

Silicon NPN Darlington Power Transistors

2SD2389

DESCRIPTION

- With TO-3PN package
- Complement to type 2SB1559
- High DC current gain

APPLICATIONS

- Audio ,regulator and general purpose

PINNING

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

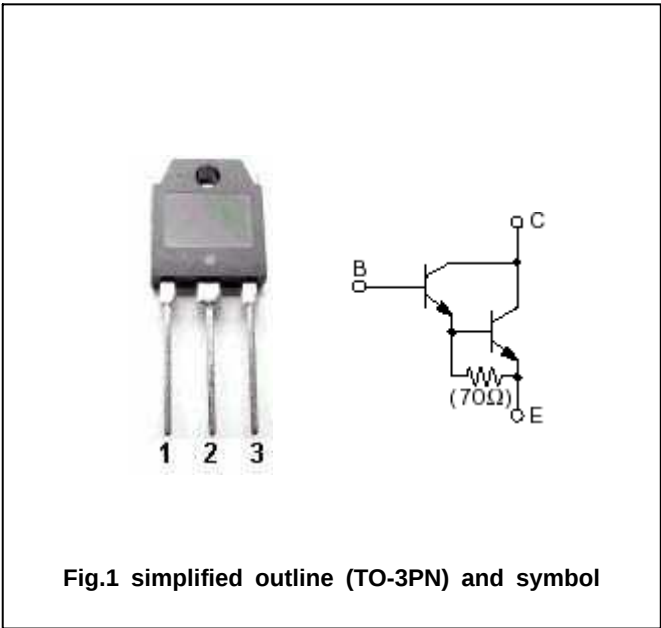


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Ta=)

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		8	A
I _B	Base current		1	A
P _C	Collector power dissipation	T _C =25	80	W
T _j	Junction temperature		150	
T _{stg}	Storage temperature		-55~150	

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO}	Collector-emitter breakdown voltage	I _C =30mA ; I _B =0	150			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =6A ; I _B =6mA			2.5	V
V _{BEsat}	Base-emitter saturation voltage	I _C =6A ; I _B =6mA			3.0	V
I _{CBO}	Collector cut-off current	V _{CB} =160V I _E =0			100	μ A
I _{EBO}	Emitter cut-off current	V _{EB} =5V; I _C =0			100	μ A
h _{FE}	DC current gain	I _C =6A ; V _{CE} =4V	5000			
C _{ob}	Output capacitance	I _E =0 ; V _{CB} =10V; f=1MHz		85		pF
f _T	Transition frequency	I _C =1A ; V _{CE} =12V		80		MHz

Switching times

t _{on}	Turn-on time	I _C =6A; R _L =10Ω I _{B1} =- I _{B2} =6mA V _{CC} =60V		0.6		μ s
t _s	Storage time			10.0		μ s
t _f	Fall time			0.9		μ s

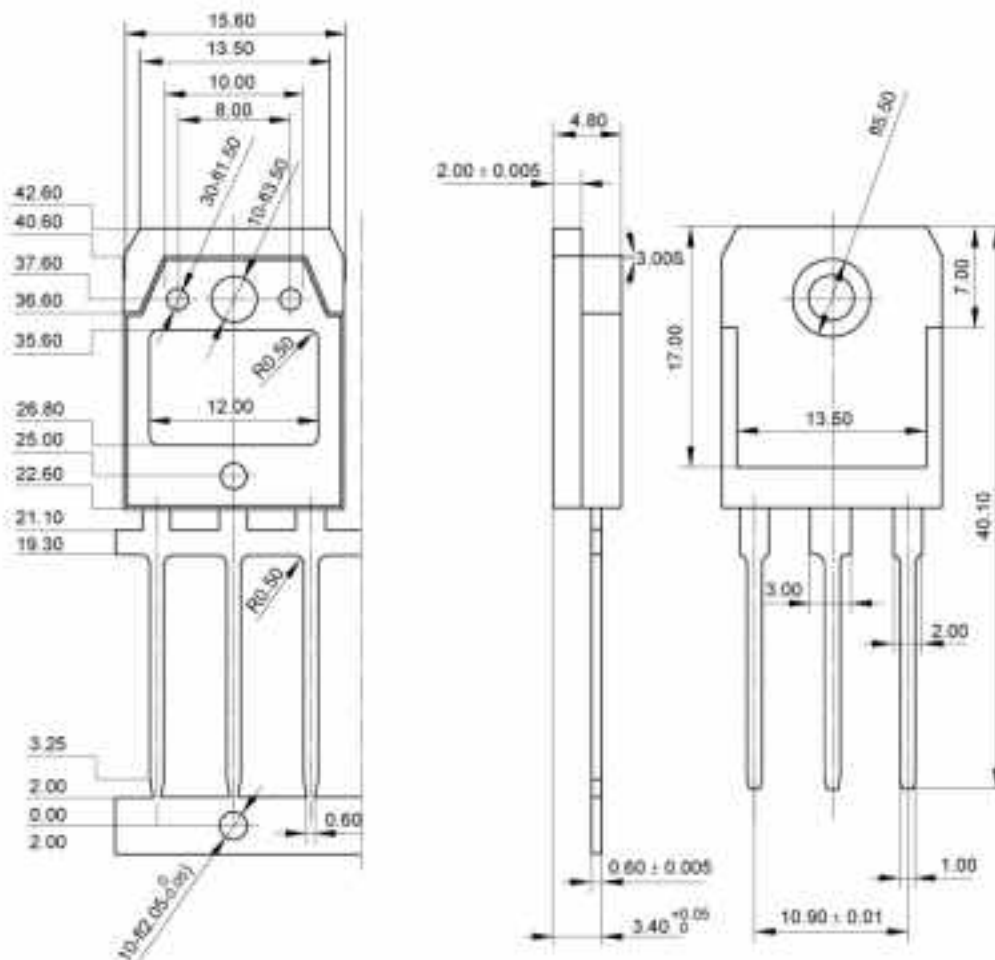
◆ h_{FE} Classifications

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

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PACKAGE OUTLINE

Fig.2 outline dimensions (unindicated tolerance: $\pm 0.1\text{mm}$)

