

## Silicon NPN Power Transistors

KSC5027

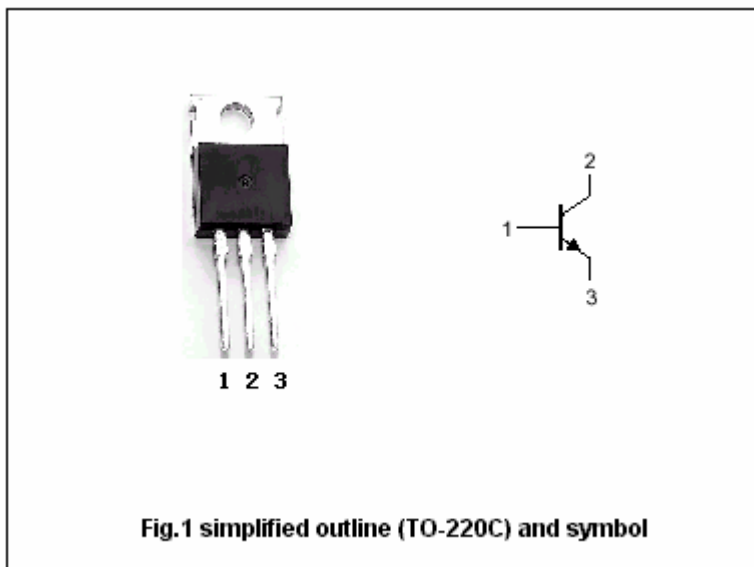
## DESCRIPTION

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	1100	V
$V_{CEO}$	Collector-emitter voltage	Open base	800	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current (DC)		3	A
$I_{CM}$	Collector current-Peak		10	A
$I_B$	Base current		1.5	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

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=5mA ; I_B=0$	800			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=1mA ; I_E=0$	1100			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=1mA ; I_C=0$	7			V
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=1.5A ; I_B=0.3A$			2.0	V
$V_{BEsat}$	Base-emitter saturation voltage	$I_C=1.5A ; I_B=0.3A$			1.5	V
$I_{CBO}$	Collector cut-off current	$V_{CB}=800V ; I_E=0$			10	$\mu A$
$I_{EBO}$	Emitter cut-off current	$V_{EB}=5V ; I_C=0$			10	$\mu A$
$h_{FE-1}$	DC current gain	$I_C=0.2A ; V_{CE}=5V$	10		40	
$h_{FE-2}$	DC current gain	$I_C=1A ; V_{CE}=5V$	8			
$f_T$	Transition frequency	$I_C=0.2A ; V_{CE}=10V$		15		MHz
$C_{ob}$	Collector output capacitance	$f=1MHz ; V_{CB}=10V$		60		pF

## Switching times

$t_{on}$	Turn-on time	$I_C=5 I_{B1}=-2.5 I_{B2}=2A$ $V_{CC}=400V$ $R_L=200\Omega$			0.5	$\mu s$
$t_s$	Storage time				3.0	$\mu s$
$t_f$	Fall time				0.3	$\mu s$

◆  $h_{FE-1}$  Classifications

N	R	O
10-20	15-30	20-40

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PACKAGE OUTLINE



Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.10$  mm)

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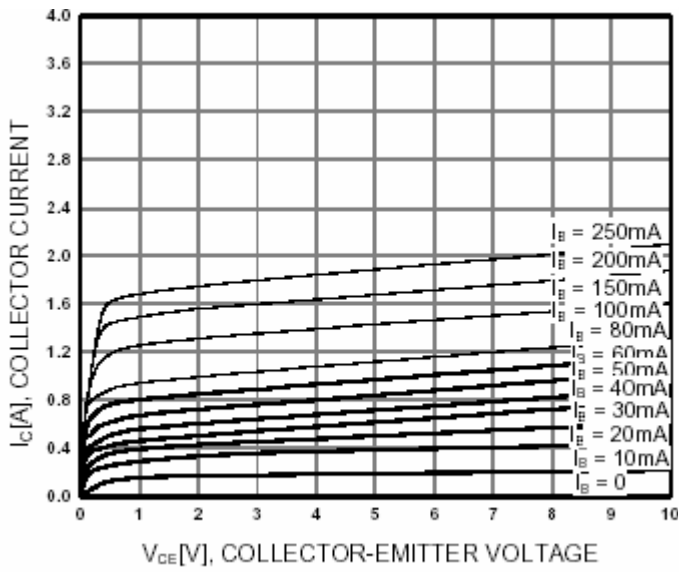


