



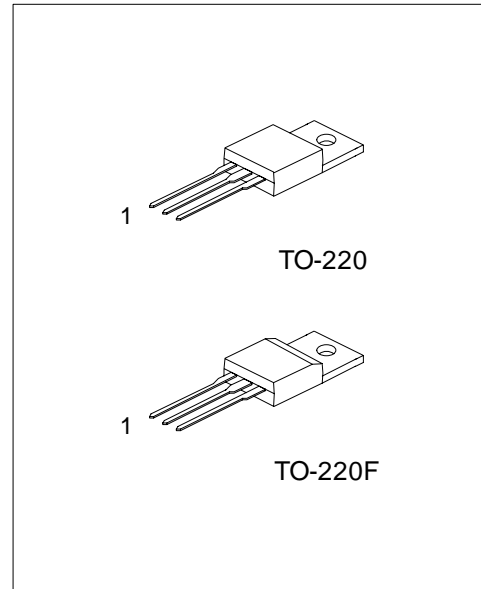
# 2SC5027E

## NPN SILICON TRANSISTOR

HIGH VOLTAGE AND HIGH RELIABILITY TRANSISTOR

■ FEATURES

- \* High Speed Switching
- \* Wide SOA



\*Pb-free plating product number: 2SC5027EL

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SC5027E-x-TA3-T	2SC5027EL-x-TA3-T	TO-220	B	C	E	Tube
2SC5027E-x-TF3-T	2SC5027EL-x-TF3-T	TO-220F	B	C	E	Tube

<p>2SC5027EL-x-TA3-T</p>	<p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Rank</p> <p>(4) Lead Plating</p>	<p>(1) T: Tube</p> <p>(2) TA3: TO-220, TF3: TO-220F</p> <p>(3) x: refer to Classification of <math>h_{FE1}</math></p> <p>(4) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub> = 25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	750	V
Collector-Emitter Voltage	V <sub>CEO</sub>	700	V
Collector-Emitter Voltage	V <sub>EBO</sub>	7	V
Peak Collector Current	I <sub>C</sub>	3	A
Collector Current (Pulse)	I <sub>CP</sub>	10	A
Base Current	I <sub>B</sub>	1.5	A
Power Dissipation	P <sub>D</sub>	50	W
Junction Temperature	T <sub>J</sub>	150	
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	

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.

