Silicon NPN Power Transistors 2SC3083

DESCRIPTION

- With TO-3PN package
- High breakdown voltage (V_{CBO}≥500V)
- Fast switching speed
- Wide ASO（Safe Operating Area）

APPLICATIONS

- 400V/6A switching regulator applications

PINNING

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

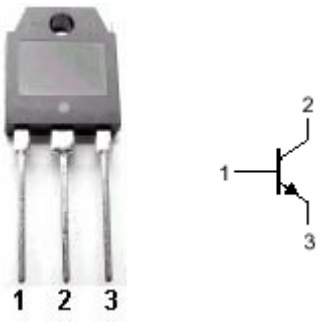

Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings (Ta=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	500	V
V_{CEO}	Collector-emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		6	A
I_{CM}	Collector current-peak		12	A
I_B	Base current		2	A
P_C	Collector power dissipation	T_a=25℃	2.5	W
		T_C=25℃	60	
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=5mA ;R_{BE}=∞	400			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=1mA ;I_E=0	500			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=1mA ;I_C=0	7			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=2A; I_B=0.4A			1.0	V
V_{BEsat}	Base-emitter saturation voltage	I_C=2A; I_B=0.4A			1.5	V
I_{CBO}	Collector cut-off current	V_{CB}=400V; I_E=0			10	μA
I_{EBO}	Emitter cut-off current	V_{EB}=5V; I_C=0			10	μA
h_{FE-1}	DC current gain	I_C=0.4A ; V_{CE}=5V	15		50	
h_{FE-2}	DC current gain	I_C=2A ; V_{CE}=5V	8			
C_{OB}	Output capacitance	I_E=0 ; V_{CB}=10V;f=1MHz		40		pF
f_T	Transition frequency	I_C=0.4A ; V_{CE}=10V		20		MHz
Switching times						
t_{on}	Turn-on time	I_C=3A ;I_{B1}=-I_{B2}=0.6A R_L=66.6Ω,V_{CC}=200V			1.0	μs
t_s	Storage time				2.5	μs
t_f	Fall time				1.0	μs

