

Silicon PNP Power Transistors

2SA1387

DESCRIPTION

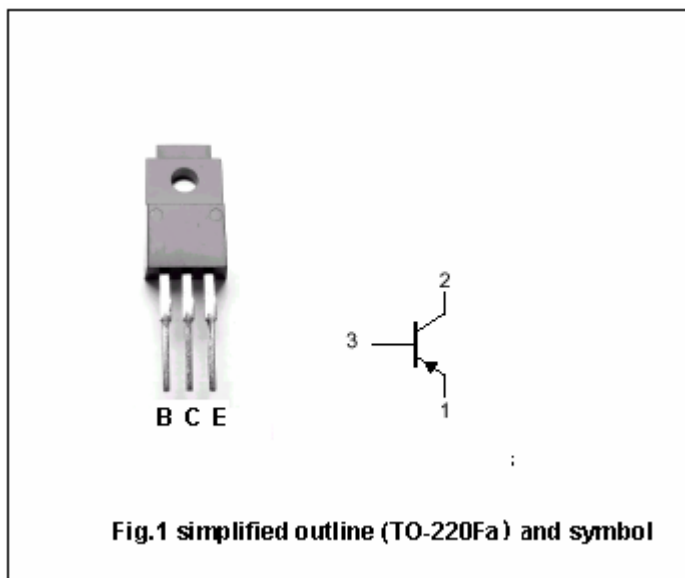
- With TO-220Fa package
- Low collector saturation voltage
- High speed switching time
- High DC current gain

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	-60	V
V_{CEO}	Collector-emitter voltage	Open base	-50	V
V_{EBO}	Emitter-base voltage	Open collector	-7	V
I_C	Collector current		-5	A
I_B	Base current		-1	A
P_C	Collector power dissipation	$T_a=25^\circ\text{C}$	2	W
		$T_C=25^\circ\text{C}$	20	
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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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	$I_C=-10mA$; $I_B=0$	-50			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=-3A$; $I_B=-0.075A$		-0.15	-0.4	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=-3A$; $I_B=-0.075A$		-0.8	-1.2	V
I_{CBO}	Collector cut-off current	$V_{CB}=-50V$; $I_E=0$			-1	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=-7V$; $I_C=0$			-1	μA
h_{FE-1}	DC current gain	$I_C=-1A$; $V_{CE}=-1V$	150		400	
h_{FE-2}	DC current gain	$I_C=-3A$; $V_{CE}=-1V$	70			
f_T	Transistion frequency	$I_C=-1A$; $V_{CE}=-4V$		80		MHz
C_{ob}	Collector output capacitance	$I_E=0$; $V_{CE}=-10V$; $f=1MHz$		200		pF

Switching times

T_{on}	Turn-on time	$I_{B1}=-I_{B2}=-0.075A$ $V_{CC}=-30V$; $R_L=10\Omega$		0.2		μs
t_s	Storage time			1.0		μs
t_f	Fall time			0.2		μs



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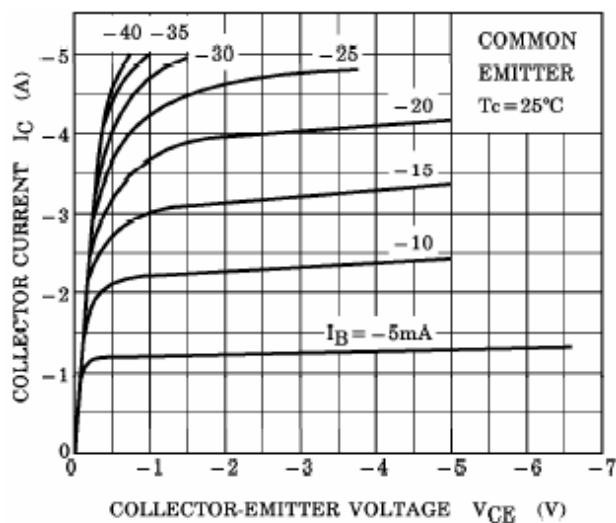


