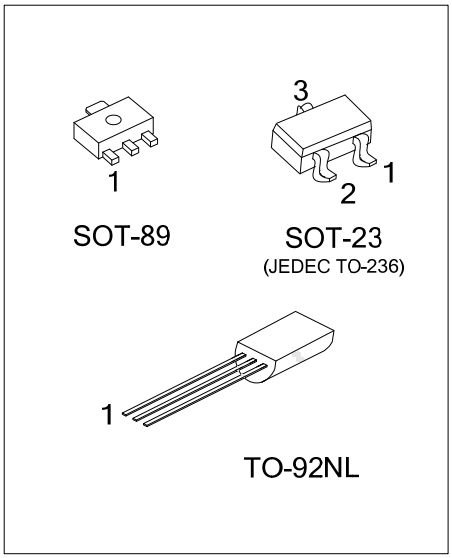
2SA1020

PNP SILICON TRANSISTOR

SILICON PNP EPITAXIAL TRANSISTOR



■ DESCRIPTION

The UTC **2SA1020** is designed for power amplifier and power switching applications.

■ FEATURES

*Low collector saturation voltage:
$V_{CE(SAT)}$=-0.5$V_{(MAX)}$ (I_C= -1A)
*High speed switching time: t_{STG}=1.0μs(TYP)
*Complement to UTC 2SC2655

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	2SA1020G-x-AE3-R	SOT-23	E	B	C	Tape Reel
-	2SA1020G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SA1020L-x-T9N-B	2SA1020G-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SA1020L-x-T9N-K	2SA1020G-x-T9N-K	TO-92NL	E	C	B	Bulk

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

2SA1020G-x-AE3-R (1)Packing Type (2)Package Type (3)Rank (4)Lead Free	(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AE3: SOT-23, AB3: SOT-89, T9N: TO-92NL (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

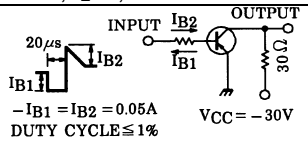
SOT-23	SOT-89	TO-92NL
A10G	2SA1020G □□□□ Data Code 1	L: Lead Free G: Halogen Free Data Code UTC 2SA1020□ □□□□

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	-50	V
Collector-Emitter Voltage		V_{CEO}	-50	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		Ic	-2	A
Collector Power Dissipation	SOT-23	P_C	300	mW
	SOT-89		500	mW
	TO-92NL		900	mW
Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°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.

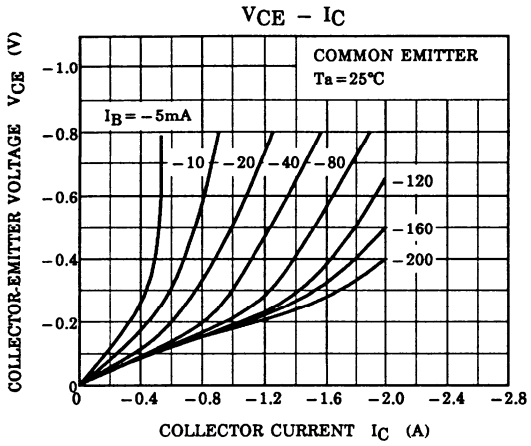
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

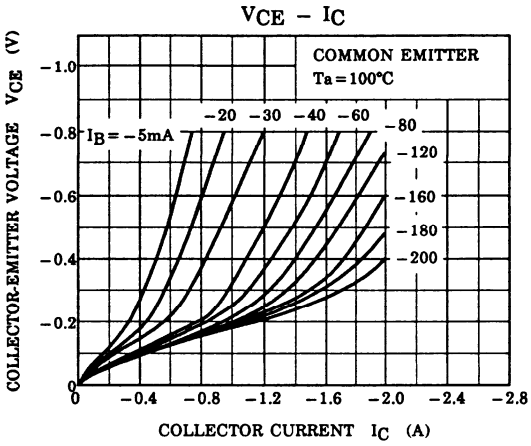
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Emitter Breakdown Voltage		BV_{CEO}	I_C=-10mA, I_B=0	-50			V
Collector Cut-off Current		I_{CBO}	V_{CB}=-50V, I_E=0			-1.0	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=-5V, I_C=0			-1.0	μA
DC Current Gain		h_{FE1}	V_{CE}=-2V, I_C=-0.5A	70		240	
		h_{FE2}	V_{CE}=-2V, I_C=-1.5A	40			
Collector to Emitter Saturation Voltage		$V_{CE(SAT)}$	I_C=-1A, I_B=-0.05A			-0.5	V
Base to Emitter Saturation Voltage		$V_{BE(SAT)}$	I_C=-1A, I_B=-0.05A			-1.2	V
Transition Frequency		f_T	V_{CE}=-2V, I_c=-0.5A		100		MHz
Collector Output Capacitance		C_{OB}	V_{CB}=-10V, I_E=0, f=1MHz		40		pF
Switching Time	Turn-on Time	t_{ON}			0.1		μs
	Storage Time	t_{STG}			1.0		μs
	Fall Time	t_F			0.1		μs

