

Silicon NPN Power Transistors

2SD1445 2SD1445A

DESCRIPTION

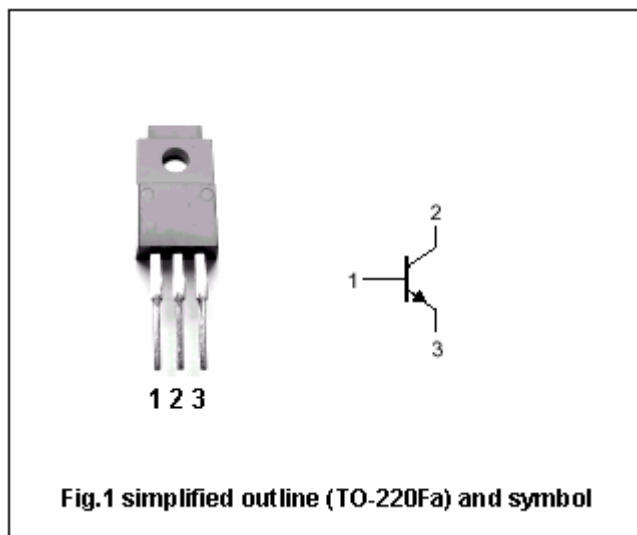
- With TO-220Fa package
- Complement to type 2SB948/948A
- High speed switching
- Low collector saturation voltage

APPLICATIONS

- For power amplification, power switching and low-voltage switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	2SD1445	40	V
		2SD1445A	50	
V _{CEO}	Collector-emitter voltage	2SD1445	20	V
		2SD1445A	40	
V _{EBO}	Emitter-base voltage	Open collector	5	V
I _C	Collector current		10	A
I _{CM}	Collector current-peak		20	A
P _C	Collector power dissipation	T _a =25°C	2	W
		T _C =25°C	40	
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-55~150	°C

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CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	2SD1445	$I_C=10mA$; $I_B=0$	20			V
		2SD1445A		40			
V_{CEsat}	Collector-emitter saturation voltage		$I_C=10A$; $I_B=0.33A$			0.6	V
V_{BEsat}	Base-emitter saturation voltage		$I_C=10A$; $I_B=0.33A$			1.5	V
I_{CBO}	Collector cut-off current	2SD1445	$V_{CB}=40V$; $I_E=0$			50	μA
		2SD1445A	$V_{CB}=50V$; $I_E=0$				
I_{EBO}	Emitter cut-off current		$V_{EB}=5V$; $I_C=0$			50	μA
h_{FE-1}	DC current gain		$I_C=0.1A$; $V_{CE}=2V$	45			
h_{FE-2}	DC current gain		$I_C=3A$; $V_{CE}=2V$	90		260	
f_T	Transition frequency		$I_C=0.5A$; $V_{CE}=10V$; $f=10MHz$		120		MHz
C_{OB}	Collector output capacitance		$I_E=0$; $f=1MHz$; $V_{CB}=10V$		200		pF

Switching times

t_{on}	Trun-on time	$I_C=3A$ $I_{B1}=0.1A$, $I_{B2}=-0.1A$ $V_{CC}=20V$		0.3		μs
t_{stg}	Storage time			0.4		μs
t_f	Fall time			0.1		μs

