



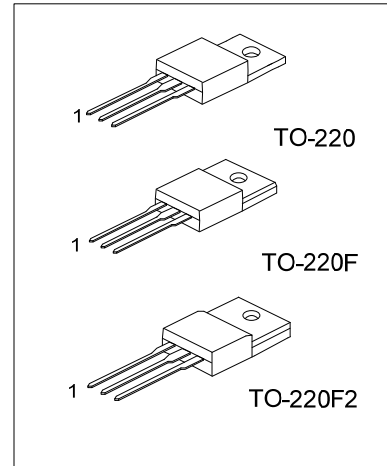
**2SC5027E**

**NPN SILICON TRANSISTOR**

HIGH VOLTAGE AND HIGH RELIABILITY TRANSISTOR

■ FEATURES

- \* High Speed Switching
- \* Wide SOA



■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SC5027EL-x-TA3-T	2SC5027EL-x-TA3-T	TO-220	B	C	E	Tube
2SC5027EL-x-TF2-T	2SC5027EL-x-TF2-T	TO-220F2	B	C	E	Tube
2SC5027EL-x-TF3-T	2SC5027EL-x-TF3-T	TO-220F	B	C	E	Tube

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CBO}$	750	V
Collector-Emitter Voltage		$V_{CEO}$	700	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	TO-220/TO-220F	$P_D$	50	W
	TO-220F2		52	
Junction Temperature		$T_J$	150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-40 ~ +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.

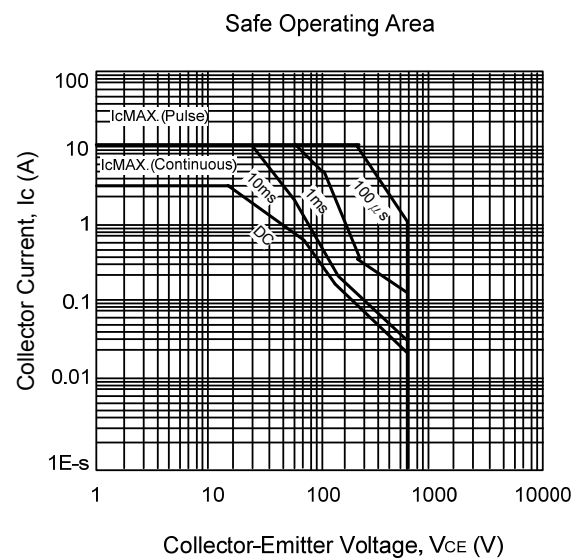
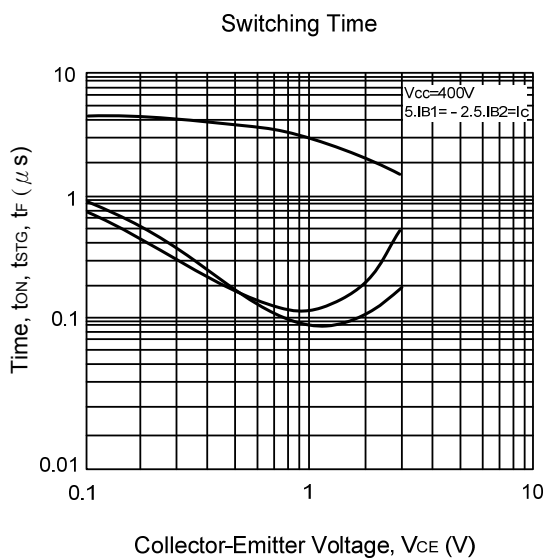
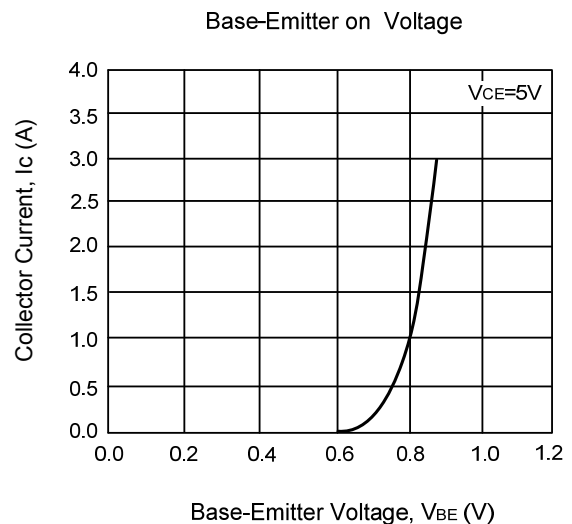
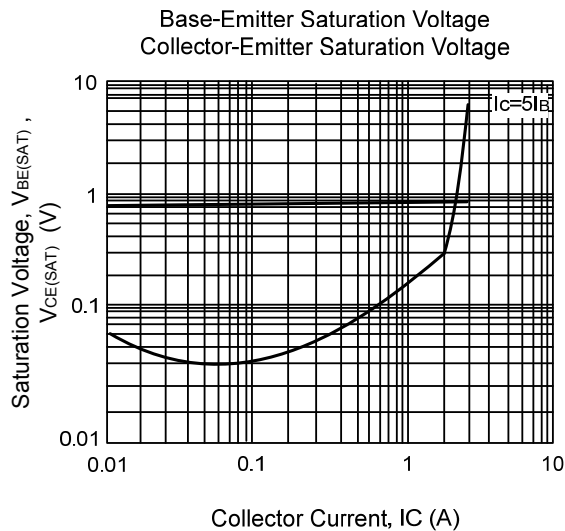
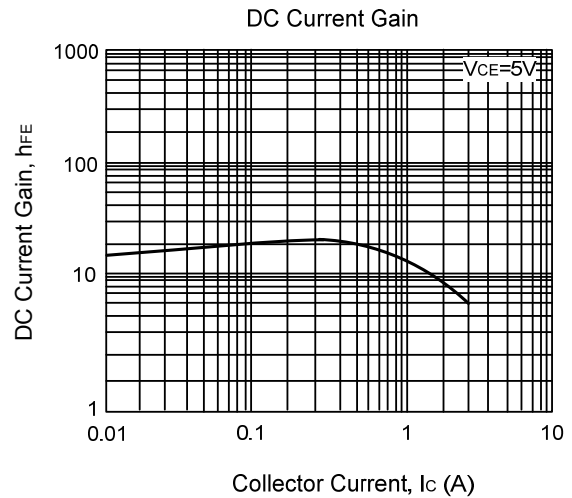
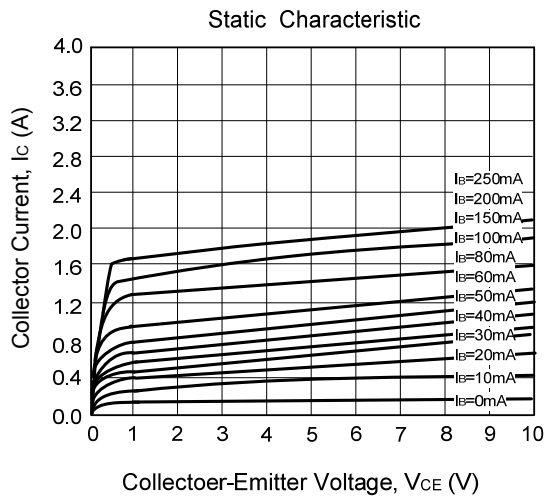
■ ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ , unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=1\text{mA}, I_E=0$	750			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=5\text{mA}, I_B=0$	700			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=1\text{mA}, I_C=0$	7			V
Collector-Emitter sustaining Voltage	$V_{CEO(SUS)}$	$I_C=1.5\text{A}, I_{B1}=-I_{B2}=0.3\text{A}$ $L=2\text{mH}$ , Clamped	700			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=750\text{V}, I_E=0$			10	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			10	$\mu\text{A}$
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	$\mu\text{s}$
Storage Time	$t_S$	$I_C=5\text{I}_{B1}=-2.5\text{I}_{B2}=2\text{A}$			3	$\mu\text{s}$
Fall Time	$t_F$	$R_L=200\Omega$			0.3	$\mu\text{s}$