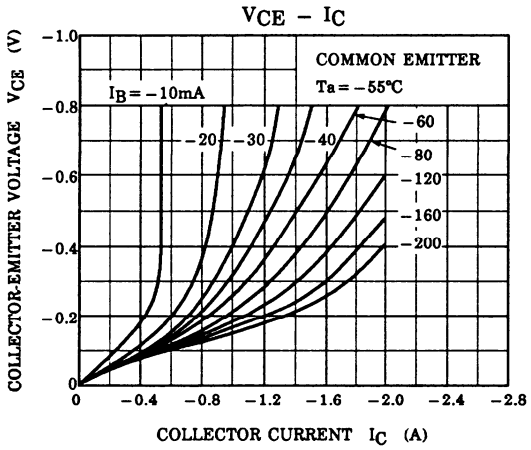
■ CLASSIFICATION OF h_{FE1}

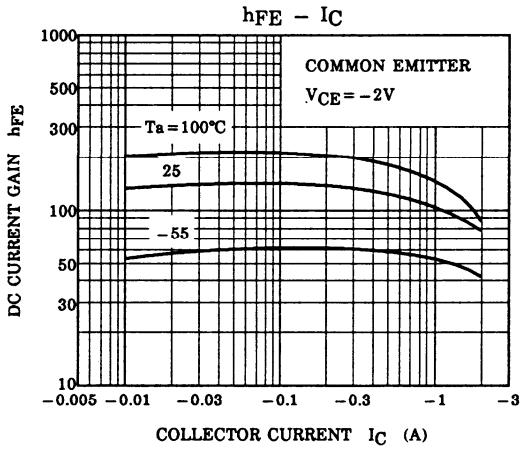
RANK	O	Y
RANGE	70 - 140	120 - 240

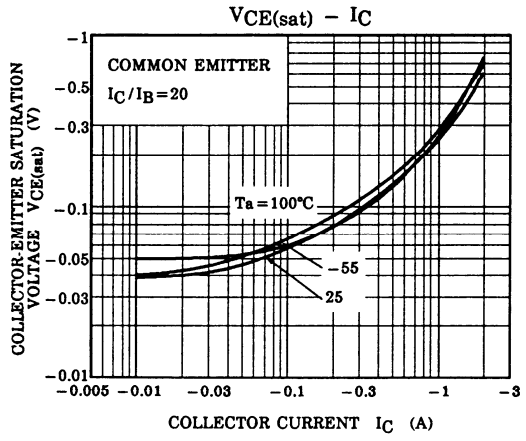
■ TYPICAL CHARACTERISTICS

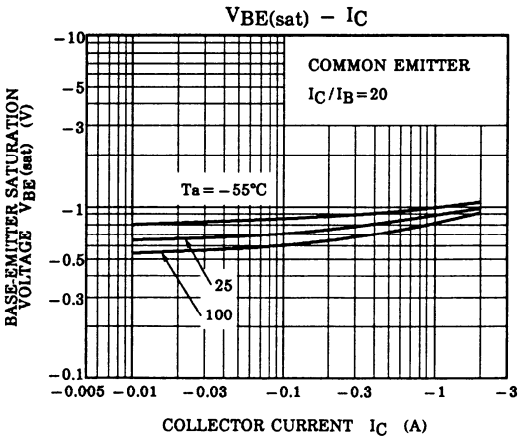












■ TYPICAL CHARACTERISTICS(Cont.)