

Silicon NPN Power Transistors

2SC3678

DESCRIPTION

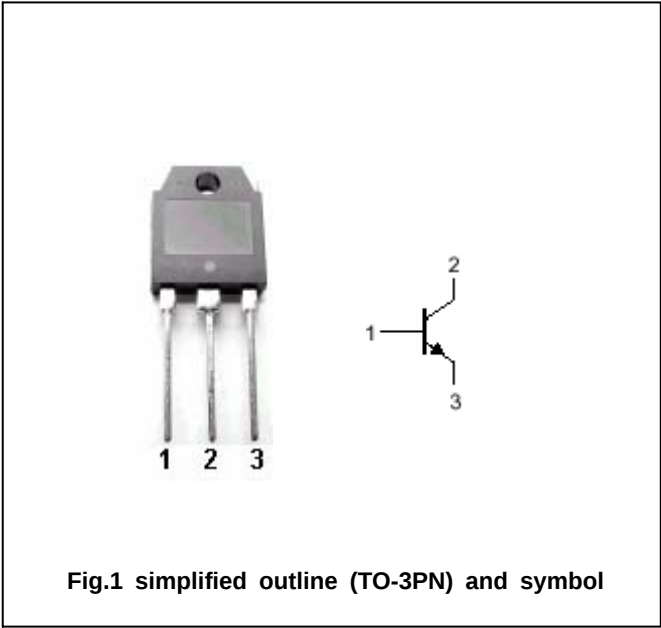
- With TO-3PN package
- High voltage switching transistor

APPLICATIONS

- Switching regulator and general purpose applications

PINNING

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



Absolute maximum ratings(Ta=)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	Open emitter	900	V
V _{CEO}	Collector-emitter voltage	Open base	800	V
V _{EBO}	Emitter-base voltage	Open collector	7	V
I _C	Collector current		3	A
I _{CM}	Collector current-pulse		6	A
I _B	Base current		1.5	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

Tj=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=10mA; I_B=0$	800			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=1A; I_B=0.2A$			0.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=1A; I_B=0.2A$			1.2	V
I_{CBO}	Collector cut-off current	$V_{CB}=800V; I_E=0$			100	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=7V; I_C=0$			100	μA
h_{FE}	DC current gain	$I_C=1A; V_{CE}=4V$	10		30	
C_{ob}	Output capacitance	$I_E=0; V_{CB}=10V; f=1MHz$		50		pF
f_T	Transition frequency	$I_E=-0.3A; V_{CE}=12V$		6		MHz

Switching times

t_{on}	Turn-on time	$I_C=1A; I_{B1}=0.15A; I_{B2}=-0.5A$ $R_L=250\Omega, V_{CC}=250V$			1.0	μs
t_s	Storage time				5.0	μs
t_f	Fall time				1.0	μs

