

Inchange Semiconductor

Product Specification

Silicon PNP Power Transistors

2SA1388

DESCRIPTION

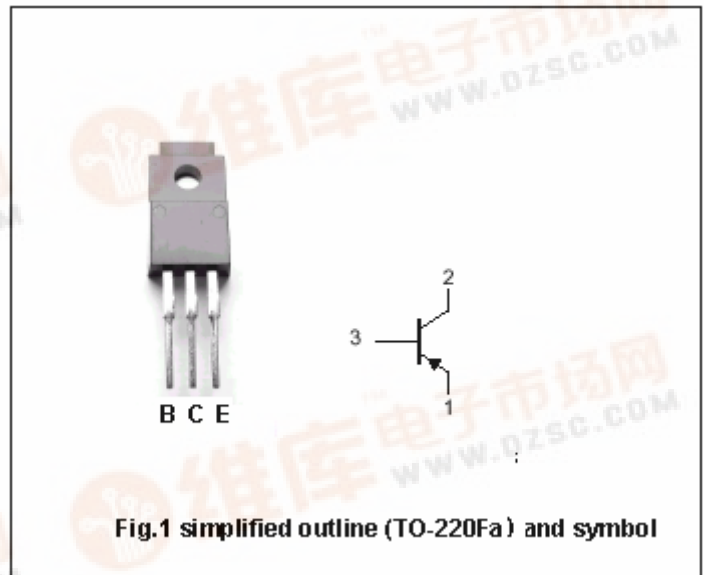
- With TO-220Fa package
- Low collector saturation voltage
- High speed switching time
- Complementary to 2SC3540

APPLICATIONS

- High current switching applications

PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base



Absolute maximum ratings($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	-100	V
V_{CEO}	Collector-emitter voltage	Open base	-80	V
V_{EBO}	Emitter-base voltage	Open collector	-7	V
I_C	Collector current (DC)		-5	A
I_{CM}	Collector current (pulse)		-8	A
P_C	Collector power dissipation	$T_a=25^{\circ}\text{C}$	2	W
		$T_C=25^{\circ}\text{C}$	25	
T_j	Junction temperature		150	$^{\circ}\text{C}$
T_{stg}	Storage temperature		-55~150	$^{\circ}\text{C}$

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =-10mA ; I _B =0	-80			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =-3A ; I _B =-0.15A		-0.2	-0.4	V
V _{BEsat}	Base-emitter saturation voltage	I _C =-3A ; I _B =-0.15A		-0.9	-1.2	V
I _{CBO}	Collector cut-off current	V _{CB} =-100V; I _E =0			-1	μ A
I _{EBO}	Emitter cut-off current	V _{EB} =-7V; I _C =0			-1	μ A
h _{FE-1}	DC current gain	I _C =-1A ; V _{CE} =-1V	70		240	
h _{FE-2}	DC current gain	I _C =-3A ; V _{CE} =-1V	30			
f _T	Transistion frequency	I _C =-1A ; V _{CE} =-4V		60		MHz
C _{ob}	Collector output capacitance	I _E =0; V _{CE} =-10V; f=1MHz		200		pF

Switching times

t _{on}	Turn-on time	I _{B1} =-I _{B2} =-0.15A V _{CC} =30V; R _L =10 Ω		0.2		μ s
t _s	Storage time			1.0		μ s
t _f	Fall time			0.1		μ s

