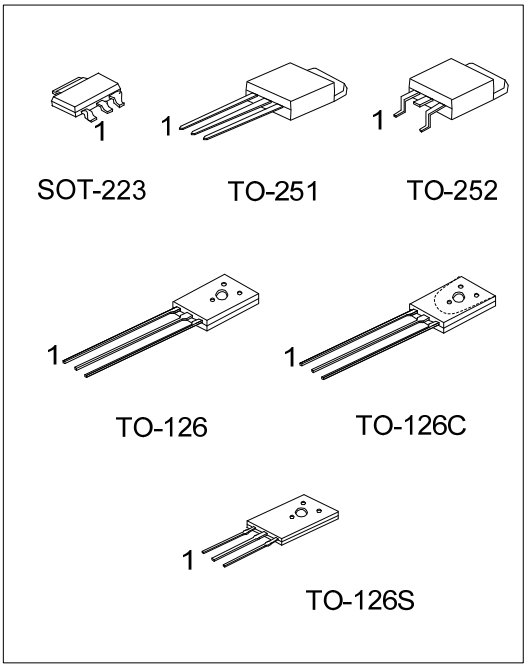
2SA1627A

PNP SILICON TRANSISTOR

PNP EPITAXIAL SILICON TRANSISTOR



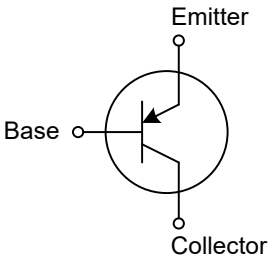
■ DESCRIPTION

The UTC **2SA1627A** is designed for general purpose amplifier and high speed switching applications.

■ FEATURES

* High voltage
* Low collector saturation voltage.
* High-speed switching

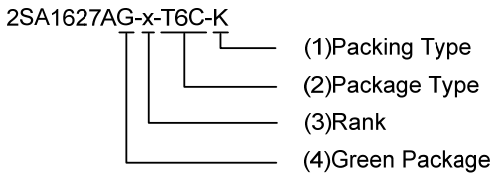
■ SYMBOL



■ ORDERING INFORMATION

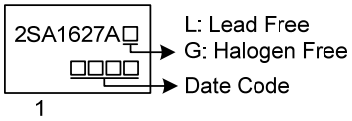
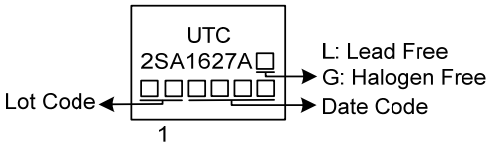
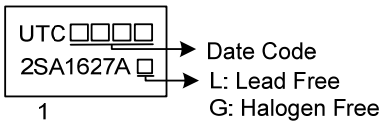
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SA1627AL-x-AA3-R	2SA1627AG-x-AA3-R	SOT-223	B	C	E	Tape Reel
2SA1627AL-x-TM3-T	2SA1627AG-x-TM3-T	TO-251	B	C	E	Tube
2SA1627AL-x-TN3-R	2SA1627AG-x-TN3-R	TO-252	B	C	E	Tape Reel
2SA1627AL-x-T60-K	2SA1627AG-x-T60-K	TO-126	E	C	B	Bulk
2SA1627AL-x-T6C-K	2SA1627AG-x-T6C-K	TO-126C	E	C	B	Bulk
2SA1627AL-x-T6S-K	2SA1627AG-x-T6S-K	TO-126S	B	C	E	Bulk

Note: Pin Assignment: B: Base E: Emitter C: Collector



(1) K: Bulk, R: Tape Reel, T: Tube
(2) AA3: SOT-223, TM3: TO-251, TN3: TO-252
T60: TO-126, T6C: TO-126C, T6S: TO-126S
(3) x: reference to Classification of h_{FE1}
(4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

