

Silicon NPN Power Transistors

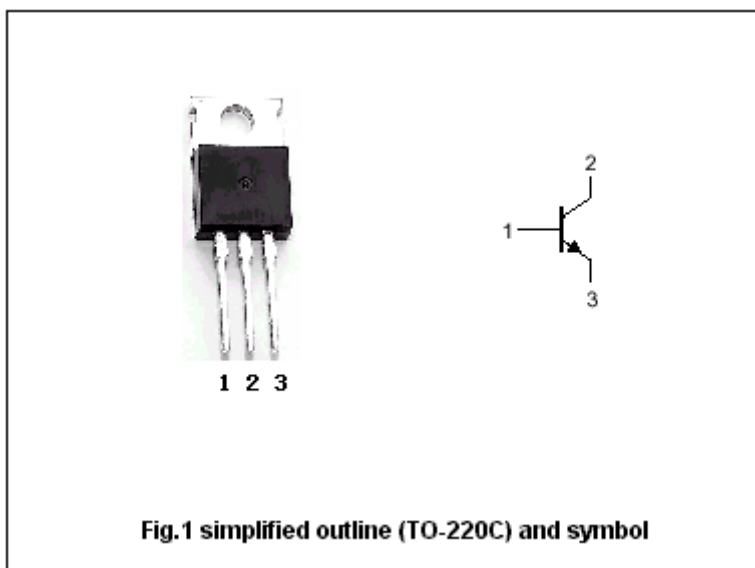
KSC5021

DESCRIPTION

- With TO-220C package
- High voltage and high reliability
- High speed switching
- Wide area of safe operation

PINNING

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

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	800	V
V_{CEO}	Collector-emitter voltage	Open base	500	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		5	A
I_{CM}	Collector current-Peak		10	A
I_B	Base current		2	A
P_C	Collector dissipation	$T_C=25^{\circ}\text{C}$	50	W
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 =5mA ; I _B =0	500			V
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =1mA ; I _E =0	800			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =1mA ; I _C =0	7			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =3A ; I _B =0.6A			1.0	V
V _{BEsat}	Base-emitter saturation voltage	I _C =3A ; I _B =0.6A			1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =500V ; I _E =0			10	μ A
I _{EBO}	Emitter cut-off current	V _{EB} =5V ; I _C =0			10	μ A
h _{FE-1}	DC current gain	I _C =0.6A ; V _{CE} =5V	15		50	
h _{FE-2}	DC current gain	I _C =3A ; V _{CE} =5V	8			
f _T	Transition frequency	I _C =0.6A ; V _{CE} =10V		18		MHz
C _{ob}	Collector output capacitance	I _E =0 ; f=1MHz ; V _{CB} =10V		80		pF

Switching times

t _{on}	Turn-on time	I _C =5I _{B1} =-2.5I _{B2} =4A V _{CC} =200V ; R _L =50 Ω			0.5	μ s
t _s	Storage time				3.0	μ s
t _f	Fall time				0.3	μ s

◆ h_{FE-1} Classifications

R	O	Y
15-30	20-40	30-50

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PACKAGE OUTLINE



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

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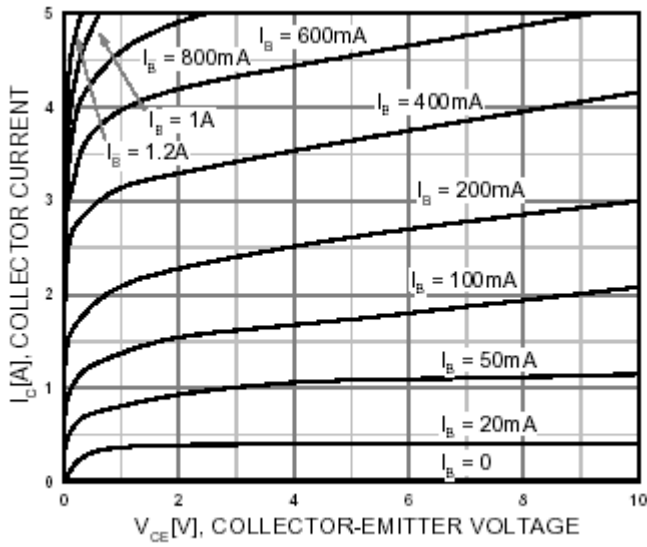