Fig.3 Static Characteristic

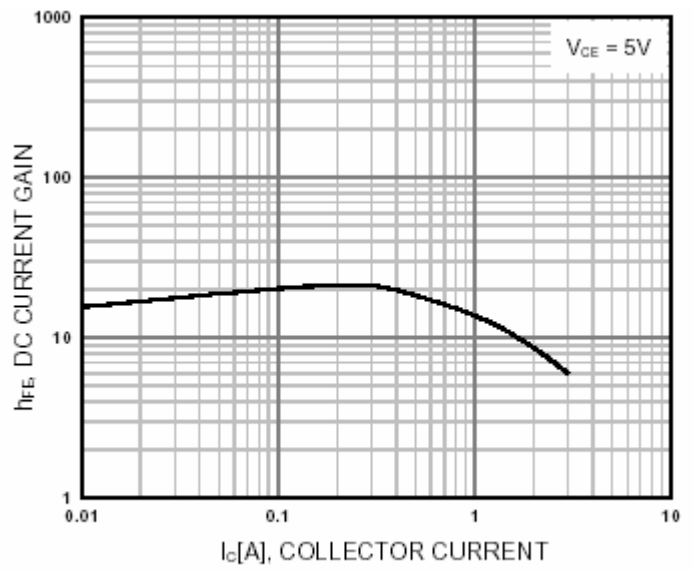


Fig.4 DC current Gain

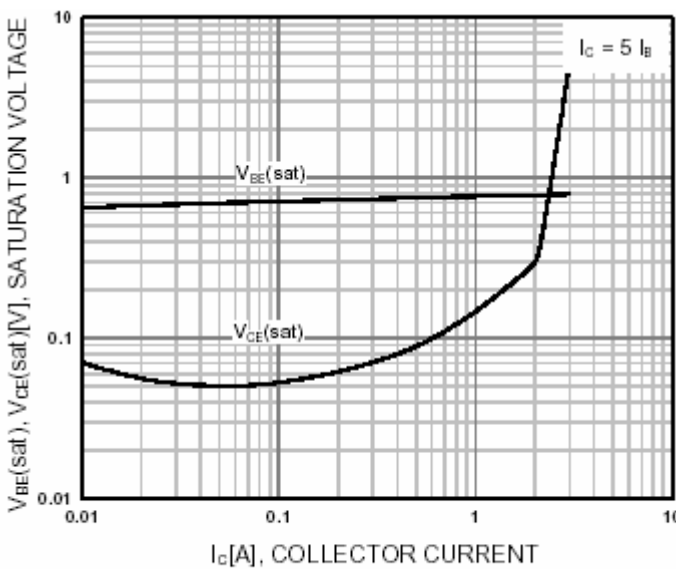


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

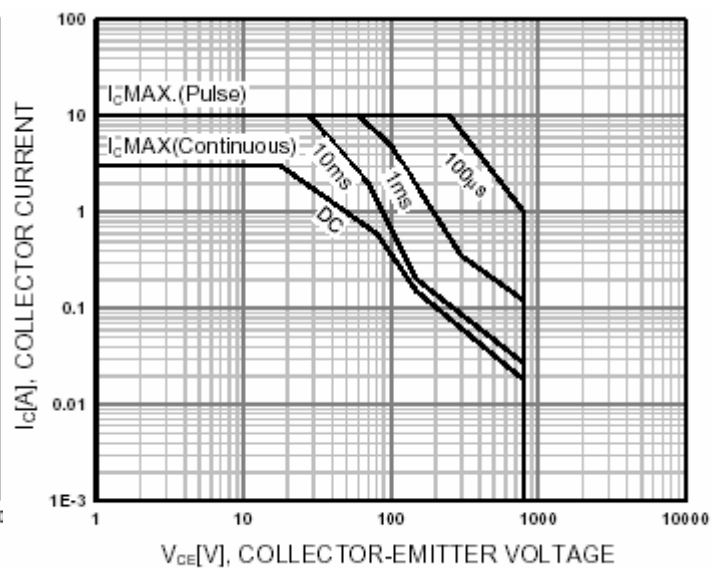


Fig.6 Safe Operating Area