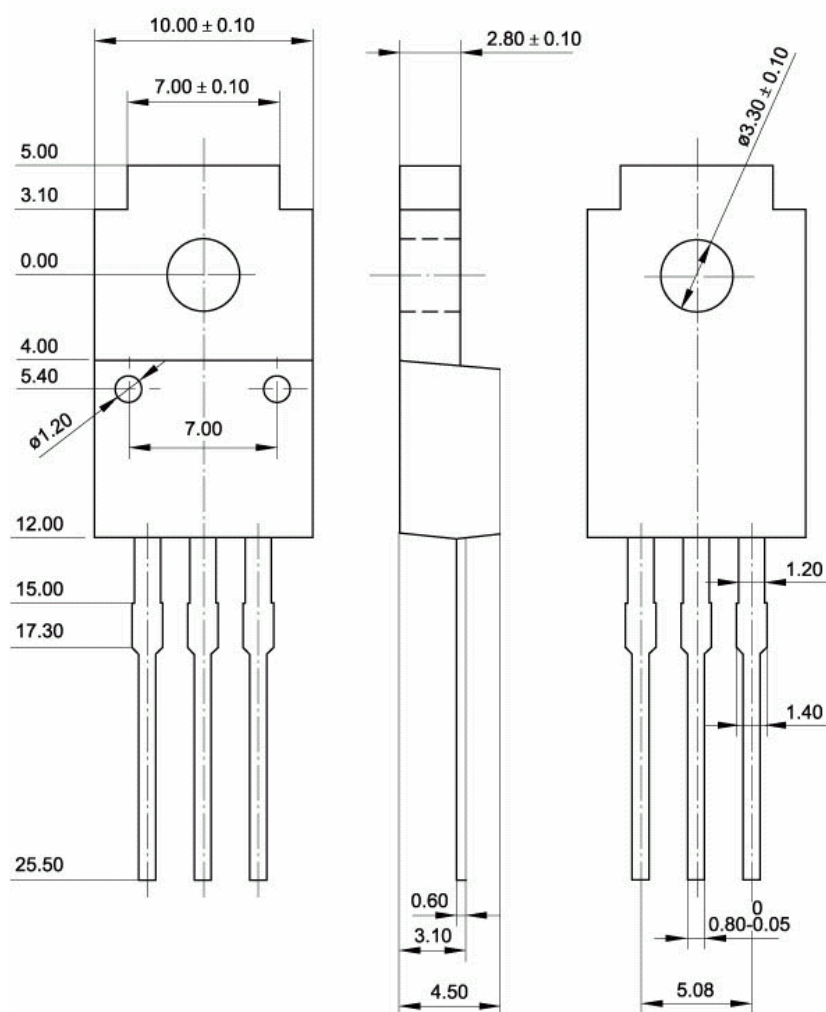
◆ h_{FE-1} Classifications

O	Y
70-140	120-240

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PACKAGE OUTLINE

Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)

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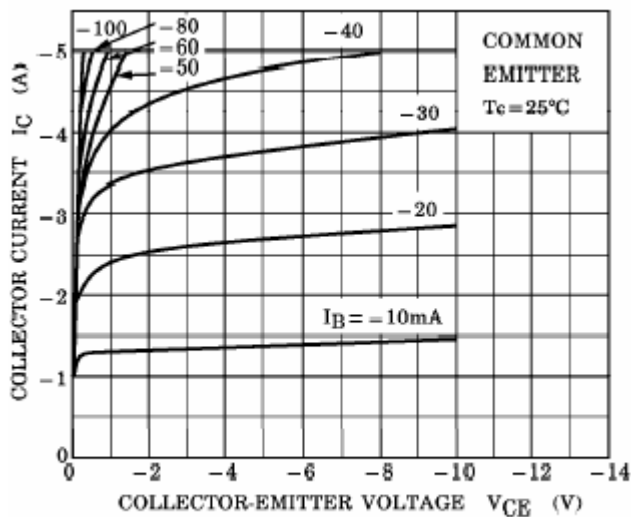