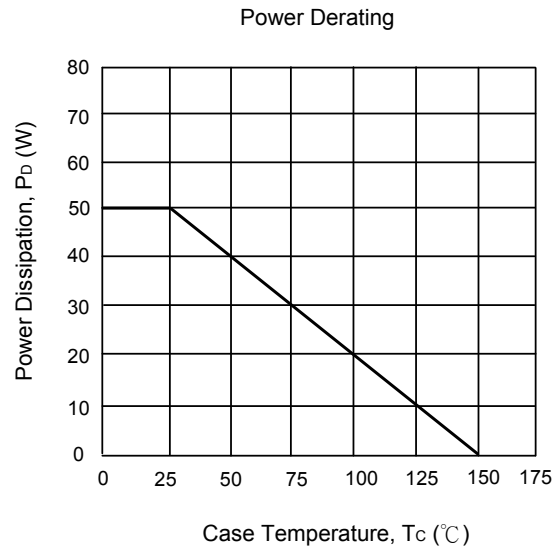
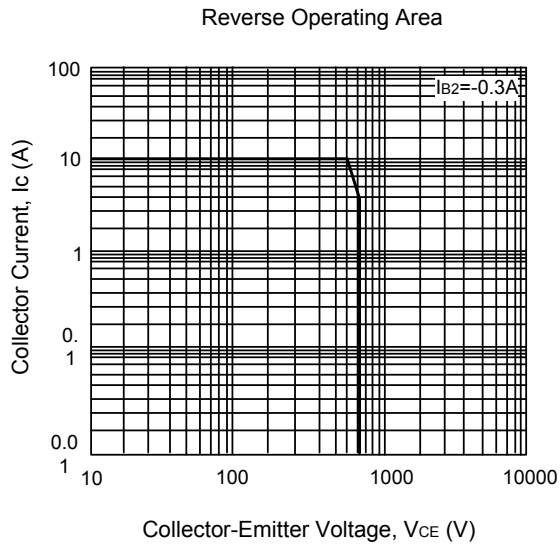
■ CLASSIFICATION of  $h_{FE1}$

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

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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