PACKAGE	MARKING
SOT-223	
TO-251 / TO-252	
TO-126 TO-126C TO-126S	

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	-600	V
Collector-Emitter Voltage		V_{CEO}	-600	V
Emitter-Base Voltage		V_{EBO}	-7.0	V
Collector Power Dissipation (T_C=25°C)	SOT-223	P_C	3	W
	TO-251/TO-252		25	W
	TO-126/TO-126C TO-126S		15	W
Collector Current (DC)		I_C	-1.0	A
Collector Current (Pulse) (Note 2)		I_{CP}	-2.0	A
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

Notes: 1. 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.
2. $P_W \leqq 10$ms, Duty Cycle $\leqq 50\%$

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	156	°C/W
	TO-251/TO-252		80	°C/W
	TO-126/TO-126C TO-126S		125	°C/W
Junction to Case	SOT-223	θ_{JC}	41.6	°C/W
	TO-251/TO-252		5	°C/W
	TO-126/TO-126C TO-126S		8.3	°C/W

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-Off Current	I_{CBO}	V_{CB}= -600V, I_E=0			-10	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}= -7.0V, I_C=0			-10	μA
DC Current Gain (Note 2)	h_{FE1}	V_{CE}= -5.0V, I_C= -0.1A	30		120	
	h_{FE2}	V_{CE}= -5.0V, I_C= -0.5A	4			
Collector-Emitter Saturation Voltage(Note)	$V_{CE(SAT)}$	I_C= -0.3A, I_B= -0.06A		-0.28	-1.5	V
Base-Emitter Saturation Voltage(Note)	$V_{BE(SAT)}$	I_C= -0.3A, I_B= -0.06A		-0.85	-1.2	V
Gain Bandwidth Product	f_T	V_{CE}= -10V, I_E=0.1A	10	28		MHz
Output Capacitance	C_{OB}	V_{CB}= -10V, I_E=0, f=1.0MHz		42	50	pF
Turn-On Time	t_{ON}	I_C=-0.5A, R_L=500Ω, I_{B1}= -I_{B2}= -0.1A, V_{CC} =-250V		0.1	0.5	μs
Storage Time	T_{SYG}			3.5	5.0	μs
Fall Time	t_F			0.08	0.5	μs

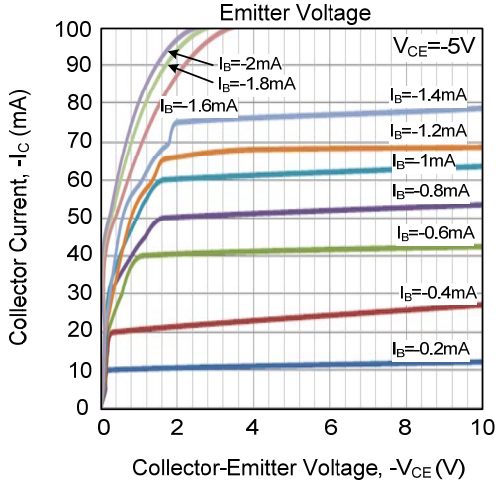
Note: Pulsed $P_W \leqq 350$μs, Duty Cycle $\leqq 2\%$.

