SPTECH Silicon NPN Power Transistors

DESCRIPTION

- With TO-220C package
- Fast switching speeds
- Low collector saturation voltage

APPLICATIONS

- For general purpose power amplification and switching regulators,converters and power amplifiers applications

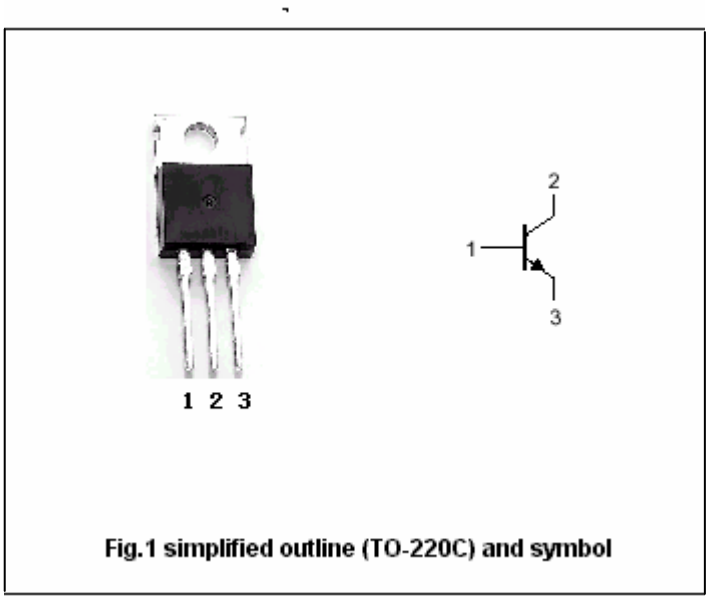


Fig.1 simplified outline (TO-220C) and symbol

PINNING

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

Absolute maximum ratings (Tc=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	60	V
V_{CEO}	Collector-emitter voltage	Open base	60	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current (DC)		10	A
I_{CM}	Collector current-Peak		20	A
P_D	Total power dissipation	T_C=25℃	50	W
		T_a=25℃	1.67	
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j\text{-}C}$	Thermal resistance from junction to case	2.5	℃/W

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CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	I_C=10mA I_B=0,	60			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=8A; I_B=0.4A			1.0	V
V_{BEsat}	Base-emitter saturation voltage	I_C=8A ;I_B=0.8A			1.5	V
I_{CES}	Collector cut-off current	V_{CE}=60V; V_{BE}=0			10	μA
I_{EBO}	Emitter cut-off current	V_{EB}=5V; I_C=0			0.1	mA
h_{FE-1}	DC current gain	I_C=2A ; V_{CE}=1V	60			
h_{FE-2}	DC current gain	I_C=4A ; V_{CE}=1V	40			
f_T	Transition frequency	I_C=0.5A ; V_{CE}=10V		50		MHz
C_{cb}	Collector capacitance	f=1MHz ; V_{CB}=10V		130		pF
Switching times						
t_{on}	Turn-on time	I_C=5A I_{B1}=- I_{B2}=0.5A		0.3		μs
t_s	Storage time			0.5		μs
t_f	Fall time			0.14		μs

