Silicon NPN Power Transistors 2SC5003

DESCRIPTION

- With TO-3PML package
- High voltage switching transistor
- Built-in damper diode

APPLICATIONS

- Display horizontal deflection output; switching regulator and general purpose

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

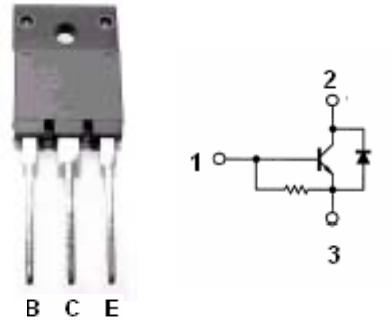

Fig.1 simplified outline (TO-3PML) and symbol

Absolute maximum ratings(Ta=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	1500	V
V_{CEO}	Collector-emitter voltage	Open base	800	V
V_{EBO}	Emitter-base voltage	Open collector	6	V
I_C	Collector current		7	A
I_{CM}	Collector current-peak		14	A
I_B	Base current		3.5	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
$V_{(BR)EBO}$	Base-emitter breakdown voltage	I_{EB}=300mA; I_B=0	6			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=5A;I_B=1.2A			5	V
V_{BEsat}	Base-emitter saturation voltage	I_C=5A;I_B=1.2A			1.5	V
I_{CBO1}	Collector cut-off current	V_{CB}=1200V; I_E=0			100	μA
I_{CBO2}	Collector cut-off current	V_{CB}=1500V; I_E=0			1	mA
I_{CEO}	Collector cut-off current	V_{CE}=800V; I_E=0			1	mA
I_{EBO}	Emitter cut-off current	V_{EB}=6V; I_C=0			100	μA
h_{FE-1}	DC current gain	I_C=1A ; V_{CE}=5V	8			
h_{FE-2}	DC current gain	I_C=5A ; V_{CE}=5V	4		9	
V_{FEC}	Forward voltage	I_{EC}=7A			2.0	V
f_T	Transition frequency	I_E=-0.5A ; V_{CE}=12V		4		MHz
C_{OB}	Output capacitance	V_{CB}=10V;f=1MHz		100		pF
Switching times						
t_{stg}	Storage time	I_C=4A;I_{B1}=0.8A; I_{B2}=-1.6A;R_L=50Ω V_{CC}=200V			4.0	μs
t_f	Fall time				0.2	μs