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PACKAGE OUTLINE

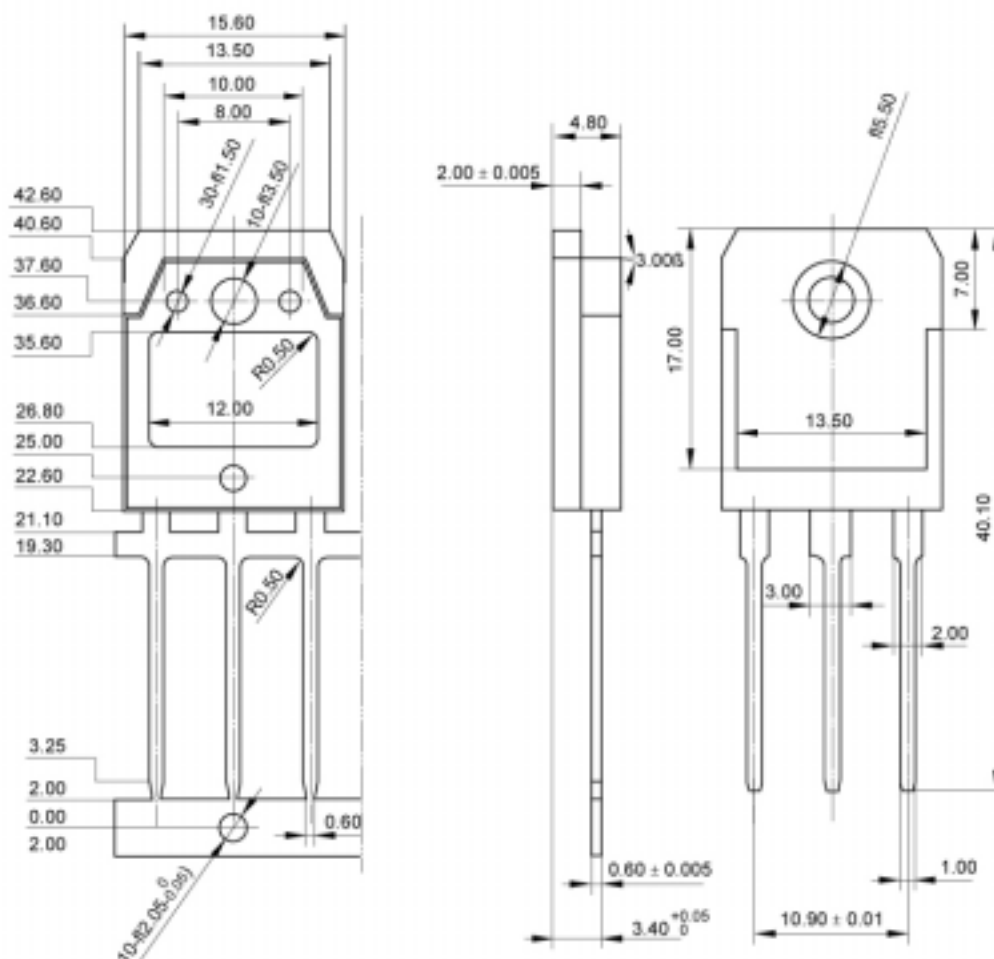


Fig.2 outline dimensions (unindicated tolerance: $\pm 0.1\text{mm}$)

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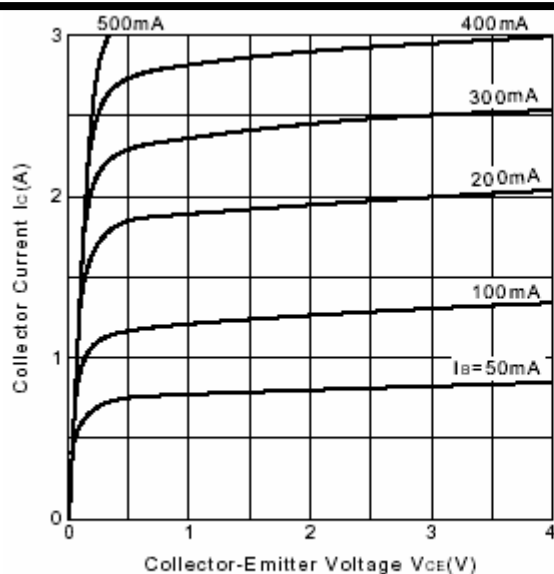


Fig.3 Static Characteristic

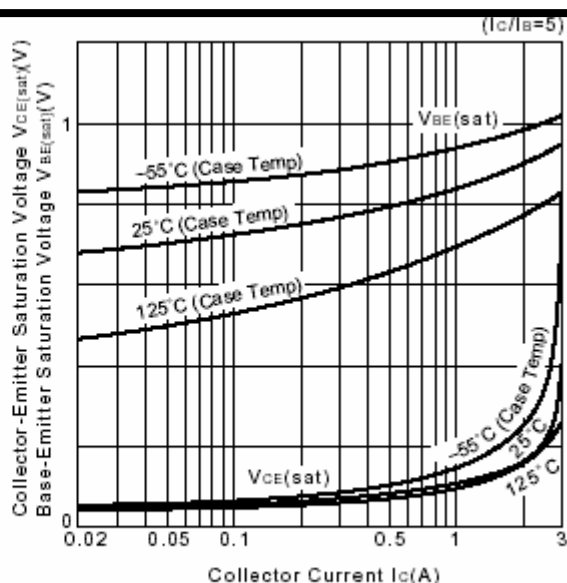
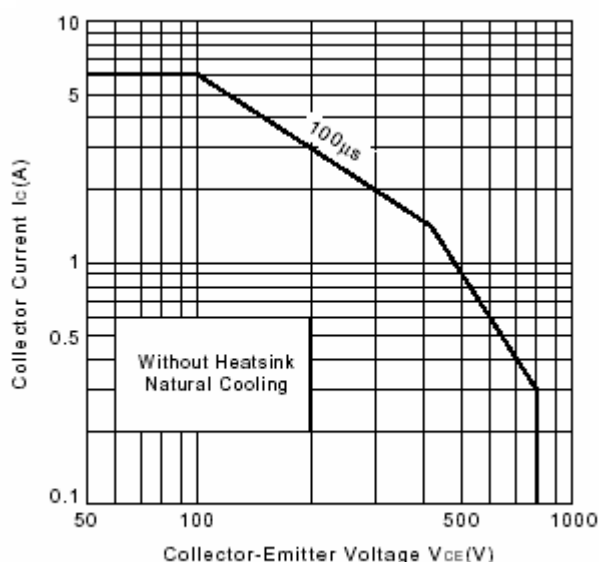
Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Fig.5 Safe Operating Area

