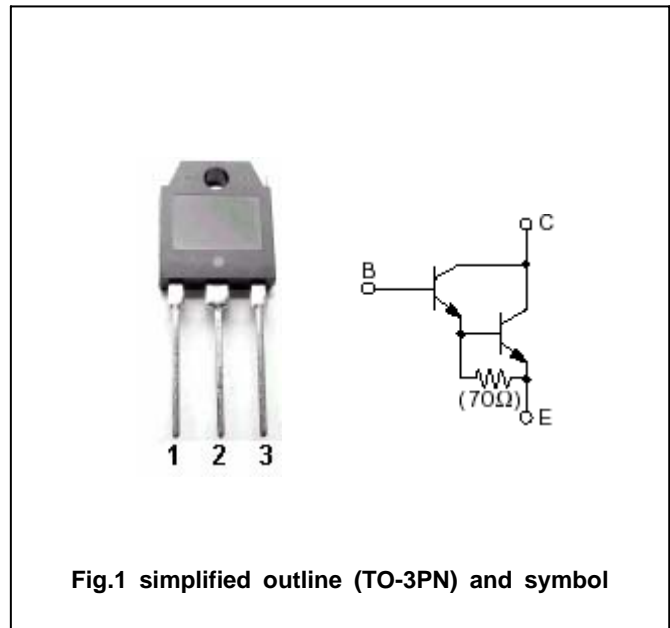


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Ta=°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	Open emitter	160	V
V _{CEO}	Collector-emitter voltage	Open base	150	V
V _{EBO}	Emitter-base voltage	Open collector	5	V
I _C	Collector current		10	A
I _B	Base current		1	A
P _C	Collector power dissipation	T _C =25°C	100	W
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-55~150	°C

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CHARACTERISTICS

 $T_j=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=30\text{mA}; I_B=0$	150			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=7\text{A}; I_B=7\text{mA}$			2.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=7\text{A}; I_B=7\text{mA}$			3.0	V
I_{CBO}	Collector cut-off current	$V_{CB}=160\text{V}; I_E=0$			100	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5\text{V}; I_C=0$			100	μA
h_{FE}	DC current gain	$I_C=7\text{A}; V_{CE}=4\text{V}$	5000			
C_{ob}	Output capacitance	$I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$		95		pF
f_T	Transition frequency	$I_C=2\text{A}; V_{CE}=12\text{V}$		55		MHz

Switching times

t_{on}	Turn-on time	$I_C=7\text{A}; R_L=10\Omega$ $I_{B1}=-I_{B2}=7\text{mA}$ $V_{CC}=70\text{V}$		0.5		μs
t_s	Storage time			10.0		μs
t_f	Fall time			1.1		μs