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PACKAGE OUTLINE

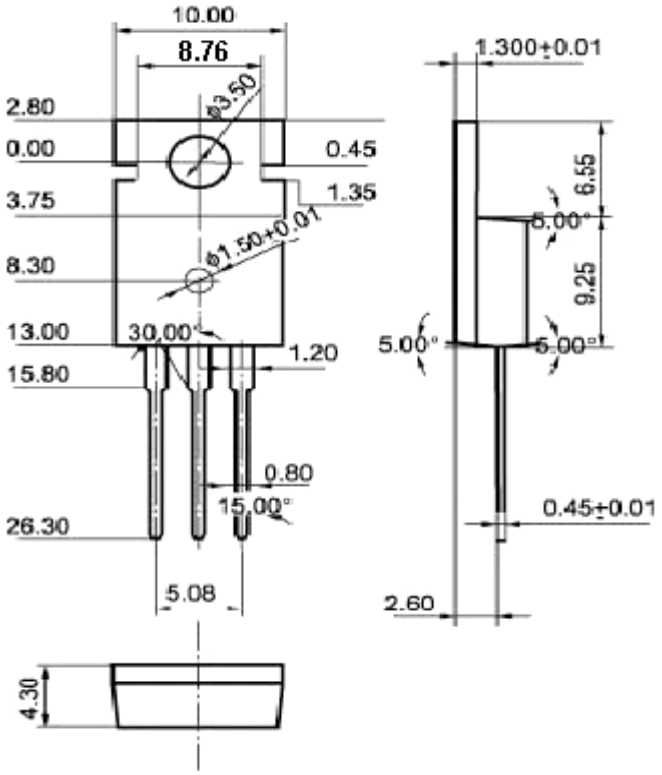


Fig.2 Outline dimensions (unindicated tolerance: ±0.10mm)

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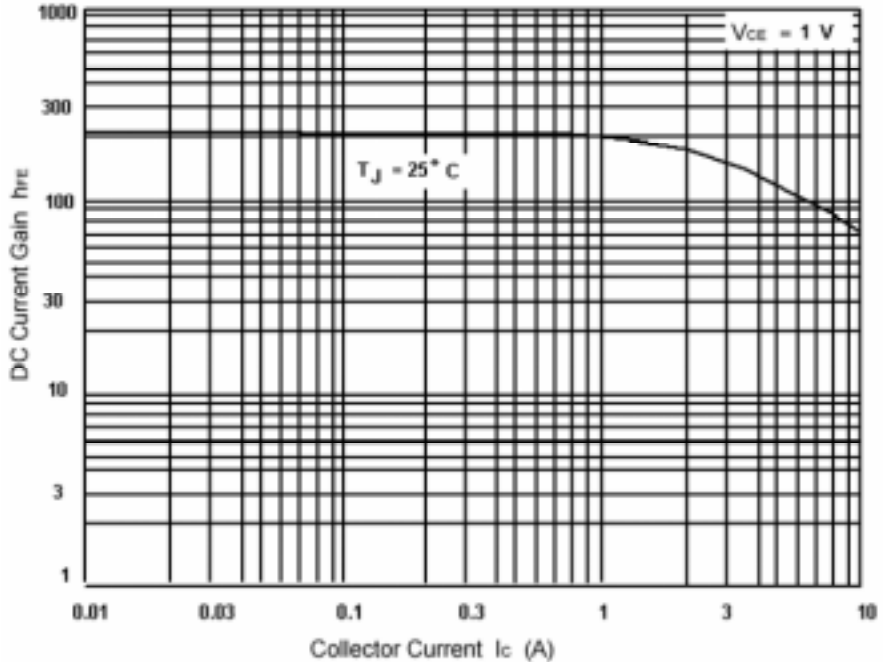