Fig.3 Static Characteristic

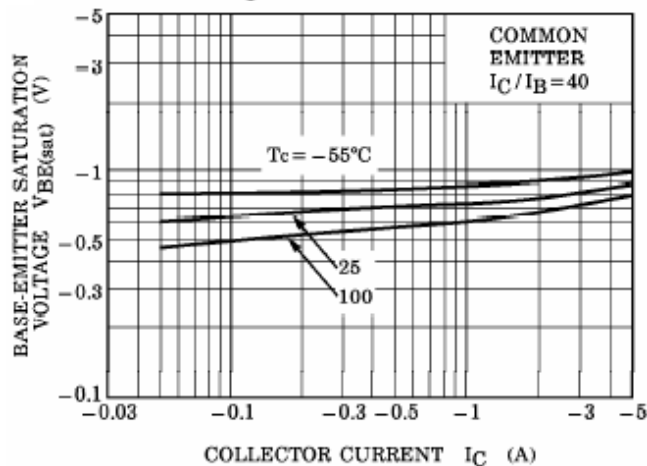


Fig.5 Base-Emitter Saturation Voltage

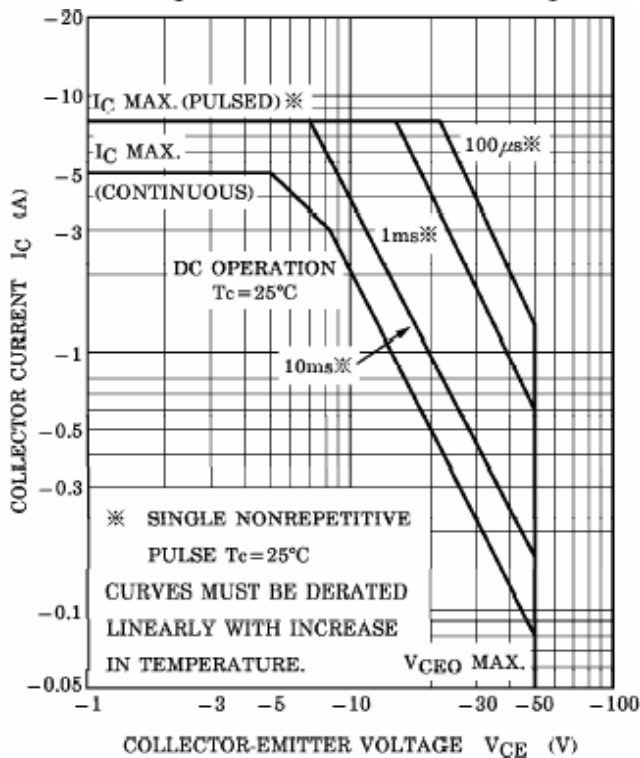


Fig.7 Safe Operating Area

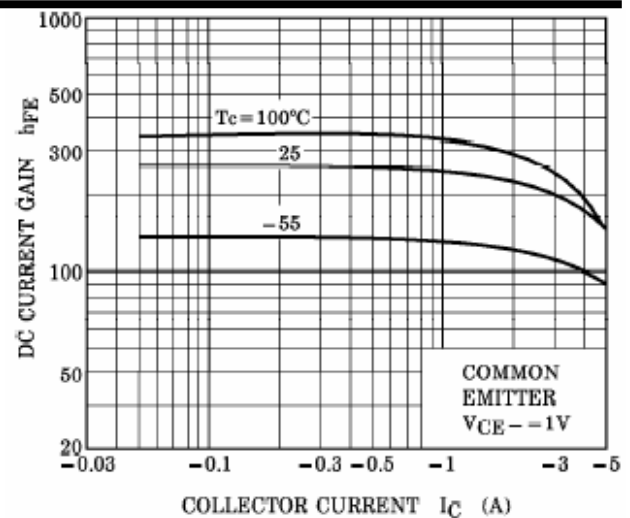


Fig.4 DC current Gain

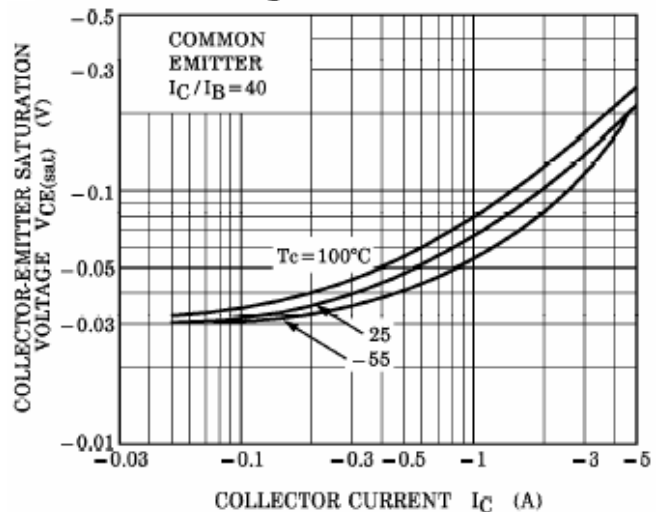


Fig.6 Collector-Emitter Saturation Voltage