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PACKAGE OUTLINE

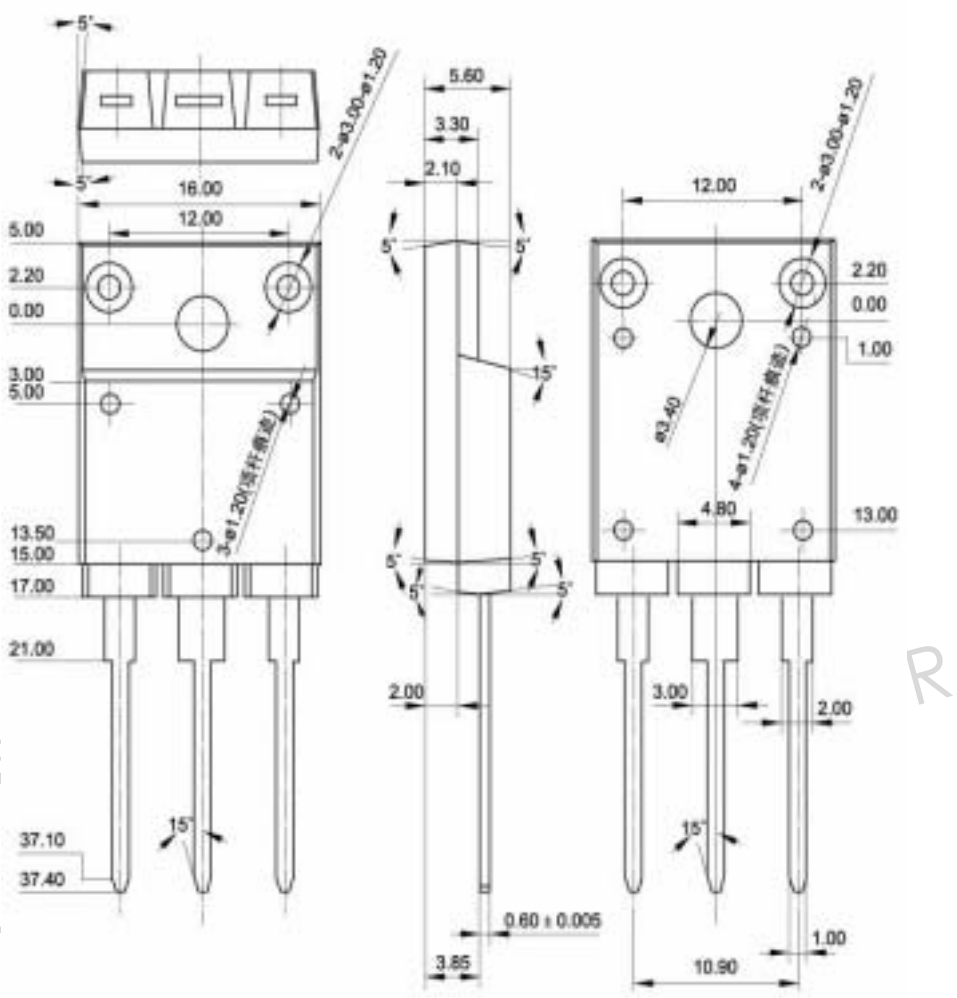

Fig.2 Outline dimensions

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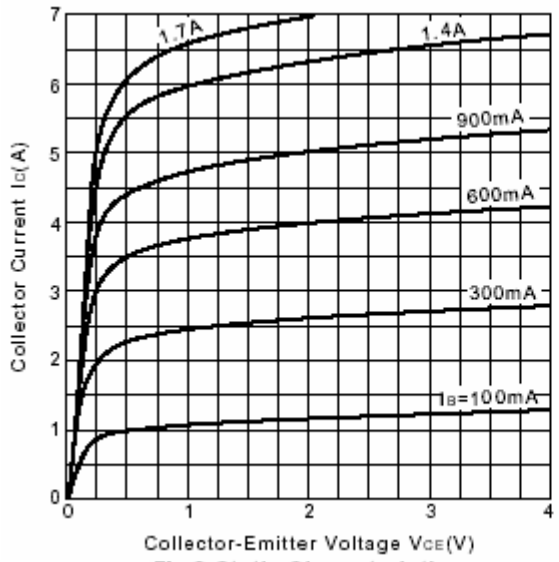