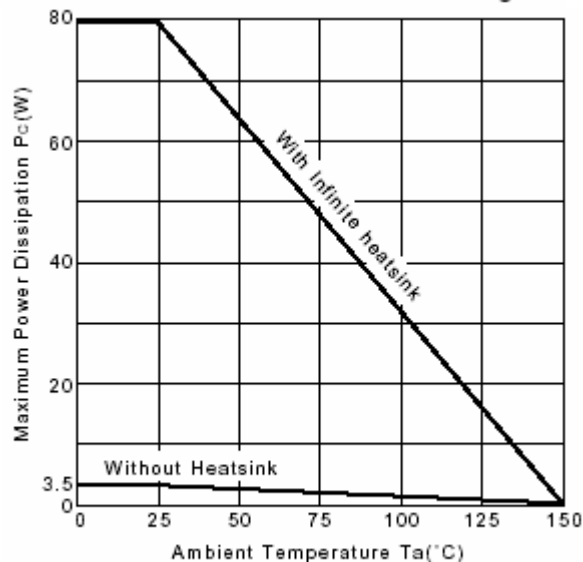
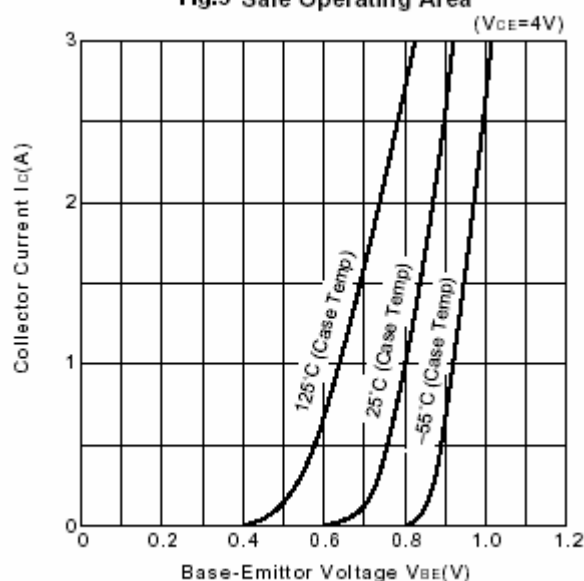
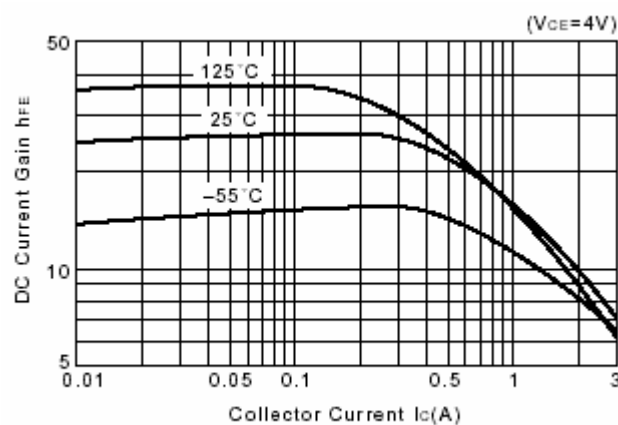
Fig.6 P_C - T_a DeratingFig.7 I_C - V_{BE} 

Fig.8 DC current Gain