Fig.3 Static Characteristic

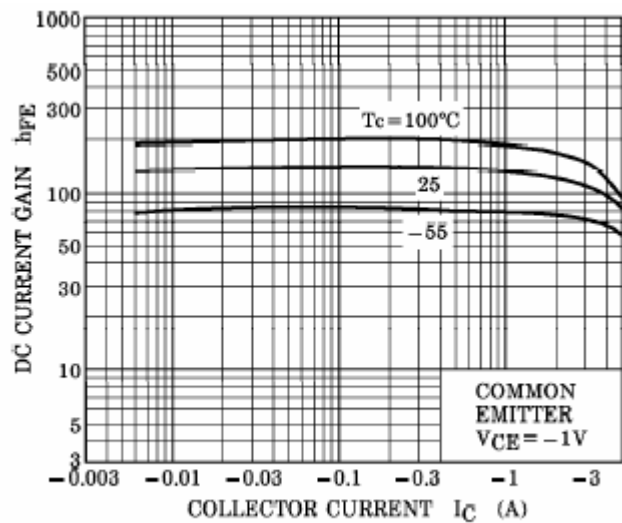


Fig.4 DC current Gain

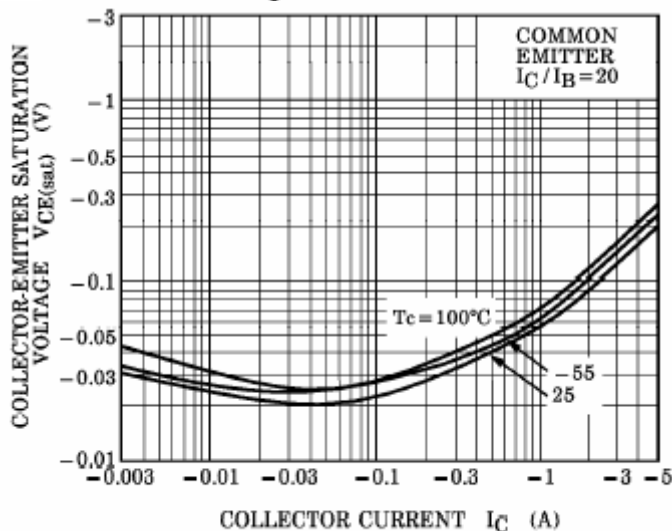


Fig.5 Collector-Emitter Saturation Voltage

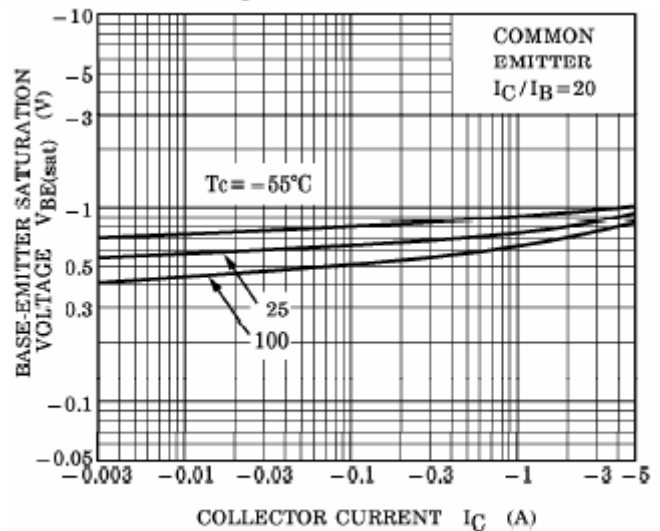


Fig.6 Base-Emitter Saturation Voltage

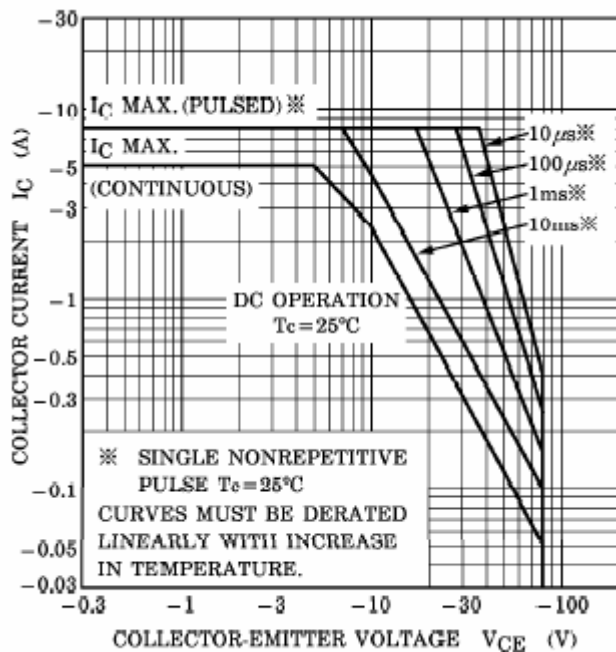


Fig.7 Safe Operating Area