■ CLASSIFICATION OF h_{FE1}

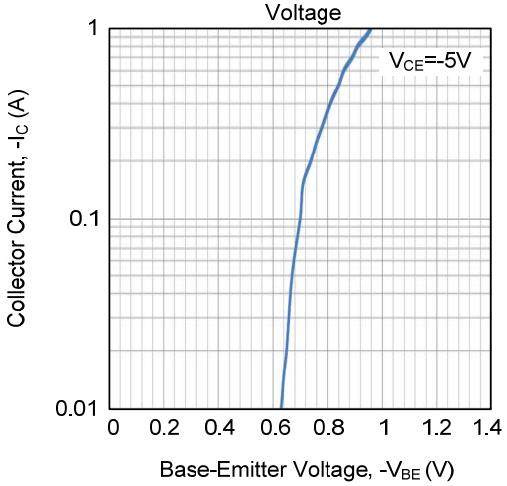
RANK	M	L	K
RANGE	30-60	40-80	60-120

■ TYPICAL CHARACTERISTICS

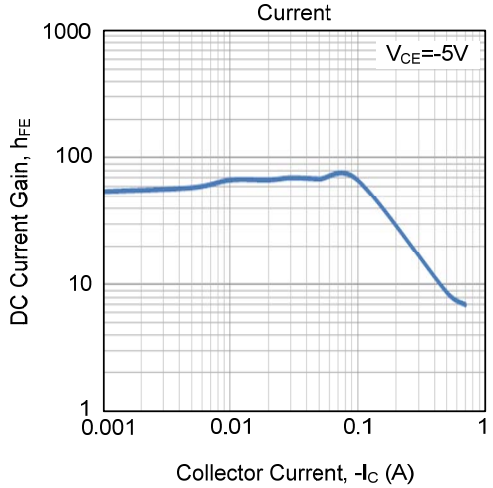
Collector Current vs. Collector-Emitter Voltage



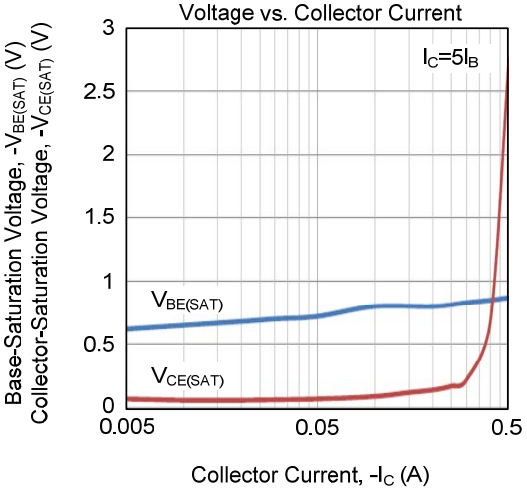
Collector Current vs. Base-Emitter Voltage



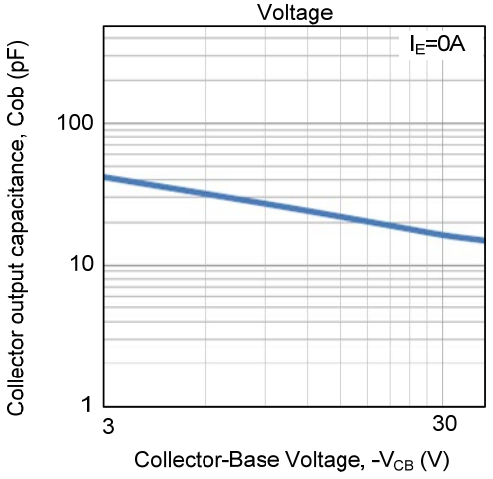
DC Current Gain vs. Collector Current



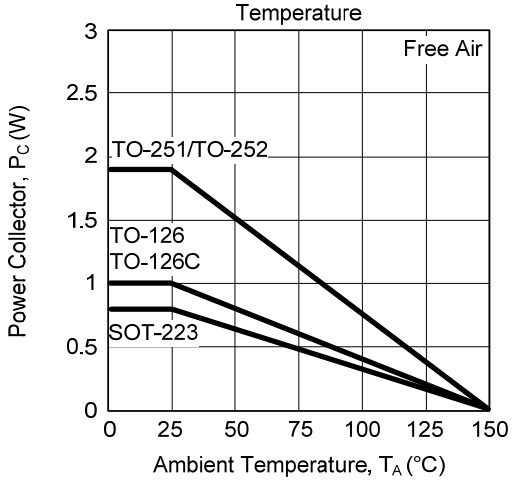
Collector and Base Saturation Voltage vs. Collector Current



Gain-Bandwidth Product vs. Base Voltage



Power Collector vs. Ambient Temperature



■ TYPICAL CHARACTERISTICS (Cont.)