Fig.3 Static Characteristic

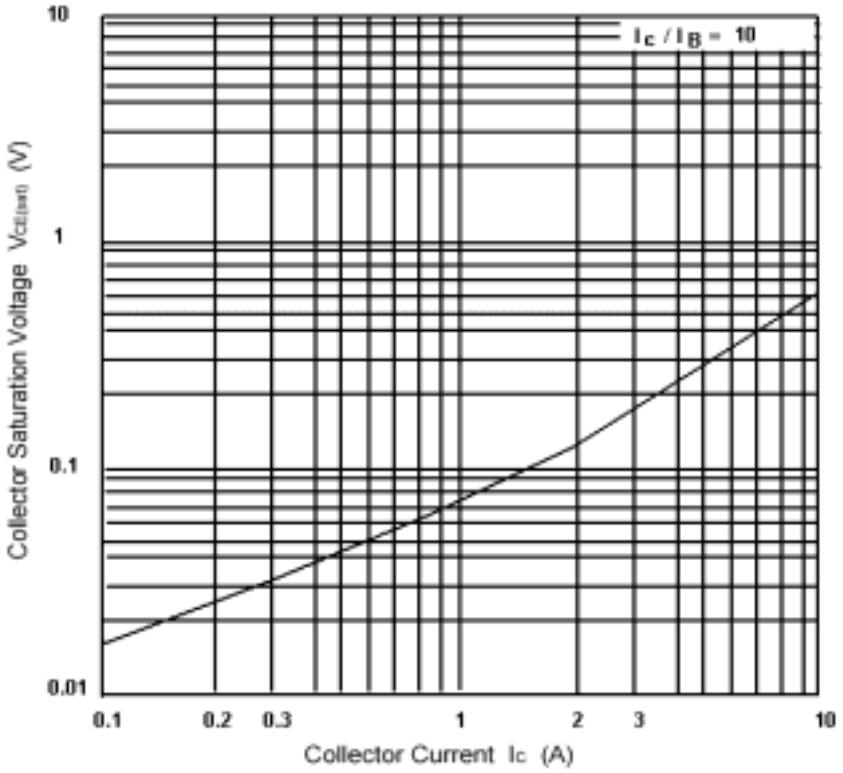


Fig.4 Collector-Emitter Saturation Voltage

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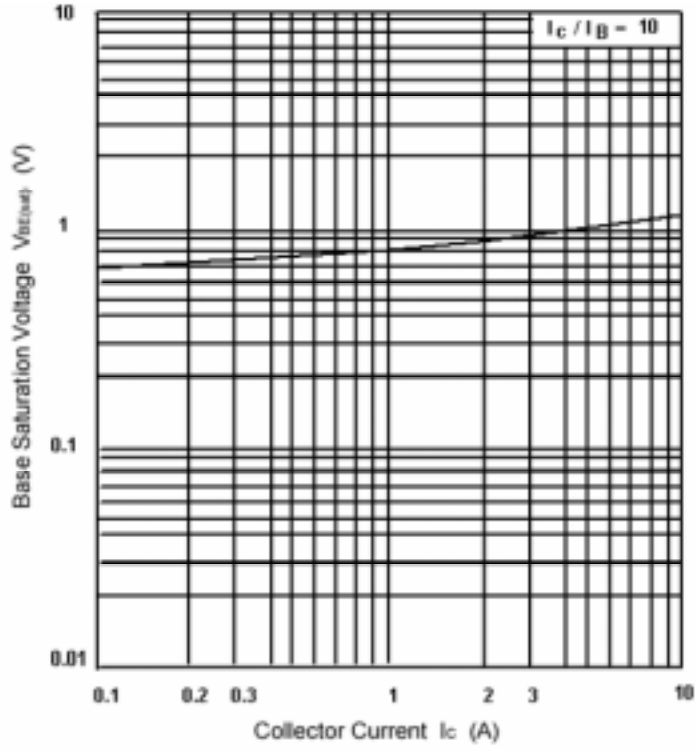


Fig.5 Base-Emitter Saturation Voltage

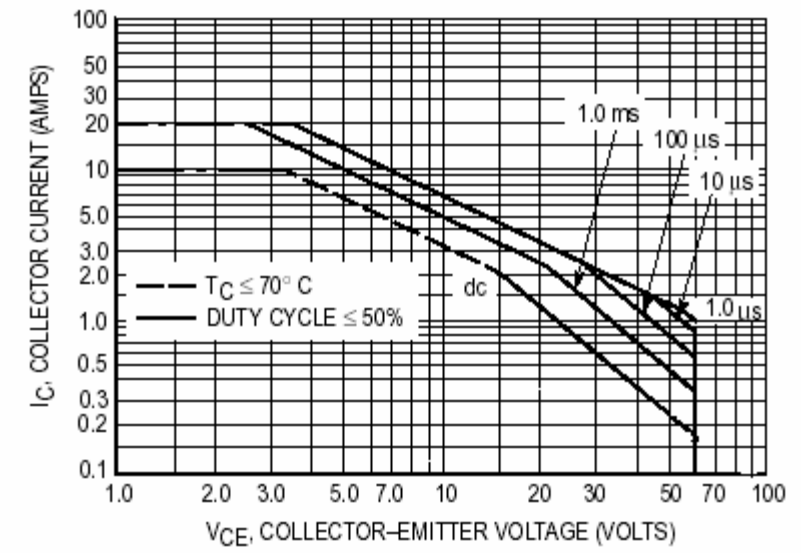


Fig.6 Safe Operating Area