◆ **h_{FE-1} classifications**

L	M	N
15-30	20-40	30-50

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PACKAGE OUTLINE

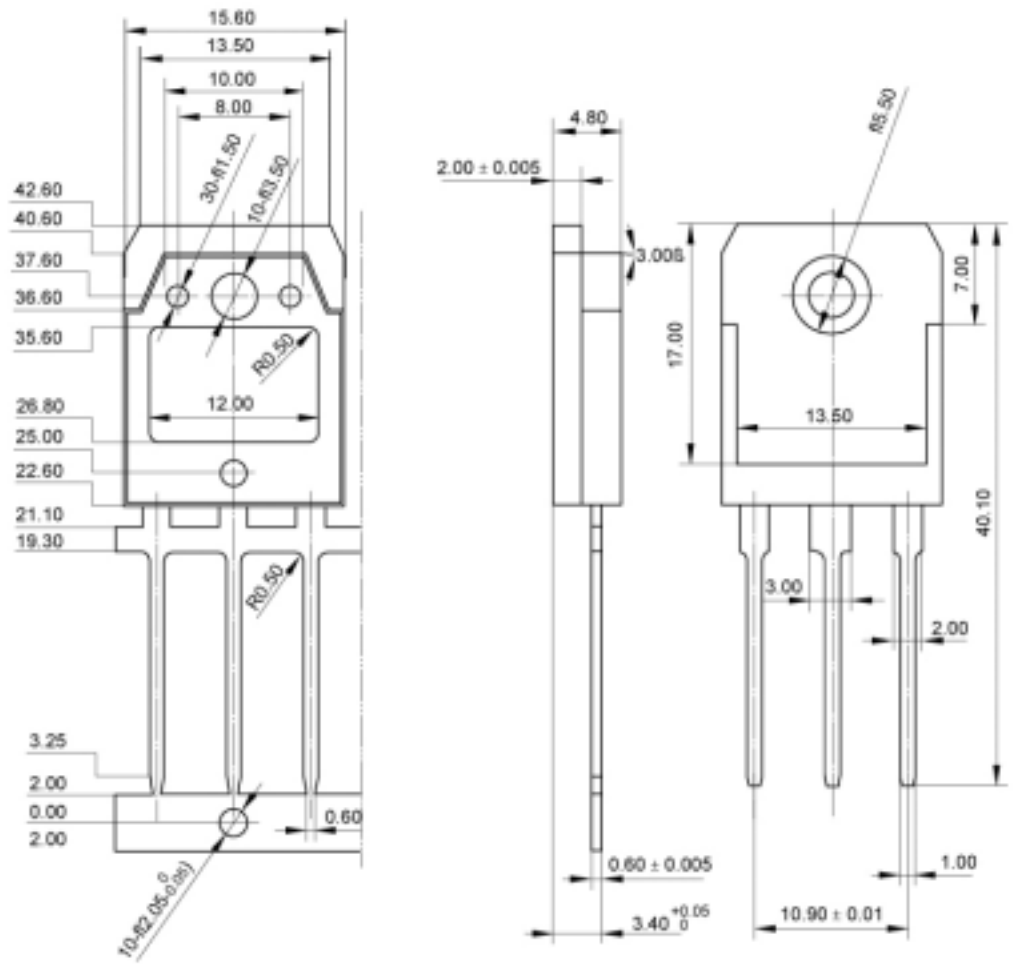

Fig.2 outline dimensions

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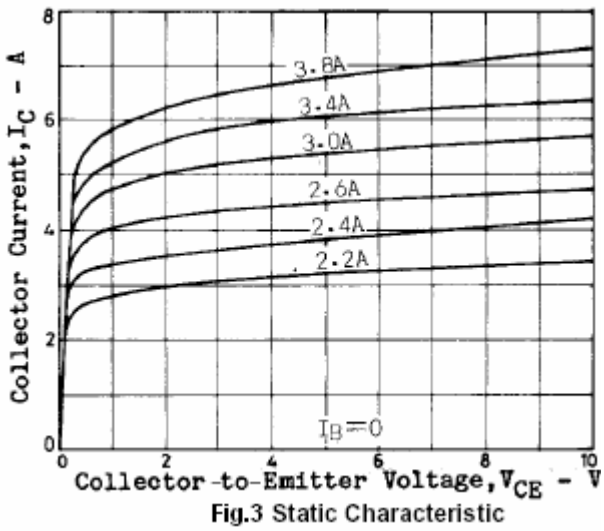

Fig.3 Static Characteristic

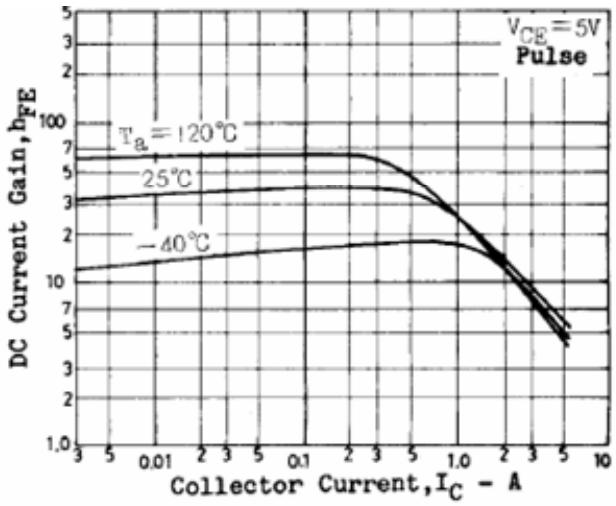

Fig.4 DC current Gain

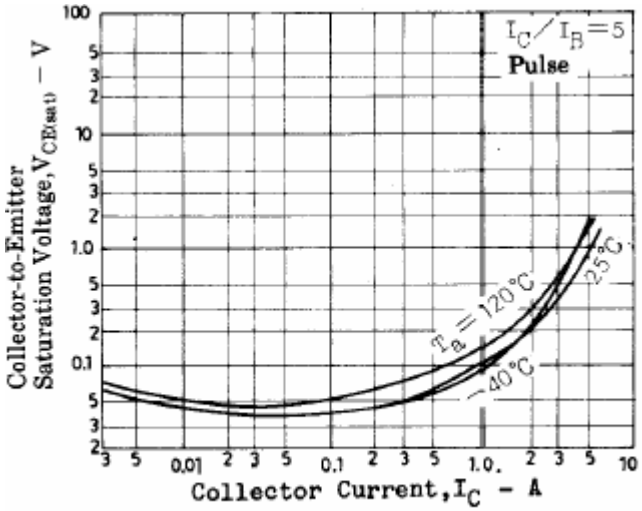

Fig.5 Collector-Emitter Saturation Voltage

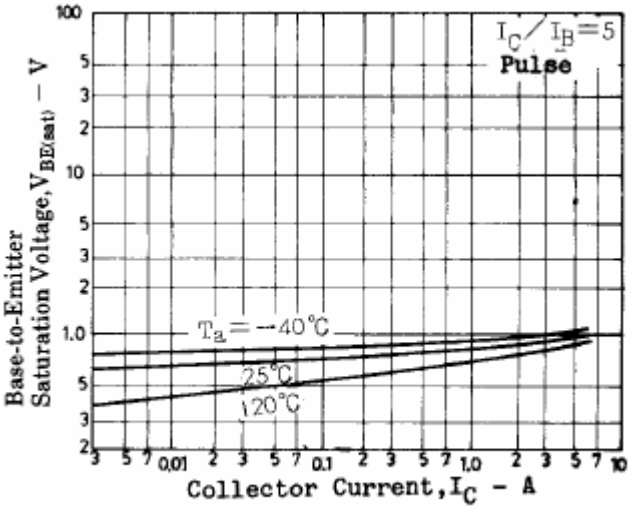

Fig.6 Base-Emitter Saturation Voltage

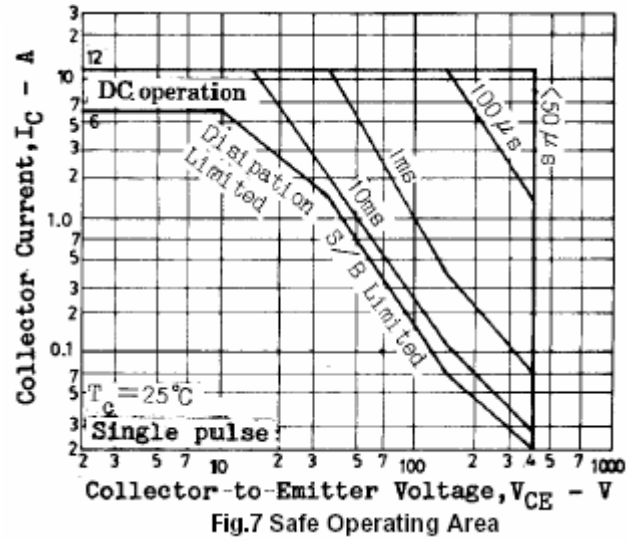

Fig.7 Safe Operating Area