



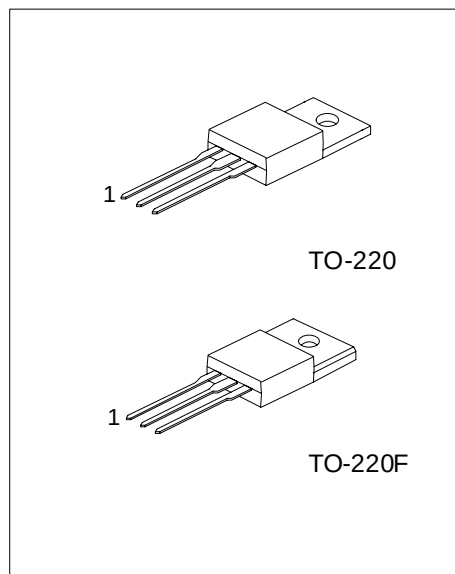
2SC5027

NPN SILICON TRANSISTOR

HIGH VOLTAGE AND HIGH RELIABILITY

FEATURES

- * High Voltage ($V_{CE0} = 800V$)
- * High Speed Switching
- * Wide SOA



*Pb-free plating product number: 2SC5027L

ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SC5027-x-TA3-T	2SC5027L-x-TA3-T	TO-220	B	C	E	Tube
2SC5027-x-TF3-T	2SC5027L-x-TF3-T	TO-220F	B	C	E	Tube

2SC5027L-x-TA3-T (1) Packing Type (2) Package Type (3) Rank (4) Lead Plating	(1) T: Tube (2) TA3: TO-220, TF3: TO-220F (3) x: refer to Classification of h_{FE1} (4) L: Lead Free Plating, Blank: Pb/Sn
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■ ABSOLUTE MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	850	V
Collector-Emitter Voltage	V_{CEO}	800	V
Collector-Emitter Voltage	V_{EBO}	7	V
Peak Collector Current	I_C	3	A
Collector Current (Pulse)	I_{CP}	10	A
Base Current	I_B	1.5	A
Power Dissipation	P_C	50	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$, unless otherwise specified.)

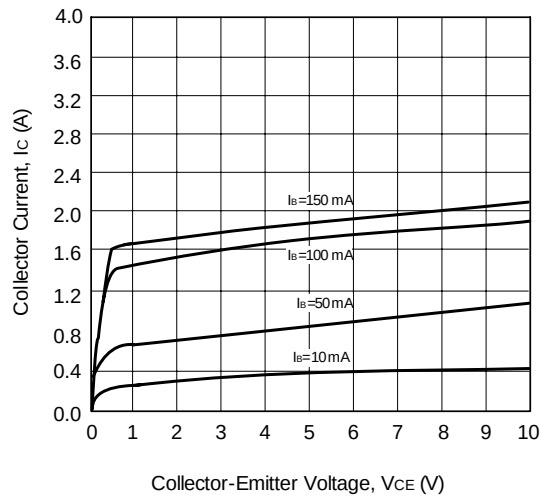
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=1\text{mA}, I_E=0$	850			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=5\text{mA}, I_B=0$	800			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=1\text{mA}, I_C=0$	7			V
Collector-Emitter sustaining Voltage	$V_{CEX(SUS)}$	$I_C=1.5\text{A}, I_{B1}=-I_{B2}=0.3\text{A}$ $L=2\text{mH}$, Clamped	800			V
Collector Cut-off Current	I_{CBO}	$V_{CB}=800\text{V}, I_E=0$			10	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=5\text{V}, I_C=0.2\text{A}$	10		40	
	h_{FE2}	$V_{CE}=5\text{V}, I_C=1\text{A}$	8			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=1.5\text{A}, I_B=0.3\text{A}$			2	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=1.5\text{A}, I_B=0.3\text{A}$			1.5	V
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}, I_E=0$		60		pF
Current Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=0.2\text{A}$		15		MHz
Turn ON Time	t_{ON}	$V_{CC}=400\text{V}$			0.5	μs
Storage Time	t_S	$I_C=5I_{B1}=-2.5I_{B2}=2\text{A}$			3	μs
Fall Time	t_F	$R_L=200\Omega$			0.3	μs

■ CLASSIFICATION of h_{FE1}

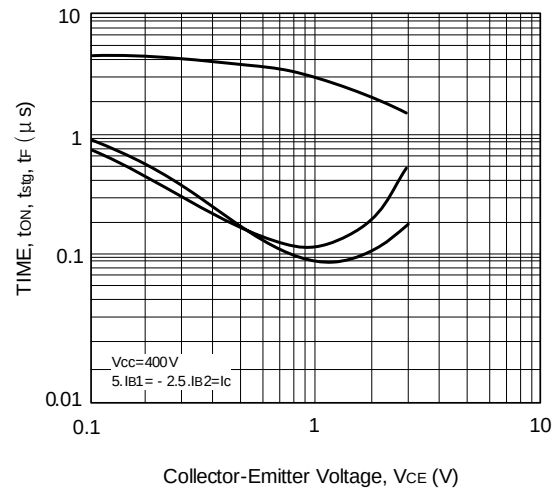
RANK	N	R	O
RANGE	10 ~ 20	15 ~ 30	20 ~ 40