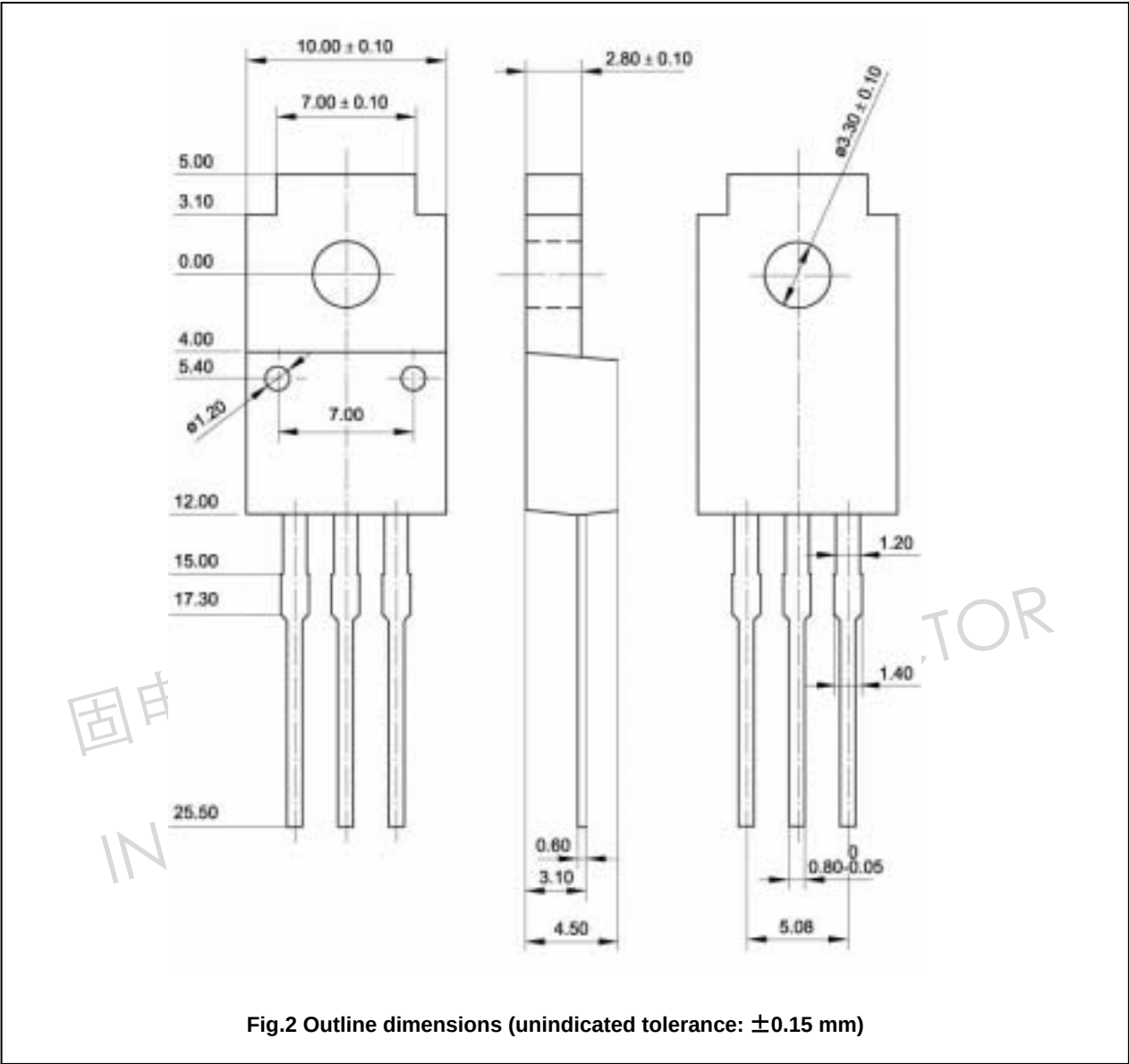
◆ h_{FE-2} Classifications

Q	P
90-180	130-260

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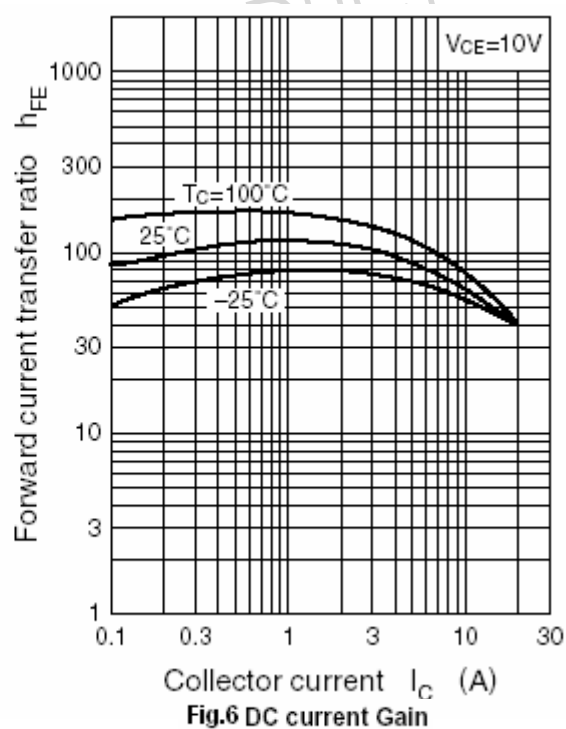