Fig.3 Static Characteristic

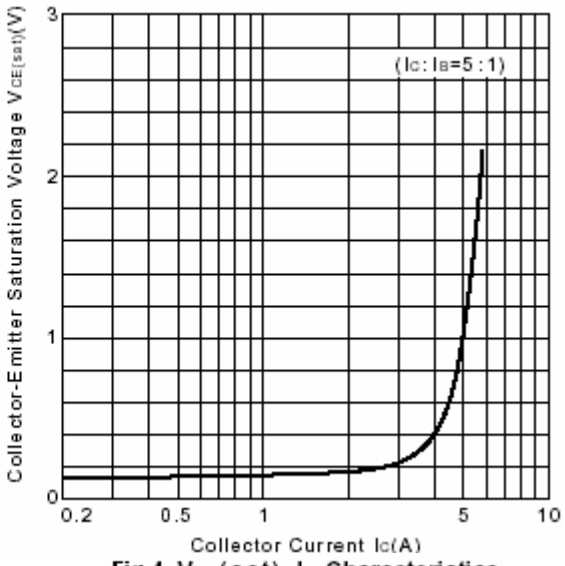

Fig.4 VCE(sat)-IC Characteristics

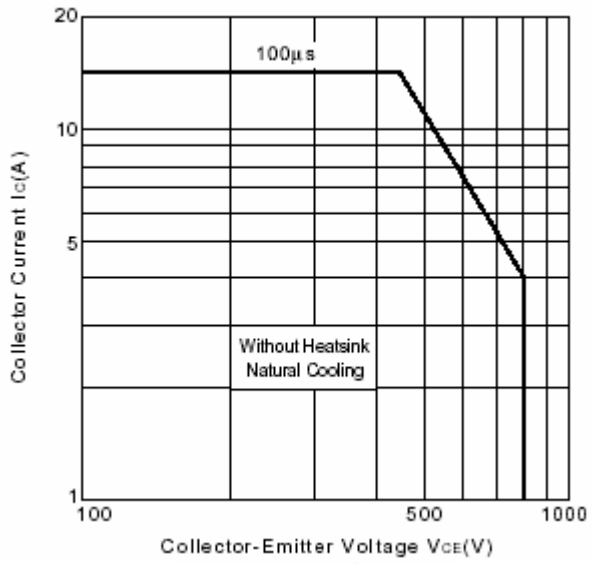

Fig.5 Safe Operating Area

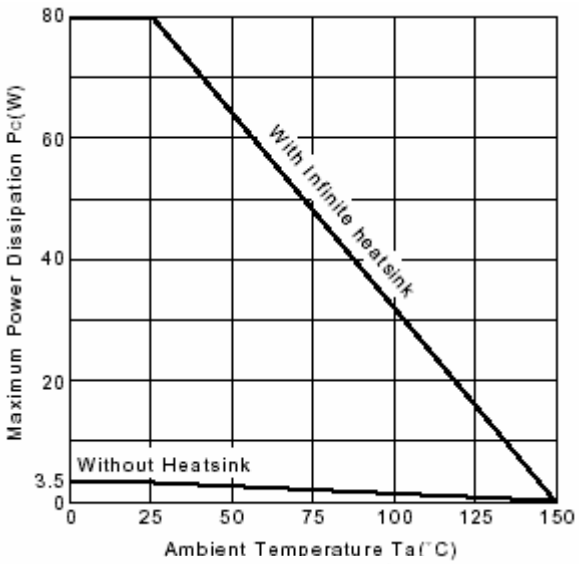

Fig.6 Pc-Ta Derating

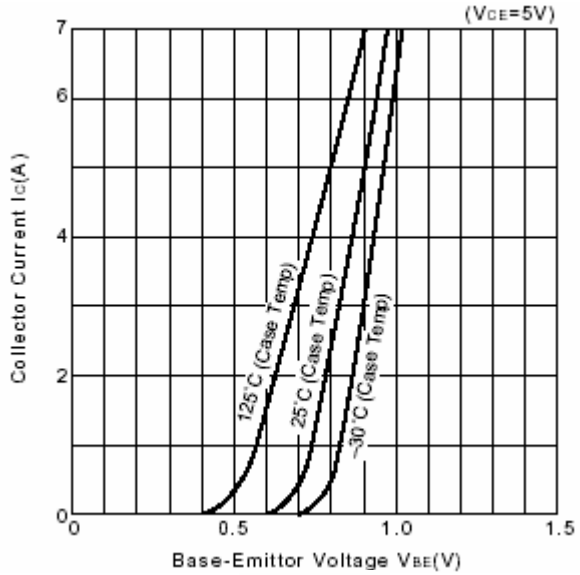

Fig.7 IC-VBE

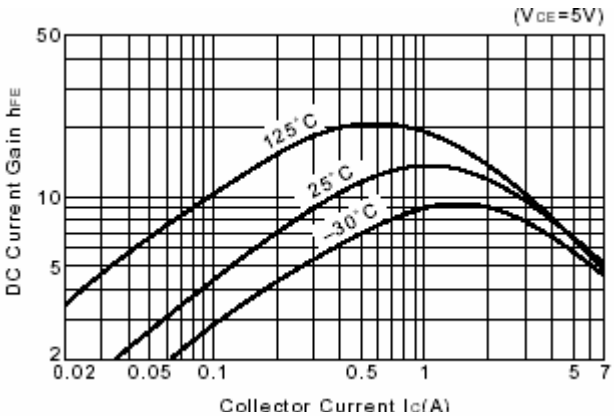

Fig.8 DC current Gain