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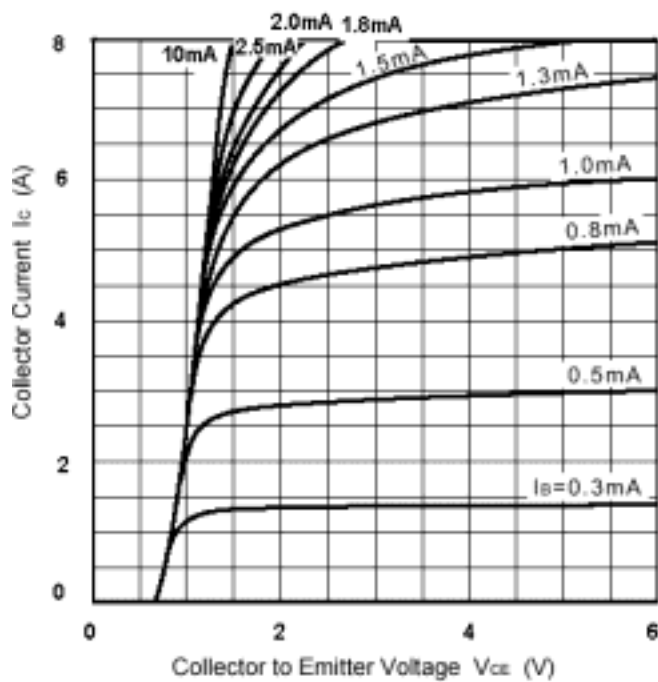
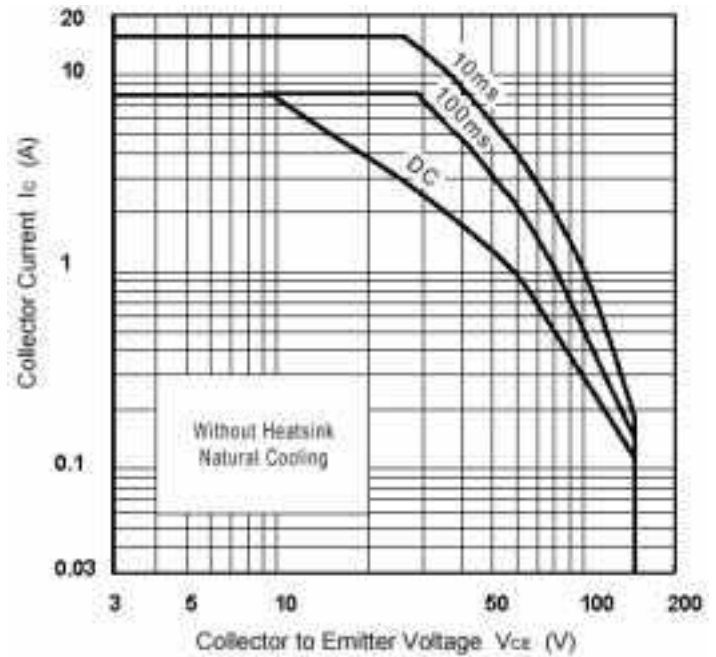
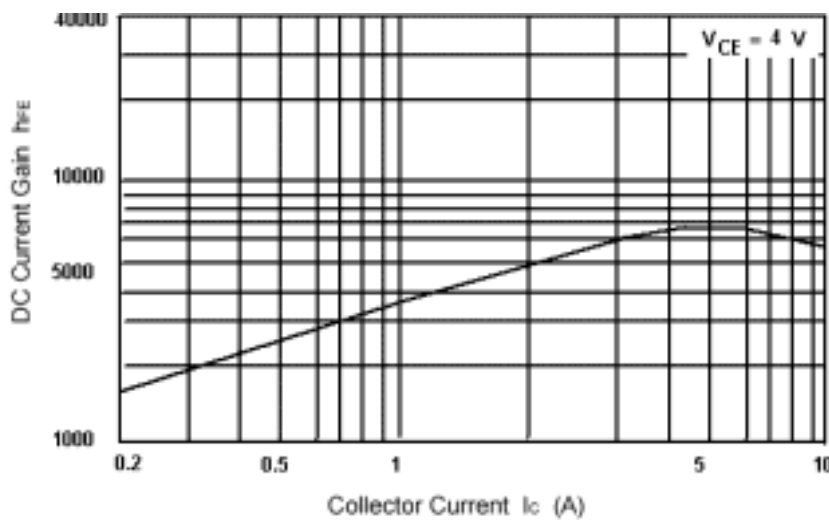
Fig.3 I_C - V_{CE} Characteristics (Typical)

Fig.4 Safe Operating Area (Single Pulse)

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