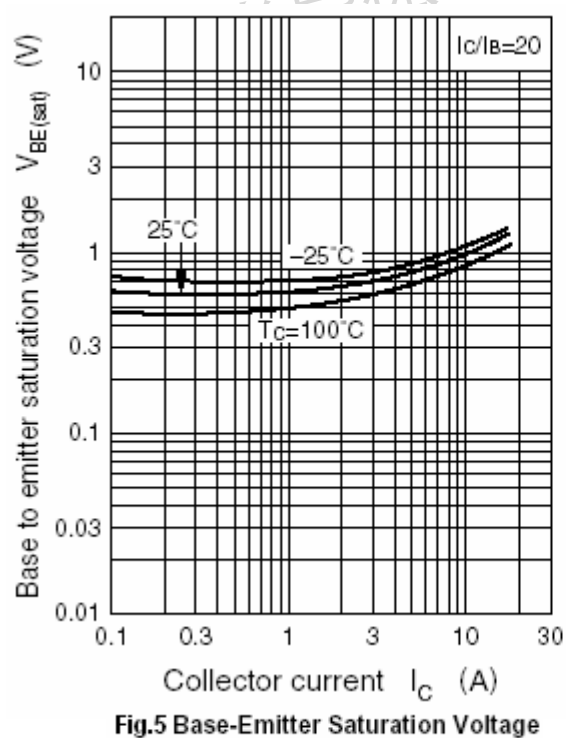
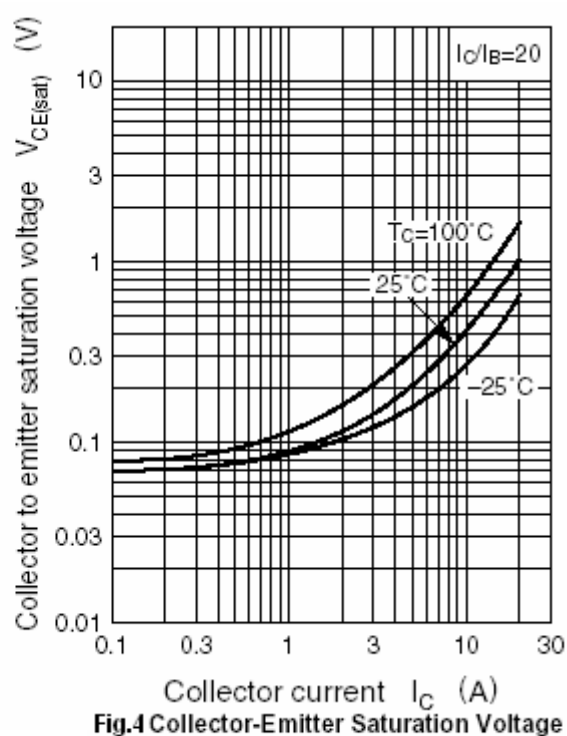
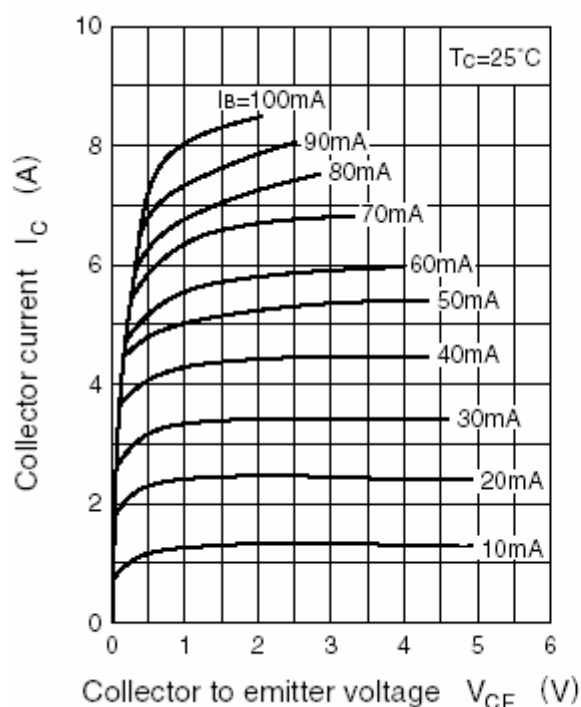
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PACKAGE OUTLINE