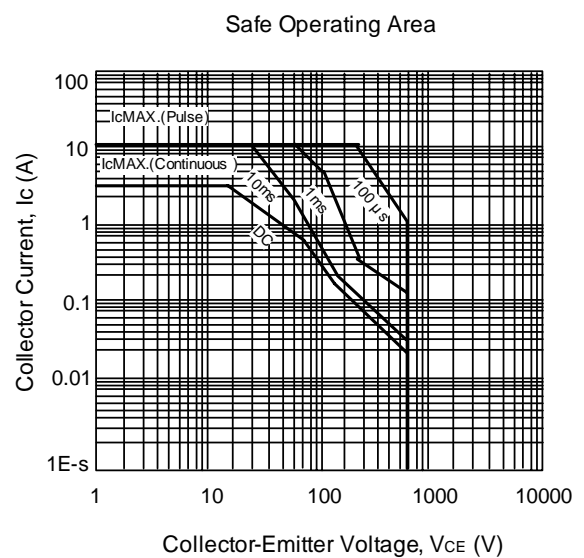
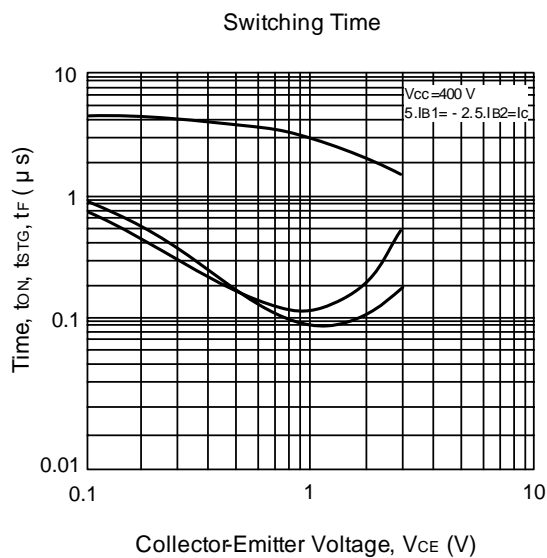
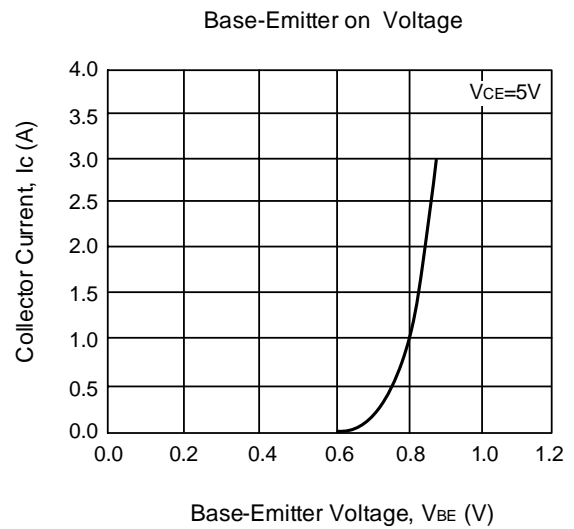
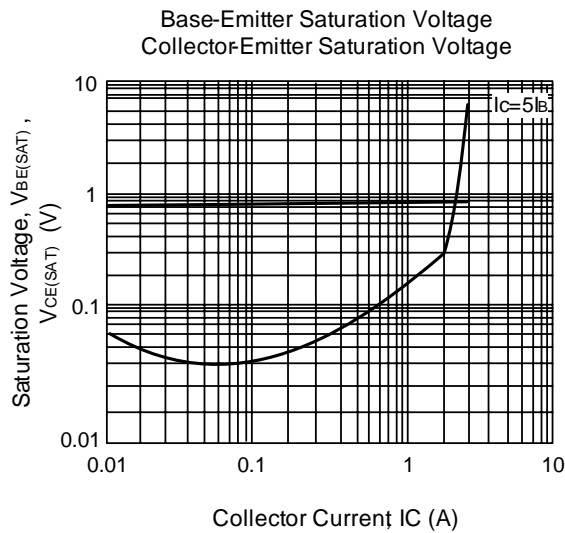
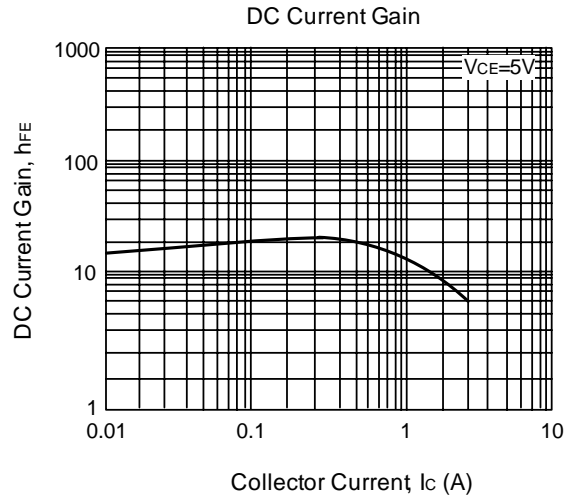
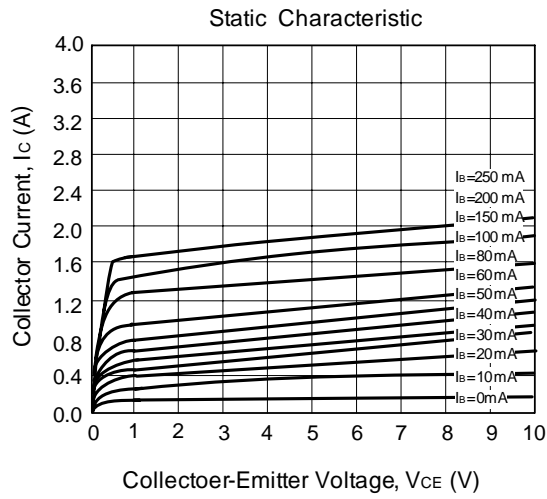
■ ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25 °C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	750			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =5mA, I <sub>B</sub> =0	700			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	7			V
Collector-Emitter sustaining Voltage	V <sub>CEO(SUS)</sub>	I <sub>C</sub> =1.5A, I <sub>B1</sub> = -I <sub>B2</sub> =0.3A L=2mH, Clamped	700			V
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =750V, I <sub>E</sub> =0			10	μA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			10	μA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.2A	10		40	
	h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =1A	8			
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.3A			2	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.3A			1.5	V
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz, I <sub>E</sub> =0		60		pF
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.2A		15		MHz
Turn ON Time	t <sub>ON</sub>	V <sub>CC</sub> =400V			0.5	μs
Storage Time	t <sub>S</sub>	I <sub>C</sub> =5I <sub>B1</sub> = -2.5I <sub>B2</sub> =2A			3	μs
Fall Time	t <sub>F</sub>	R <sub>L</sub> =200			0.3	μs

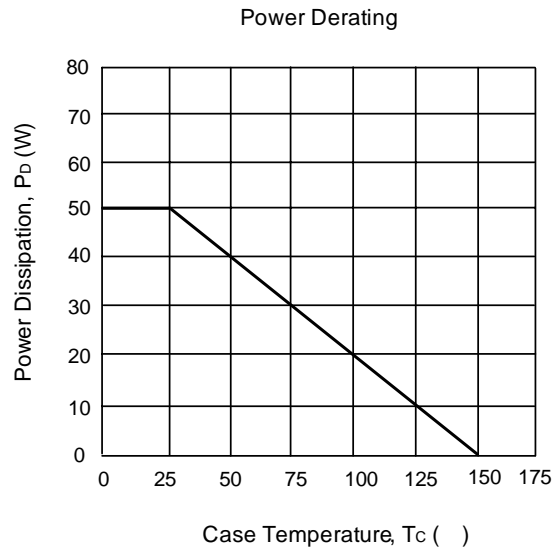
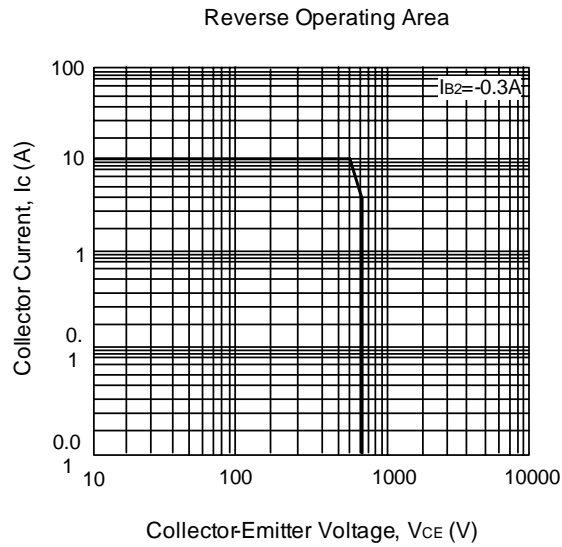
■ CLASSIFICATION of h<sub>FE1</sub>

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

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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