TYPICAL CHARACTERISTICS

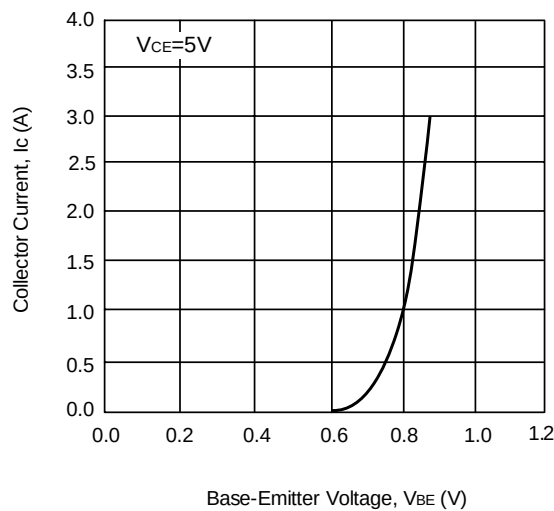
Static Characteristic
Collector Current vs. Collector-Emitter Voltage



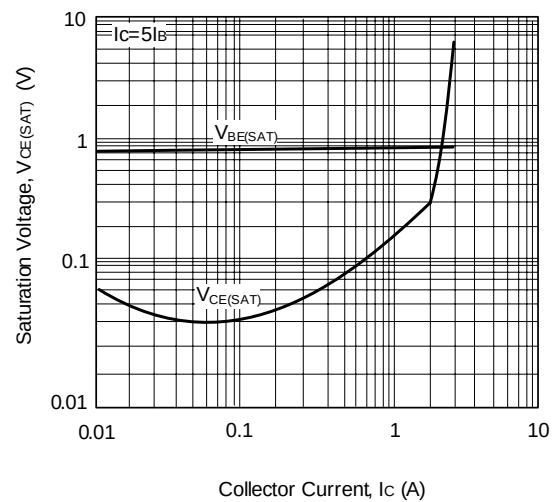
Switching Time
Time vs. Collector-Emitter Voltage



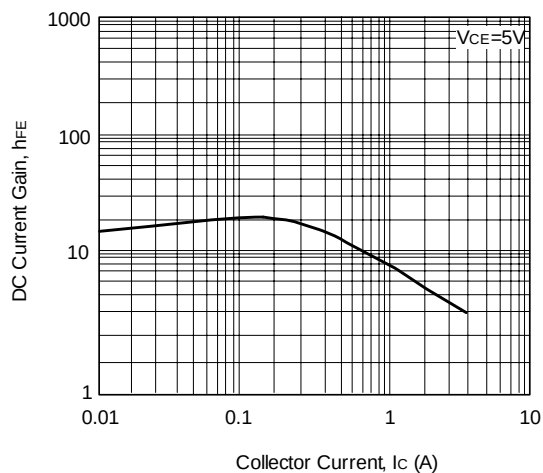
Collector Current vs. Base-Emitter Voltage



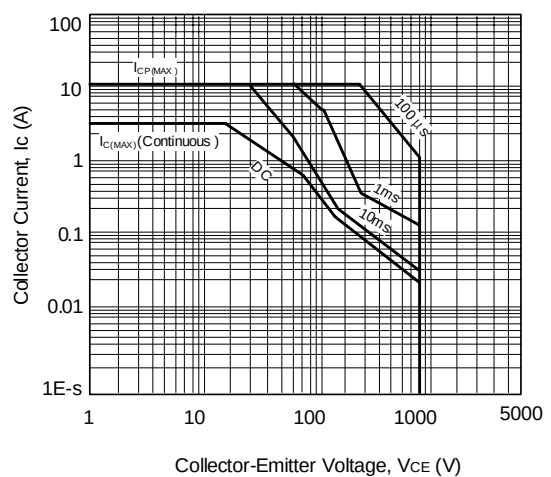
Saturation Voltage vs. Collector Current



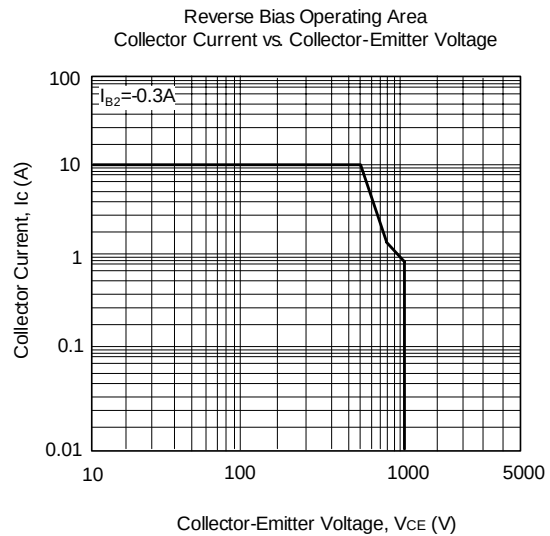
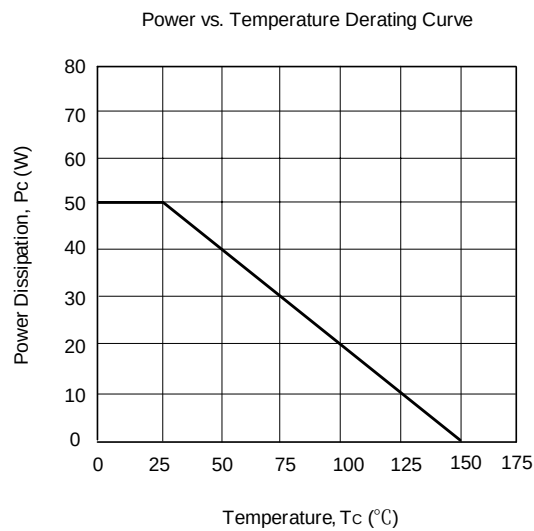
DC Current Gain vs. Collector Current



Safe Operating Area
Collector Current vs. Collector-Emitter Voltage



■ TYPICAL CHARACTERISTICS(Cont.)



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