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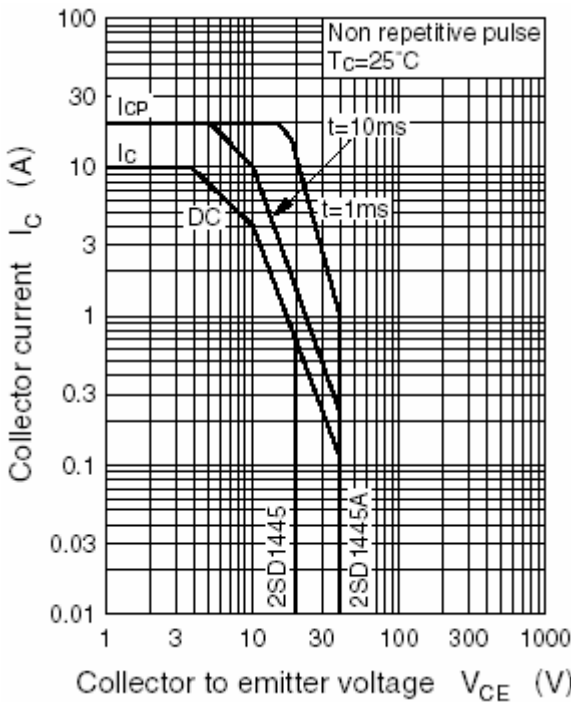


Fig.7 Safe Operating Area

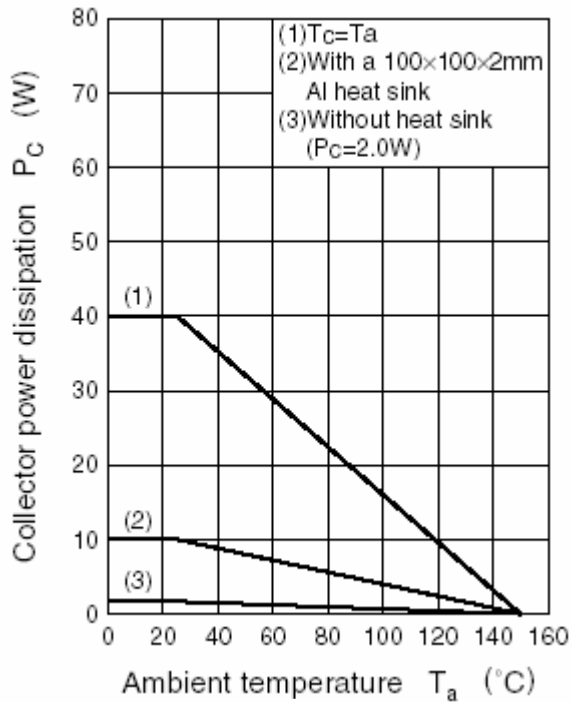


Fig.8 Power Derating

固电半导体
INCHANGE SEMICONDUCTOR