◆ h_{FE} Classifications

O	P	Y
5000-12000	6500-20000	15000-30000

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PACKAGE OUTLINE

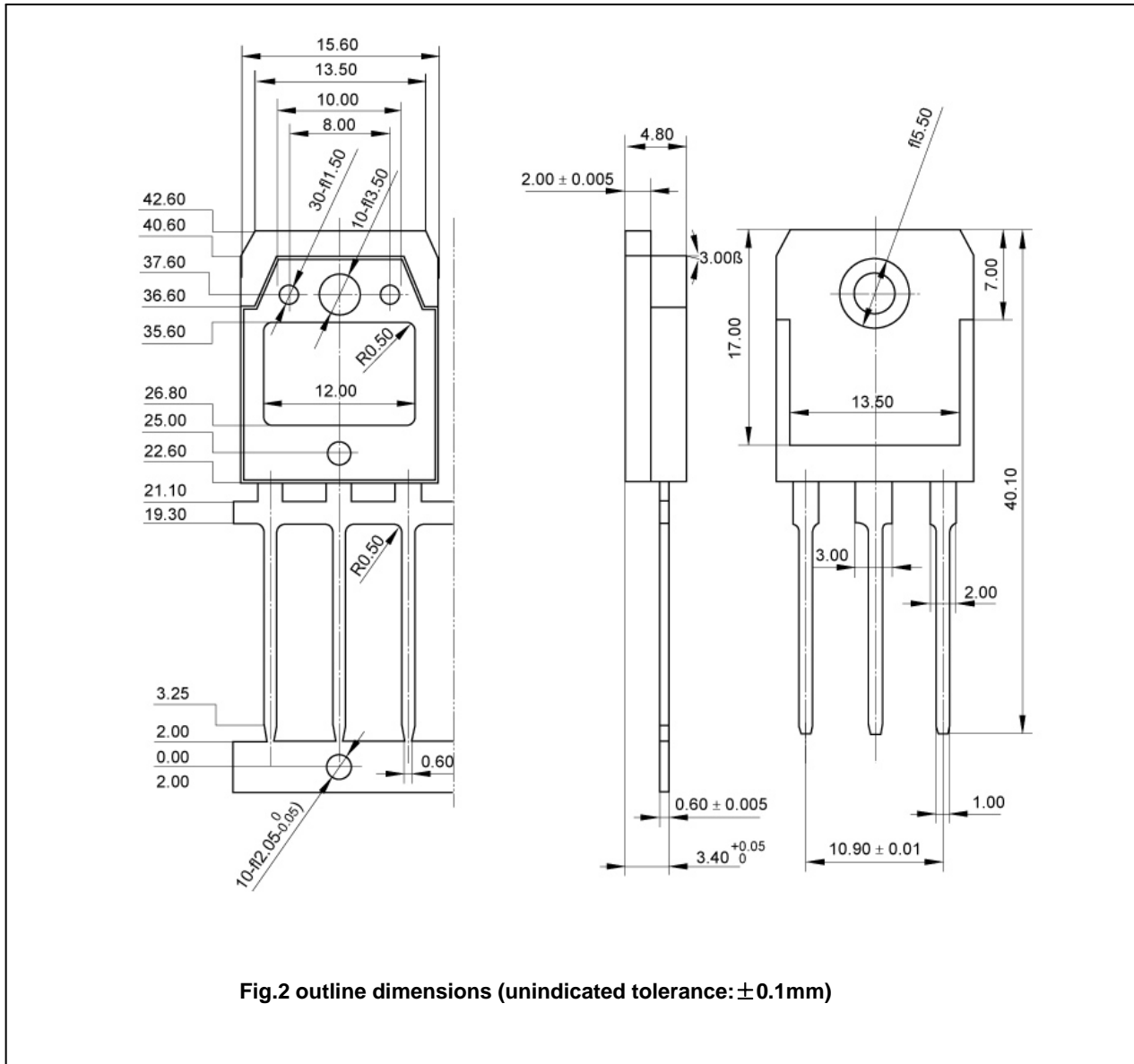


Fig.2 outline dimensions (unindicated tolerance: ±0.1mm)

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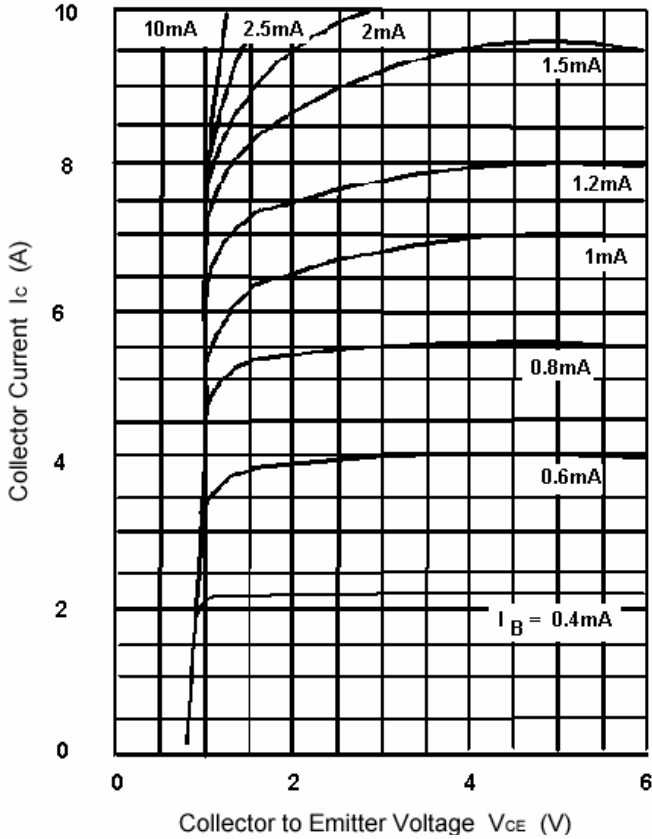