Fig.3 Static Characteristic

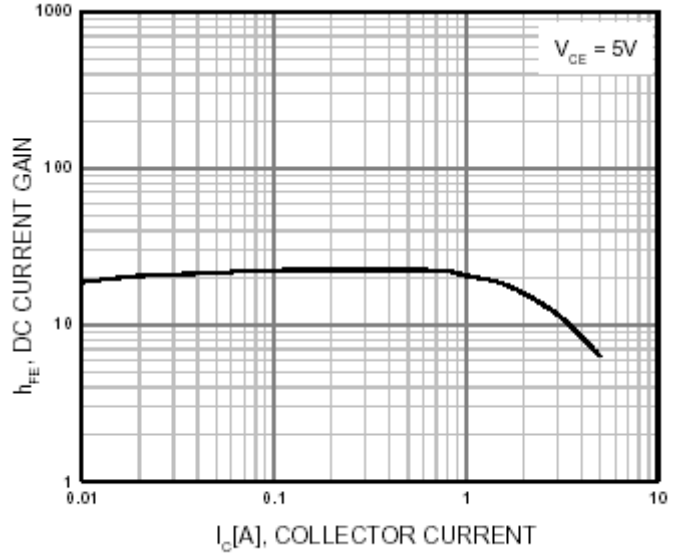


Fig.4 DC current Gain

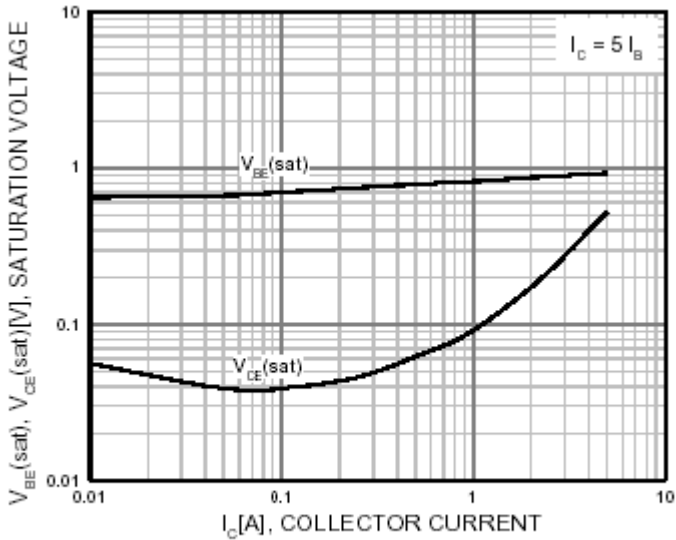


Fig.5 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

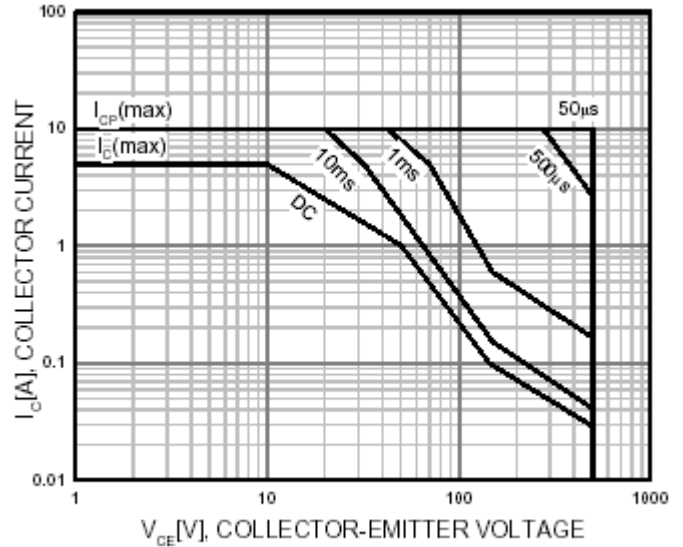


Fig.6 Safe Operating Area