Fig.3 I_C - V_{CE} Characteristics (Typical)

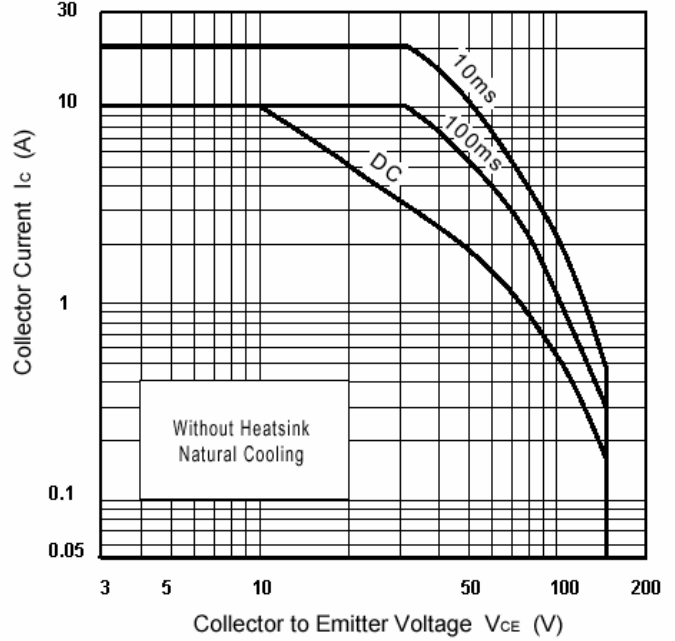


Fig.4 Safe Operating Area (Single Pulse)

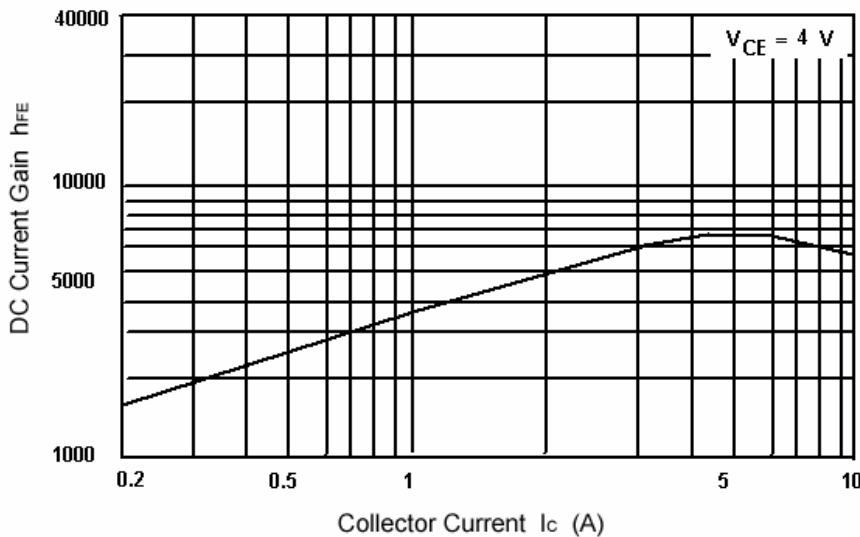


Fig.5 h_{FE} - I_C Characteristics (Typical)